

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching Techniques in the Remedial Environment

Appendices

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Appendix 1a: Sample Group One

Combined 2002 and 2001 pilot study

Mainstream education system (n=8)

Participant Code	Intervention Type
JWA	Treatment
JWB	Treatment
JWC	Treatment
JWD	Treatment
JWE	Treatment
GRC	Treatment
GRD	Treatment
GRE	Treatment

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Phonic Inventories – Child GRC

2002-02-04

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	1		
Medial Vowels			
Medial Vowel Digraphs		6	
Ending Consonants			
Ending Blends/Clusters	3	1	
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			8
Syllabification Errors			

2002-10-14

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1	1	
Medial Vowels	2	1	
Medial Vowel Digraphs			
Ending Consonants			
Ending Blends	2		
Long and Short Vowel Confusion		2	6
Consonant/Sound Confusion			
Reversals/Transposals		1	
Errors with Prefixes			
Errors with Suffixes		3	3
Syllabification Errors			

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Test Results – Child GRC

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
February 2002	12yrs 3mth	11yrs 5mths	7yrs 10mths	9yrs 8mths
Raw Score		72	5	48
October 2002	12yrs 10mths	11yrs 8mths	10yrs 6mths	10yrs 4mths
Raw Score		74	17	54

Gained Scale Score		0yrs 3mths	2yrs 8mths	0yrs 8mths
Gained Raw Score		2	12	6

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
February 2002	8yrs 6mths	9yrs 6mths	8yrs 8mths
Raw Score	2	5	11
Positive Score	22	25	23
October 2002	8yrs 9mths	10yrs	10yrs 6mths
Raw Score	3	1	3
Positive Score	23	26	27

Gained Scale Score	0yrs 3mths	0rs 6mths	1yr 10mths
Gained Raw Score	1	4	8
Gained Positive Score	1	1	4

Test Results Summary - Case GRC

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 3mths	2
Holborn Reading Test	2yrs 8mths	12
Schonell Spelling	0yrs 8mths	6
Schonell Graded Dictation – Test B	0yrs 3mths	1
Schonell Graded Dictation – Test C	0yrs 6mths	4
Schonell Graded Dictation – Test D	1yr 10mths	8

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Phonic Inventories – Child GRD

2002-01-23

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	11		
Medial Vowels	5		
Medial Vowel Digraphs			
Ending Consonants			
Ending Blends/Clusters	14		
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

2002-10-17

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	2		
Medial Vowels	6	3	
Medial Vowel Digraphs		17	
Ending Consonants			
Ending Blends	11	3	
Long and Short Vowel Confusion		10	
Consonant/Sound Confusion			
Reversals/Transposals		4	
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors		2	

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Test Results – Child GRD

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
February 2002	9yrs 0mths	7yrs 2mths	7yrs 7mths	6yrs 9mths
Raw Score		18	4	19
October 2002	9yrs 7mths	8yrs	8yrs 6mths	7yrs 4mths
Raw Score		30	8	24

Gained Scale Score		0yrs 10mths	0yrs 11mths	0yrs 7mths
Gained Raw Score		12	4	5

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
February 2002			
Raw Score			
October 2002			
Raw Score	7	7	

Gained Scale Score			
Gained Raw Score			
Gained Positive Score			

Test Results Summary - Case GRD

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 10mths	12
Holborn Reading Test	0yrs 11mths	4
Schonell Spelling	0yrs 7mths	5
Schonell Graded Dictation – Test B		7
Schonell Graded Dictation – Test C		7
Schonell Graded Dictation – Test D		

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Phonic Inventories – Child GRE

2002-01-26

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	2		
Medial Vowels	3		
Medial Vowel Digraphs		26	
Ending Consonants			
Ending Blends/Clusters	12	4	11
Long and Short Vowel Confusion	2	5	
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			17
Syllabification Errors			

2002-11-27

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends		2	
Medial Vowels			
Medial Vowel Digraphs		17	
Ending Consonants			
Ending Blends	14	8	7
Long and Short Vowel Confusion	1	2	1
Consonant/Sound Confusion			5
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			18
Syllabification Errors			

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Test Results – Child GRE

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
January 2002	12yrs 4mths	7yrs 9mths	8yrs	7yrs 5mths
Raw Score		28	6	25
November 2002	13yrs 2mths	8yrs 7mths	8yrs 11mths	7yrs 8mths
Raw Score		38	10	28

Gained Scale Score		0yrs 10mths	0yrs 11mths	0yrs 3mths
Gained Raw Score		10	4	3

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
January 2002	6yrs 6mths	6yrs 6mths	6yrs 6mths
Raw Score	14	20	25
Positive Score	11	10	13
November 2002	7yrs 0mths	6yrs 8mths	7yrs 6mths
Raw Score	11	18	20
Positive Score	14	13	17

Gained Scale Score	0yrs 6mths	0yrs 2mths	1yr 0mths
Gained Raw Score	3	2	5
Gained Positive Score	3	3	4

Test Results Summary - Case GRE

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 10mths	10
Holborn Reading Test	0yrs 11mths	4
Schonell Spelling	0yrs 3mths	3
Schonell Graded Dictation – Test B	0yrs 6mths	3
Schonell Graded Dictation – Test C	0yrs 2mths	2
Schonell Graded Dictation – Test D	1yr 0mths	5

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Phonic Inventories – Child JWA

May 1999

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	1		
Medial Vowels	2	2	
Medial Vowel Digraphs	1	6	
Ending Consonants			
Ending Blends/Clusters	9	2	
Long and Short Vowel Confusion		4	
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

June 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	2		
Medial Vowels	3		
Medial Vowel Digraphs			
Ending Consonants			
Ending Blends/Clusters	3		
Long and Short Vowel Confusion			
Consonant/Sound Confusion	3		
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

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Test Results – Child JWA

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
February 2001	11yrs 2mths			9yrs 0mths
Raw Score				40
August 2001	11yrs 8mths			9yrs 4mths
Raw Score				44

Gained Scale Score				0yrs 4mths
Gained Raw Score				4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
February 2001	8yrs 3mths	7yrs 7mths	
Raw Score	5	13	
Positive Score	16	17	
August 2002	8yrs 6mths	9yrs 9mths	8yrs 6mths
Raw Score	5	5	13
Positive Score	17	25	21

Gained Scale Score	0yrs 3mths	2yrs 2mths	
Gained Raw Score	0	8	
Gained Positive Score	1	8	

Test Results Summary – Case JWA

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition		
Holborn Reading Test		
Schonell Spelling	0yrs 4mths	4
Schonell Graded Dictation – Test B	0yrs 3mths	0
Schonell Graded Dictation – Test C	2yrs 2mths	8
Schonell Graded Dictation – Test D		

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Phonic Inventories – Child JWB

February 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters			
Medial Vowels	4	8	2
Medial Vowel Digraphs		14	1
Ending Consonants	3		
Ending Blends/Clusters	4	2	3
Long and Short Vowel Confusion	1	5	6
Consonant/Sound Confusion	2		4
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			6
Syllabification Errors			

October 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends			
Medial Vowels	3	6	2
Medial Vowel Digraphs		6	
Ending Consonants	1	1	
Ending Blends/Clusters	3	1	2
Long and Short Vowel Confusion		5	7
Consonant/Sound Confusion	3		6
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			4
Syllabification Errors			

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Test Results – Child JWB

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
February 2001	11yrs 7mths	10yrs 5mths	8yrs 3mths	8yrs 6mths
Raw Score		62	7	35
October 2001	12yrs 3mths	10yrs 0mths	9yrs 7mths	8yrs 8mths
Raw Score		56	13	38

Gained Scale Score		-0yrs 5mths	1yr 4mths	0yrs 2mths
Gained Raw Score		-6	6	3

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
February 2001	8yrs 0mths	7yrs 6mths	8yrs 4mths
Raw Score	7	13	13
Positive Score	18	17	21
October 2001	8yrs 4mths	7yrs 4mths	7yrs 0mths
Raw Score	6	15	19
Positive Score	19	15	17

Gained Scale Score	0yrs 4mths	-0yrs 2mths	-1yr 4mths
Gained Raw Score	1	-2	-6
Gained Positive Score	1	-2	

Test Results Summary – Case JWB

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	-0yrs 5mths	-6
Holborn Reading Test	1yr 4mths	6
Schonell Spelling	0yrs 2mths	3
Schonell Graded Dictation – Test B	0yrs 4mths	1
Schonell Graded Dictation – Test C	-0yrs 2mths	-2
Schonell Graded Dictation – Test D	-1yr 4mths	-6

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Phonic Inventories – Child JWC

February 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters			
Medial Vowels		4	1
Medial Vowel Digraphs	1	10	1
Ending Consonants			
Ending Blends/Clusters	1	4	3
Long and Short Vowel Confusion	1	3	
Consonant/Sound Confusion	5	2	4
Reversals/Transposals		1	
Errors with Prefixes			
Errors with Suffixes			1
Syllabification Errors			

Date

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends			
Medial Vowels			
Medial Vowel Digraphs			
Ending Consonants			
Ending Blends/Clusters			
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

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Test Results – Child JWC

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
November 2000	13yrs 9mths	10yrs 1mth	9yrs 2mths	8yrs 8mths
Raw Score		58	11	38
January 2002	15yrs 3mths	12yrs 1mth	8yrs 11mths	9yrs 3mths
Raw Score		77	10	44

Gained Scale Score		2yrs 0mths	-0yrs 3mths	0yrs 7mths
Gained Raw Score		19	-1	6

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
July 2000	9yrs 2mths	7yrs 6mths	7yrs 6mths
Raw Score	2	13	19
Positive Score	25	17	17
January 2002	8yrs 10mths	7yrs 10mths	8yrs 10mths
Raw Score	3	12	15
Positive Score	23	18	20

Gained Scale Score	-0yrs 4mths	0yrs 4mths	1yr 4mths
Gained Raw Score	-1	1	4
Gained Positive Score	-2	1	3

Test Results Summary – Case JWC

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	2yrs 0mths	19
Holborn Reading Test	-0yrs 3mths	-1
Schonell Spelling	0yrs 7mths	6
Schonell Graded Dictation – Test B	-0yrs 4mths	-1
Schonell Graded Dictation – Test C	0yrs 4mths	1
Schonell Graded Dictation – Test D	1yr 4mths	4

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Phonic Inventories – Child JWD

March 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	2		
Medial Vowels		1	
Medial Vowel Digraphs		2	
Ending Consonants			
Ending Blends/Clusters	2		
Long and Short Vowel Confusion		2	5
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

August 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends			
Medial Vowels		2	
Medial Vowel Digraphs		1	
Ending Consonants	1		
Ending Blends/Clusters			3
Long and Short Vowel Confusion		1	2
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			2
Syllabification Errors			

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Test Results – Child JWD

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
February 2001	11yrs 7mths	10yrs 1mth	9yrs 2mths	10yrs 0mths
Raw Score		57	11	50
August 2001	12yrs 1mths	10yrs 9mths	9yrs 2mths	10yrs 4mths
Raw Score		66	11	53

Gained Scale Score		0yrs 8mths	0yrs 0mths	0yrs 4mths
Gained Raw Score		7	0	3

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
February 2001	9yrs 6mths	8yrs 6mths	9yrs 6mths
Raw Score	1	6	7
Positive Score	26	24	26
November 2001	9yrs 6mths	9yrs 6mths	9yrs 6mths
Raw Score	1	3	5
Positive Score	26	27	27

Gained Scale Score	0yrs 0mths	1yr 0mths	0yrs 0mths
Gained Raw Score	0	3	2
Gained Positive Score	0	3	1

Test Results Summary – Case JWD

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 8mths	7
Holborn Reading Test	0yrs 0mths	0
Schonell Spelling	0yrs 4mths	3
Schonell Graded Dictation – Test B	0yrs 0mths	0
Schonell Graded Dictation – Test C	1yr 0mths	3
Schonell Graded Dictation – Test D	0yrs 0mths	2

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Phonic Inventories – Child JWE

February 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters			
Medial Vowels			
Medial Vowel Digraphs		1	
Ending Consonants	1		
Ending Blends/Clusters	1		
Long and Short Vowel Confusion		2	6
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			6
Syllabification Errors			

August 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends			
Medial Vowels			
Medial Vowel Digraphs		2	
Ending Consonants			
Ending Blends/Clusters	1		
Long and Short Vowel Confusion			5
Consonant/Sound Confusion	1		
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			6
Syllabification Errors			

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Test Results – Child JWE

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
February 2001	12yrs 5mths	11yrs 10mths	9yrs 10mths	9yrs 6mths
Raw Score		75	14	54
August 2001	12yrs 11mths	12yrs 2mths	11yrs 10mths	13yrs 2mths
Raw Score		79	23	67

Gained Scale Score		0yrs 4mths	1yr 4mths	2yrs 7mths
Gained Raw Score		4	6	7

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
February 2001	10yrs 0mths	12yrs 0mths	12yrs 0mths
Raw Score	1	1	3
Positive Score	26	29	29
October 2001	10yrs 0mths	12yrs 0mths	13yrs 6mths
Raw Score	1	1	0
Positive Score	26	29	32

Gained Scale Score	0yrs 0mths	0yrs 0mths	1yrs 6mths
Gained Raw Score	0	0	3
Gained Positive Score	0	0	3

Test Results Summary – Case JWE

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 4mths	4
Holborn Reading Test	1yr 4mths	6
Schonell Spelling	2yrs 7mths	7
Schonell Graded Dictation – Test B	0yrs 0mths	0
Schonell Graded Dictation – Test C	0yrs 0mths	0
Schonell Graded Dictation – Test D	1yr 6mths	3

Appendix 1b: Sample Group Two

2001 pilot study

Japari Remedial School

Fulltime Remedial education (n=6)

Participant Code	Intervention Type
EMU	Treatment
EMV	Treatment
EMW	Treatment
EMX	Control
EMY	Control
EMZ	Control

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Phonic Inventories – Case EMU

February 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	4		
Medial Vowels			2
Medial Vowel Digraphs		4	1
Ending Consonants			
Ending Blends/Clusters	5	5	2
Long and Short Vowel Confusion			4
Consonant/Sound Confusion	2		
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			1

October 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	2	1	
Medial Vowels	2	1	2
Medial Vowel Digraphs		2	
Ending Consonants			
Ending Blends/Clusters	2	2	
Long and Short Vowel Confusion		2	
Consonant/Sound Confusion			
Reversals/Transposals		1	
Errors with Prefixes			
Errors with Suffixes			1
Syllabification Errors			1

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case EMU

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
November 2000	11yrs 8mths	9yrs 0mths	9yrs 2mths	9yrs 0mths
Raw Score		43	11	42
October 2001	12yrs 7mths	10yrs 6mths	10yrs 6mths	9yrs 5mths
Raw Score		63	17	46

Gained Scale Score	11mths	1yr 6mths	1yr 4mths	5mths
Gained Raw Score		20	6	4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
November 2000	8yrs 5mths	7yrs 5mths	8yrs 5mths
Raw Score	5	15	15
Positive Score	21	15	20
October 2001	9yrs 6mths	7yrs 6mths	8yrs 6mths
Raw Score	2	14	14
Positive Score	24	16	21

Gained Scale Score	1yr 1mth	0yrs 1mth	0yrs 1mth
Gained Raw Score	3	1	1
Gained Positive Score	3	1	1

Test Results Summary - Case EMU

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 6mths	20
Holborn Reading Test	1yr 4mths	6
Schonell Spelling	0yrs 5mths	4
Schonell Graded Dictation – Test B	1yr 1mth	3
Schonell Graded Dictation – Test C	0yrs 1mth	1
Schonell Graded Dictation – Test D	0yrs 1mth	1

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Phonic Inventories – Case EMV

March 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	2		
Medial Vowels	2	7	
Medial Vowel Digraphs		7	1
Ending Consonants	2	2	
Ending Blends/Clusters	9	7	4
Long and Short Vowel Confusion	1	1	
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			7
Syllabification Errors			

October 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	2		
Medial Vowels	1	7	1
Medial Vowel Digraphs		3	
Ending Consonants	1	1	
Ending Blends/Clusters	5	7	2
Long and Short Vowel Confusion		2	
Consonant/Sound Confusion			
Reversals/Transposals		10	
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			2

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case EMV

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
November 2000	11yrs 1mth	8yrs 10mths	9yrs 2mths	8yrs 7mths
Raw Score		41	11	39
October 2001	12yrs 1mth	10yrs 3mths	9yrs 10mths	8yrs 7mths
Raw Score		60	14	39

Gained Scale Score	1yr 0mths	1yr 6mths	0yrs 8mths	0yrs 0mths
Gained Raw Score		19	3	0

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
November 2000	7yrs 2mths	7yrs 0mths	8yrs 0mths
Raw Score	10	16	17
Positive Score	15	14	19
October 2001	7yrs 6mths	7yrs 0mths	7yrs 9mths
Raw Score	8	16	18
Positive Score	17	14	18

Gained Scale Score	0yrs 4mths	0yrs 0mths	-0yrs 3mths
Gained Raw Score	2	0	-1
Gained Positive Score	2	0	-1

Test Results Summary - Case EMV

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 6mths	19
Holborn Reading Test	0yrs 8mths	3
Schonell Spelling	0yrs 0mths	0
Schonell Graded Dictation – Test B	0yrs 4mths	2
Schonell Graded Dictation – Test C	0yrs 0mths	0
Schonell Graded Dictation – Test D	-0yrs 3mths	-1

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Phonic Inventories – Case EMW

February 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		3	
Initial Blends/Clusters		3	
Medial Vowels		5	2
Medial Vowel Digraphs		26	
Ending Consonants		1	
Ending Blends/Clusters	5	8	8
Long and Short Vowel Confusion		1	1
Consonant/Sound Confusion			
Reversals/Transposals		2	
Errors with Prefixes			
Errors with Suffixes			10
Syllabification Errors			7

October 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	3	2	
Medial Vowels	6	2	5
Medial Vowel Digraphs		13	2
Ending Consonants	5	2	
Ending Blends/Clusters	8	8	12
Long and Short Vowel Confusion	2		1
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			1
Errors with Suffixes			10
Syllabification Errors			2

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results - Case EMW

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
November 2000	12yrs 2mths	7yrs 8mths	7yrs 10mths	7yrs 6mths
Raw Score		27	5	26
October 2001	13yrs 1mth	8yrs 1mth	8yrs 8mths	7yrs 4mths
Raw Score		31	9	24

Gained Scale Score	0yrs 11mths	0yrs 5mths	0yrs 10mths	-0yrs 2mths
Gained Raw Score		4	4	-2

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
November 2000	6yrs 0mths	6yrs 2mths	6yrs 6mths
Raw Score	16	20	27
Positive Score	9	10	11
October 2001	7yrs 2mths	6yrs 6mths	7yrs 6mths
Raw Score	10	19	22
Positive Score	15	11	16

Gained Scale Score	1yrs 1mth	0yrs 4mths	0yrs 1yr
Gained Raw Score	6	1	5
Gained Positive Score	6	1	4

Test Results Summary - Case EMW

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 5mths	4
Holborn Reading Test	0yrs 10mths	4
Schonell Spelling	-0yrs 2mths	-2
Schonell Graded Dictation – Test B	1yr 1mth	6
Schonell Graded Dictation – Test C	0yrs 4mths	1
Schonell Graded Dictation – Test D	1yr 0mths	5

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Phonic Inventories – Case EMX

May 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters		1	
Medial Vowels	3	6	2
Medial Vowel Digraphs		10	4
Ending Consonants	3	2	
Ending Blends/Clusters	7	8	3
Long and Short Vowel Confusion	2		
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			6
Syllabification Errors			6

September 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1	1	
Initial Blends			
Medial Vowels		3	1
Medial Vowel Digraphs		9	
Ending Consonants		2	2
Ending Blends/Clusters	12	4	7
Long and Short Vowel Confusion	3		
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			2
Syllabification Errors			2

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results - Case EMX

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
November 2000	12yrs 8mths	10yrs 5mths	9yrs 5mths	8yrs 8mths
Raw Score		62	12	40
October 2001	13yrs 8mths	10yrs 7mths	9yrs 10mths	9yrs 2mths
Raw Score		64	14	44

Gained Scale Score	1yr 0mths	0yrs 2mths	0yrs 5mths	0yrs 7mths
Gained Raw Score		2	2	4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
November 2000	8yrs 8mths	7yrs 9mths	8yrs 6mths
Raw Score	3	7	12
Positive Score	23	23	22
October 2001	8yrs 8mths	8yrs 4mths	8yrs 4mths
Raw Score	3	5	13
Positive Score	23	25	21

Gained Scale Score	0yrs 0mths	0yrs 7mths	-0yrs 2mths
Gained Raw Score	0	2	-1
Gained Positive Score	0	2	-1

Test Results Summary – Case EMX

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 2mths	2
Holborn Reading Test	0yrs 5mths	2
Schonell Spelling	0yrs 7mths	4
Schonell Graded Dictation – Test B	0yrs 0mths	0
Schonell Graded Dictation – Test C	0yrs 7mths	2
Schonell Graded Dictation – Test D	-0yrs 2mths	-1

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Phonic Inventories – Case EMY

May 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	2		
Medial Vowels	1		1
Medial Vowel Digraphs		8	
Ending Consonants		1	
Ending Blends/Clusters	2		1
Long and Short Vowel Confusion		1	1
Consonant/Sound Confusion			1
Reversals/Transposals			1
Errors with Prefixes			
Errors with Suffixes			4
Syllabification Errors			

October 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels		1	3
Medial Vowel Digraphs		2	
Ending Consonants			
Ending Blends/Clusters		2	2
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			2
Syllabification Errors			

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case EMY

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
November 2000	12yrs 2mths	11yrs 8mths	10yrs 6mths	8yrs 5mths
Raw Score		74	17	37
October 2001	13yrs 1mth	12yrs 3mths	11yrs 10mths	9yrs 2mths
Raw Score		79	23	44

Gained Scale Score	0yrs 11mths	0yrs 5mths	1yr 4mths	0yrs 9mths
Gained Raw Score		5	6	7

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
November 2000	10yrs 6mths	8yrs 4mths	8yrs 8mths
Raw Score	0	5	7
Positive Score	27	25	26
October 2001	10yrs 6mths	10yrs 6mths	8yrs 8mths
Raw Score	0	3	7
Positive Score	27	27	26

Gained Scale Score	0yrs 0mths	0yrs 4mths	0yrs 0mths
Gained Raw Score	0	2	0
Gained Positive Score	0	2	0

Test Results Summary - Case EMY

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 5mths	5
Holborn Reading Test	1yr 4mths	6
Schonell Spelling	0yrs 9mths	7
Schonell Graded Dictation – Test B	0yrs 0mths	0
Schonell Graded Dictation – Test C	0yrs 4mths	2
Schonell Graded Dictation – Test D	0yrs 0mths	0

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Phonic Inventories – Case EMZ

May 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	1		
Medial Vowels	1	5	1
Medial Vowel Digraphs		5	
Ending Consonants			11
Ending Blends/Clusters	1	7	3
Long and Short Vowel Confusion	3	5	
Consonant/Sound Confusion	1	1	5
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

October 2001

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends	3		
Medial Vowels	2	6	11
Medial Vowel Digraphs		3	
Ending Consonants		1	1
Ending Blends/Clusters	6	12	2
Long and Short Vowel Confusion	1	2	
Consonant/Sound Confusion			
Reversals/Transposals			1
Errors with Prefixes			
Errors with Suffixes			8
Syllabification Errors			5

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case EMZ

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
November 2000	11yrs 2mths	10yrs 1mth	10yrs 3mths	8yrs 8mths
Raw Score		60	16	40
October 2001	12yrs 1mth	10yrs 8mths	11yrs 8mths	9yrs 0mths
Raw Score		65	22	42

Gained Scale Score	0yrs 11mths	0yrs 7mths	1yr 5mths	0yrs 2mths
Gained Raw Score		5	6	2

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
November 2000	6yrs 10mths	7yrs 11mths	7yrs 11mths
Raw Score	11	11	19
Positive Score	14	19	17
October 2001	7yrs 8mths	8yrs 4mths	7yrs 11mths
Raw Score	7	9	19
Positive Score	18	21	17

Gained Scale Score	0yrs 10mths	0yrs 5mths	0yrs 0mths
Gained Raw Score	4	2	0
Gained Positive Score	4	2	0

Test Results Summary - Case EMZ

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 7mths	5
Holborn Reading Test	1yr 5mths	6
Schonell Spelling	0yrs 2mths	2
Schonell Graded Dictation – Test B	0yrs 10mths	4
Schonell Graded Dictation – Test C	0yrs 5mths	2
Schonell Graded Dictation – Test D	0yrs 0mths	0

Appendix 1c: Sample Group Three

2002 pilot study

Japari Remedial School

Fulltime Remedial education (n=15)

Participant Code	Intervention Type
JPR	Treatment
JPS	Treatment
JPT	Treatment
JPO	Control
JPP	Control
JPQ	Control
MRP	Treatment
MRQ	Treatment
MRR	Treatment
MRS	Treatment
MRT	Treatment
YSB	Treatment
YSC	Treatment
YSD	Treatment
YSE	Treatment

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Phonic Inventories – Case JPR

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters		1	
Medial Vowels	1		4
Medial Vowel Digraphs	1	9	
Ending Consonants	4	2	2
Ending Blends/Clusters	6	7	11
Long and Short Vowel Confusion	2	1	2
Consonant/Sound Confusion		1	3
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			2
Syllabification Errors			7

November 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends			2
Medial Vowels		3	4
Medial Vowel Digraphs		6	
Ending Consonants			
Ending Blends/Clusters	4	3	3
Long and Short Vowel Confusion	3	4	1
Consonant/Sound Confusion	1	2	2
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			2
Syllabification Errors			3

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Test Results – Case JPR

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
May 2002	12yrs 1mth	8yrs 11mths	7yrs 5mths	9yrs 2mths
Raw Score		42	25	11
November 2002	12yrs 7mths	9yrs 5mths	8yrs	10yrs 1mth
Raw Score		48	30	15

Gained Scale Score	0yrs 6mths	0yrs 6mths	0yrs 7mths	0yrs 11mths
Gained Raw Score		6	5	4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
May 2002	7yrs 9mths	7yrs 9mths	7yrs 6mths
Raw Score	7	12	19
Positive Score	18	18	17
November 2002	8yrs 1mth	7yrs 11mths	7yrs 9mths
Raw Score	6	11	18
Positive Score	19	19	18

Gained Scale Score	0yrs 4mths	0yrs 2mths	0yrs 3mths
Gained Raw Score	1	1	1
Gained Positive Score	1	1	1

Test Results Summary - Case JPR

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 6mths	6
Holborn Reading Test	0yrs 7mths	5
Schonell Spelling	0yrs 11mths	4
Schonell Graded Dictation – Test B	0yrs 4mths	1
Schonell Graded Dictation – Test C	0yrs 2mths	1
Schonell Graded Dictation – Test D	0yrs 3mths	1

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Phonic Inventories – Case JPS

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			4
Initial Blends/Clusters	1		2
Medial Vowels	2	3	4
Medial Vowel Digraphs		4	
Ending Consonants			
Ending Blends/Clusters	7	4	4
Long and Short Vowel Confusion	1	1	
Consonant/Sound Confusion			3
Reversals/Transposals			
Errors with Prefixes			2
Errors with Suffixes			1
Syllabification Errors			3

November 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	2		
Medial Vowels		2	
Medial Vowel Digraphs		1	
Ending Consonants			
Ending Blends/Clusters	3	1	4
Long and Short Vowel Confusion		3	
Consonant/Sound Confusion			3
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			1
Syllabification Errors			3

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Test Results – Case JPS

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
May 2002	10yrs 5mths	9yrs 5mths	8yrs 1mth	9yrs 10mths
Raw Score		48	31	14
November 2002	10yrs 11mths	9yrs 11mths	9yrs	11yrs 2mths
Raw Score		55	40	20

Gained Scale Score	0yrs 6mths	0yrs 6mths	0yrs 11mths	1yr 4mths
Gained Raw Score		7	9	6

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
May 2002	8yrs 3mths	7yrs 1mth	7yrs 3mths
Raw Score	4	14	19
Positive Score	22	16	17
November 2002	8yrs 10mths	7yrs 6mths	7yrs 8mths
Raw Score	2	12	16
Positive Score	24	18	19

Gained Scale Score	0yrs 7mths	0yrs 5mths	0yrs 5mths
Gained Raw Score	2	2	3
Gained Positive Score	2	2	2

Test Results Summary - Case JPS

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 6mths	7
Holborn Reading Test	0yrs 11mths	9
Schonell Spelling	1yr 4mths	6
Schonell Graded Dictation – Test B	0yrs 7mths	2
Schonell Graded Dictation – Test C	0yrs 5mths	2
Schonell Graded Dictation – Test D	0yrs 5mths	3

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Phonic Inventories – Case JPT

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	4		3
Medial Vowels	6	1	
Medial Vowel Digraphs		1	
Ending Consonants	1	1	
Ending Blends/Clusters	6	4	6
Long and Short Vowel Confusion	2	2	2
Consonant/Sound Confusion	1	2	2
Reversals/Transposals		1	1
Errors with Prefixes			
Errors with Suffixes			2
Syllabification Errors			4

November 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels	1	1	
Medial Vowel Digraphs			
Ending Consonants			
Ending Blends/Clusters	2	1	4
Long and Short Vowel Confusion	1	2	
Consonant/Sound Confusion	2	1	2
Reversals/Transposals		1	
Errors with Prefixes			
Errors with Suffixes			2
Syllabification Errors			4

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
Techniques in the Remedial Environment

Test Results – Case JPT

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
May 2002	12yrs 3mths	9yrs 7mths	8yrs 7mths	9yrs 10mths
Raw Score		51	37	14
November 2002	12yrs 9mths	10yrs 1mth	9yrs	10yrs 6mths
Raw Score		58	40	17

Gained Scale Score	0yrs 6mths	0yrs 6mths	0yrs 5mths	0yrs 8mths
Gained Raw Score		7	3	3

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
May 2002	8yrs 9mths	8yrs 1mth	8yrs 4mths
Raw Score	3	10	13
Positive Score	23	20	21
November 2002	9yrs 5mths	8yrs 9mths	9yrs 2mths
Raw Score	2	7	9
Positive Score	24	23	24

Gained Scale Score	0yrs 8mths	0yrs 8mths	0yrs 10mths
Gained Raw Score	1	3	4
Gained Positive Score	1	3	3

Test Results Summary - Case JPT

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 6mths	7
Holborn Reading Test	0yrs 5mths	3
Schonell Spelling	0yrs 8mths	3
Schonell Graded Dictation – Test B	0yrs 8mths	1
Schonell Graded Dictation – Test C	0yrs 8mths	3
Schonell Graded Dictation – Test D	0yrs 10mths	4

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Phonic Inventories – Case JPO

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1	1	
Initial Blends/Clusters			2
Medial Vowels	5	3	1
Medial Vowel Digraphs	2	2	
Ending Consonants	3	4	
Ending Blends/Clusters	6	9	12
Long and Short Vowel Confusion	3		3
Consonant/Sound Confusion	4	7	5
Reversals/Transposals		1	
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			5

November 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends	1		3
Medial Vowels	7	6	
Medial Vowel Digraphs		7	
Ending Consonants	2	1	
Ending Blends/Clusters	5	3	8
Long and Short Vowel Confusion	2	4	1
Consonant/Sound Confusion			3
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			1
Syllabification Errors			3

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
Techniques in the Remedial Environment

Test Results – Case JPO

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
May 2002	11yrs 6mths	8yrs 1mth	8yrs	8yrs 6mths
Raw Score		31	30	8
November 2002	12yrs 0mths	9yrs 0mths	8yrs 2mths	9yrs 7mths
Raw Score		43	32	13

Gained Scale Score	0yrs 6mths	0yrs 11mths	0yrs 2mths	1yr 1mth
Gained Raw Score		12	2	5

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
May 2002	7yrs 3mths	7yrs 1mth	7yrs 1mth
Raw Score	8	14	21
Positive Score	17	0	16
November 2002	7yrs 6mths	7yrs 1mth	7yrs 3mth
Raw Score	7	14	19
Positive Score	18	0	17

Gained Scale Score	0yrs 3mths	0yrs 0mths	0yrs 2mths
Gained Raw Score	1	0	2
Gained Positive Score	1	0	1

Test Results Summary - Case JPO

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 11mths	12
Holborn Reading Test	0yrs 2mths	2
Schonell Spelling	1yr 1mth	5
Schonell Graded Dictation – Test B	0yrs 3mths	1
Schonell Graded Dictation – Test C	0yrs 0mths	0
Schonell Graded Dictation – Test D	0yrs 2mths	2

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Phonic Inventories – Case JPP

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends/Clusters		1	
Medial Vowels	1	9	7
Medial Vowel Digraphs		10	
Ending Consonants		1	4
Ending Blends/Clusters	7	5	3
Long and Short Vowel Confusion	5	14	3
Consonant/Sound Confusion	3		4
Reversals/Transposals		3	3
Errors with Prefixes			
Errors with Suffixes			8
Syllabification Errors			

November 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels		4	3
Medial Vowel Digraphs		3	
Ending Consonants			
Ending Blends/Clusters	2	4	4
Long and Short Vowel Confusion	3	8	2
Consonant/Sound Confusion	1		
Reversals/Transposals		1	
Errors with Prefixes			2
Errors with Suffixes			2
Syllabification Errors			3

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case JPP

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
May 2002	11yrs	7yrs 10mths	7yrs 5mths	8yrs 3mths
Raw Score		29	25	7
November 2002	11yrs 6mths	8yrs 5mths	8yrs 1mth	9yrs 2mths
Raw Score		35	31	11

Gained Scale Score	0yrs 6mths	0yrs 7mths	0yrs 8mths	0yrs 11mths
Gained Raw Score		6	6	4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
May 2002	7yrs 1mth	7yrs 3mths	7yrs 8mths
Raw Score	9	13	16
Positive Score	16	17	19
November 2002	7yrs 8mths	7yrs 6mths	7yrs 10mths
Raw Score	6	12	15
Positive Score	19	18	20

Gained Scale Score	0yrs 7mths	0yrs 3mths	0yrs 2mths
Gained Raw Score	3	1	1
Gained Positive Score	3	1	1

Test Results Summary - Case JPP

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 7mths	6
Holborn Reading Test	0yrs 8mths	6
Schonell Spelling	0yrs 11mths	4
Schonell Graded Dictation – Test B	0yrs 7mths	3
Schonell Graded Dictation – Test C	0yrs 3mths	1
Schonell Graded Dictation – Test D	0yrs 2mths	1

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Phonic Inventories – Case MRP

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters			
Medial Vowels	1		
Medial Vowel Digraphs		7	1
Ending Consonants	1		
Ending Blends/Clusters	3	1	3
Long and Short Vowel Confusion		4	
Consonant/Sound Confusion			
Reversals/Transposals			1
Errors with Prefixes			
Errors with Suffixes		3	1
Syllabification Errors	1	2	

October 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels	2		
Medial Vowel Digraphs		5	
Ending Consonants	2		
Ending Blends/Clusters	1		5
Long and Short Vowel Confusion			2
Consonant/Sound Confusion		4	1
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors		2	

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Test Results – Case MRP

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
November 2001	13yrs	9yrs 5mths	9yrs 10mths	8yrs
Raw Score		48	14	30
October 2002	13yrs 11mths	11yrs	11yrs 10mths	9yrs 2mths
Raw Score		68	23	42

Gained Scale Score	0yrs 11mths	1yr 5mths	2yrs 0mths	1yr 2mths
Gained Raw Score		20	9	12

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
November 2001	7yrs 9mths	7yrs 7mths	8yrs 6mths
Raw Score	7	13	14
Positive Score	18	17	20
October 2002	8yrs 7mths	8yrs 6mths	8yrs 7mths
Raw Score	4	6	12
Positive Score	22	24	22

Gained Scale Score	0yrs 10mths	0yrs 9mths	0yrs 1mth
Gained Raw Score	3	7	2
Gained Positive Score	4	7	2

Test Results Summary Case MRP

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 5mths	20
Holborn Reading Test	2yrs 0mths	9
Schonell Spelling	1yr 2mths	12
Schonell Graded Dictation – Test B	0yrs 10mths	3
Schonell Graded Dictation – Test C	0yrs 9mths	7
Schonell Graded Dictation – Test D	0yrs 1mth	2

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Phonic Inventories – Case MRQ

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	1		
Medial Vowels	1		1
Medial Vowel Digraphs	1	4	1
Ending Consonants			1
Ending Blends/Clusters	6		2
Long and Short Vowel Confusion	5	3	
Consonant/Sound Confusion		5	2
Reversals/Transposals			1
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

October 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	2		
Medial Vowels		5	
Medial Vowel Digraphs			
Ending Consonants	2	1	
Ending Blends/Clusters	1	4	4
Long and Short Vowel Confusion	2	2	1
Consonant/Sound Confusion			1
Reversals/Transposals			2
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

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Test Results – Case MRQ

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
November 2001	12yrs 9mths	10yrs	9yrs 5mths	8yrs 1mth
Raw Score		56	12	31
October 2002	13yrs 8mths	11yrs 3mths	12yrs 4mths	12yrs 6mths
Raw Score		70	25	76

Gained Scale Score	0yrs 11mths	1yr 3mths	2yrs 9mths	4yrs 5mths
Gained Raw Score		14	13	45

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
November 2001	7yrs 2mths	7yrs 6mths	8yrs 10mths
Raw Score	10	14	10
Positive Score	15	16	24
October 2002	7yrs 9mths	8yrs 4mths	8yrs 6mths
Raw Score	7	5	12
Positive Score	18	25	22

Gained Scale Score	0yrs 7mths	0yrs 9mths	-0yrs 4mths
Gained Raw Score	3	5	-2
Gained Positive Score	3	9	-2

Test Results Summary - Case MRQ

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 3mths	14
Holborn Reading Test	2yrs 9mths	13
Schonell Spelling	4yrs 5mths	45
Schonell Graded Dictation – Test B	0yrs 7mths	3
Schonell Graded Dictation – Test C	0yrs 9mths	5
Schonell Graded Dictation – Test D	-0yrs 4mths	-2

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Phonic Inventories – Case MRR

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1		
Initial Blends/Clusters			5
Medial Vowels			2
Medial Vowel Digraphs		8	
Ending Consonants	3	1	1
Ending Blends/Clusters			
Long and Short Vowel Confusion		4	
Consonant/Sound Confusion			
Reversals/Transposals		1	1
Errors with Prefixes			
Errors with Suffixes			4
Syllabification Errors			

October 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels	1		
Medial Vowel Digraphs		3	1
Ending Consonants			1
Ending Blends/Clusters	1		
Long and Short Vowel Confusion		3	3
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

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Test Results – Case MRR

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
November 2001	12yrs 10mths	9yrs 11mths	10yrs 1mth	8yrs 10mth
Raw Score		55	15	42
October 2002	13yrs 9mths	11yrs 5mths	11yrs 10mth	10yrs 1mth
Raw Score		72	23	51

Gained Scale Score	0yrs 11mths	1yr 6mths	1yr 9mths	1yr 3mths
Gained Raw Score		17	9	9

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
November 2001	7yrs 9mths	8yrs 7mths	9yrs 8mths
Raw Score	7	8	8
Positive Score	18	22	25
October 2002	8yrs 6mths	10yrs 6mths	10yrs
Raw Score	4	3	7
Positive Score	22	27	26

Gained Scale Score	0yrs 9mths	1yr 11mths	0yrs 4mth
Gained Raw Score	3	5	1
Gained Positive Score	4	5	1

Test Results Summary - Case MRR

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 6mths	3
Holborn Reading Test	1yr 9mths	9
Schonell Spelling	1yr 3mths	9
Schonell Graded Dictation – Test B	0yrs 9mths	3
Schonell Graded Dictation – Test C	1yr 11mths	5
Schonell Graded Dictation – Test D	0yrs 4mths	1

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Phonic Inventories – Case MRS

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	3		
Initial Blends/Clusters	1		
Medial Vowels	2		
Medial Vowel Digraphs		4	
Ending Consonants			
Ending Blends/Clusters	5	1	
Long and Short Vowel Confusion		3	2
Consonant/Sound Confusion		3	2
Reversals/Transposals	1	1	
Errors with Prefixes	3		
Errors with Suffixes			1
Syllabification Errors	2	3	

October 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	3		
Initial Blends	1		
Medial Vowels	1		
Medial Vowel Digraphs		2	
Ending Consonants			
Ending Blends/Clusters	3		
Long and Short Vowel Confusion		2	1
Consonant/Sound Confusion	1	3	1
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

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Test Results – Case MRS

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
November 2001	12yrs 5mths	9yrs 10mths	9yrs 10mths	9yrs 2mths
Raw Score		54	14	42
October 2002	13yrs 4mths	10yrs 3mths	11yrs 6mths	9yrs 7mths
Raw Score		60	17	47

Gained Scale Score	0yrs 11mths	0yrs 5mths	1yr 9mths	0yrs 5mths
Gained Raw Score		6	3	5

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
November 2001	7yrs 9mths	8yrs 4mths	8yrs 7mths
Raw Score	7	9	11
Positive Score	18	21	23
October 2002	10yrs 6mths	9yrs 5mths	10yrs 6mths
Raw Score	0	5	5
Positive Score	27	25	27

Gained Scale Score	2yrs 9mths	1yr 1mth	1yr 9mth
Gained Raw Score	7	4	6
Gained Positive Score	9	4	4

Test Results Summary - Case MRS

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 5mths	6
Holborn Reading Test	1yr 9mths	3
Schonell Spelling	0yrs 5mths	5
Schonell Graded Dictation – Test B	2yrs 9mths	7
Schonell Graded Dictation – Test C	1yr 1mth	4
Schonell Graded Dictation – Test D	1yr 9mths	6

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Phonic Inventories – Case MRT

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1		
Initial Blends/Clusters			
Medial Vowels	1		
Medial Vowel Digraphs		5	
Ending Consonants	2		
Ending Blends/Clusters	4	2	2
Long and Short Vowel Confusion	2	2	2
Consonant/Sound Confusion		6	2
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			4
Syllabification Errors			

October 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels	1		
Medial Vowel Digraphs		2	
Ending Consonants	2		2
Ending Blends/Clusters	3	2	1
Long and Short Vowel Confusion	1	2	3
Consonant/Sound Confusion		5	
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			2
Syllabification Errors			

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Test Results - Case MRT

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
November 2001	12yrs 0mths	10yrs 3mths	9yrs 10mths	8yrs 7mths
Raw Score		60	14	37
October 2002	12yrs 11mths	10yrs 3mths	10yrs 3mths	8yrs 8mths
Raw Score		60	16	38

Gained Scale Score	0yrs 11mths	0yrs 0mths	0yrs 5mths	0yrs 1mth
Gained Raw Score		0	2	1

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
November 2001	8yrs 5mths	7yrs 6mths	8yrs 7mths
Raw Score	5	14	11
Positive Score	21	16	23
October 2002	8yrs 9mths	7yrs 11mths	9yrs 5mths
Raw Score	3	11	9
Positive Score	23	19	24

Gained Scale Score	0yrs 4mths	0yrs 3mths	0yrs 8mths
Gained Raw Score	2	3	2
Gained Positive Score	2	3	1

Test Results Summary - Case MRT

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 0mths	0
Holborn Reading Test	0yrs 5mths	2
Schonell Spelling	0yrs 1mth	1
Schonell Graded Dictation – Test B	0yrs 4mths	2
Schonell Graded Dictation – Test C	0yrs 3mths	3
Schonell Graded Dictation – Test D	0yrs 8mths	1

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Phonic Inventories – Study Four – Case YA

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	2	1	1
Initial Blends/Clusters		1	
Medial Vowels	2	5	3
Medial Vowel Digraphs		3	1
Ending Consonants	1	2	
Ending Blends/Clusters	4	4	11
Long and Short Vowel Confusion	2		
Consonant/Sound Confusion	1	4	
Reversals/Transposals	2	4	2
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			5

October 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			1
Initial Blends	1		
Medial Vowels	1	1	1
Medial Vowel Digraphs		3	
Ending Consonants		1	3
Ending Blends/Clusters	2	3	
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			2

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Study Four – Case YA

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
October 2001	12yrs 2mths	10yrs 8mths	9yrs	11yrs 8mths
Raw Score		65	42	21
November 2002	13yrs 2mths	10yrs 9mths	9yrs 9mths	12yrs 4mths
Raw Score		66	49	25

Gained Scale Score	1yr	1mth	9mths	8mths
Gained Raw Score		1	7	4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
May 2002	7yrs 7mths	7yrs 11mths	7yrs 7mths
Raw Score	8	11	18
Positive Score	17	19	18
October 2002	8yrs 9mths	8yrs 9mths	8yrs 9mths
Raw Score	3	7	11
Positive Score	23	23	23

Gained Scale Score	1yr 2mths	10mths	1yr 2mths
Gained Raw Score	5	4	7
Gained Positive Score	6	4	5

Test Results Summary - Study Four – Case YA

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1mth	1
Holborn Reading Test	9mths	7
Schonell Spelling	8mths	4
Schonell Graded Dictation – Test B	1yr 2mths	5
Schonell Graded Dictation – Test C	10mths	4
Schonell Graded Dictation – Test D	1yr 2mths	7

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Phonic Inventories – Case YSB

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1		
Initial Blends/Clusters			
Medial Vowels	2	2	3
Medial Vowel Digraphs		1	
Ending Consonants	1	2	2
Ending Blends/Clusters	5	4	4
Long and Short Vowel Confusion		5	
Consonant/Sound Confusion		1	5
Reversals/Transposals	2	3	5
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

October 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends			
Medial Vowels	1		
Medial Vowel Digraphs			
Ending Consonants			
Ending Blends/Clusters		1	
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals	1		
Errors with Prefixes	1		
Errors with Suffixes			
Syllabification Errors			1

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Test Results – Case YSB

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
October 2001	11yrs 11mths	10yrs 2mths	9yrs	9yrs 10mths
Raw Score		59	42	14
November 2002	12yrs 11mths	12yrs 3mths	10yrs 5mths	12yrs 9mths
Raw Score		79	55	27

Gained Scale Score	1yr 0mths	2yrs 1mth	1yr 5mths	2yrs 11mths
Gained Raw Score		20	13	13

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
May 2002	8yrs 4mths	7yrs 8mths	8yrs 6mths
Raw Score	5	7	8
Positive Score	21	18	22
October 2002	10yrs 6mths	10yrs 11mths	10yrs 3mths
Raw Score	0	2	3
Positive Score	27	28	27

Gained Scale Score	2yrs 2mths	3yrs 3mths	1yr 9mths
Gained Raw Score	5	5	5
Gained Positive Score	6	10	5

Test Results Summary - Case YSB

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	2yrs 1mth	20
Holborn Reading Test	1yr 5mths	13
Schonell Spelling	2yrs 11mths	13
Schonell Graded Dictation – Test B	2yrs 2mths	5
Schonell Graded Dictation – Test C	3yrs 3mths	5
Schonell Graded Dictation – Test D	1yr 9mths	5

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Phonic Inventories – Case YSC

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1	1	
Initial Blends/Clusters			
Medial Vowels		3	1
Medial Vowel Digraphs		9	
Ending Consonants		2	2
Ending Blends/Clusters	12	4	7
Long and Short Vowel Confusion	3		
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			2

October 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		1
Medial Vowels			1
Medial Vowel Digraphs		1	
Ending Consonants	2	3	4
Ending Blends/Clusters	3	5	2
Long and Short Vowel Confusion		3	
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			2

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case YSC

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
October 2001	13yrs 8mths	10yrs 7mths	9yrs 2mths	9yrs 10mths
Raw Score		64	44	14
November 2002	14yrs 8mths	11yrs 2mths	10yrs 2mths	10yrs 3mths
Raw Score		72	52	16

Gained Scale Score	1yr 0mths	0yrs 10mths	1yr 0mth	0yrs 5mths
Gained Raw Score		8	8	2

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
May 2002	8yrs 8mths	8yrs 4mths	8yrs 4mths
Raw Score	3	9	13
Positive Score	23	21	21
November 2002	8yrs 6mths	9yrs 5mths	10yrs 3mths
Raw Score	4	5	5
Positive Score	22	25	27

Gained Scale Score	-0yrs 2mths	1yr 1mth	1yr 11mths
Gained Raw Score	-1	4	7
Gained Positive Score	-1	4	6

Test Results Summary - Case YSC

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 10mths	8
Holborn Reading Test	1yr 0mths	8
Schonell Spelling	0yrs 5mths	2
Schonell Graded Dictation – Test B	-0yrs 2mths	-1
Schonell Graded Dictation – Test C	1yr 1mth	4
Schonell Graded Dictation – Test D	1yr 11mths	7

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Phonic Inventories – Case YSD

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1		
Initial Blends/Clusters	5		
Medial Vowels	3	5	6
Medial Vowel Digraphs		4	
Ending Consonants	6	3	1
Ending Blends/Clusters	8	7	5
Long and Short Vowel Confusion		3	2
Consonant/Sound Confusion	5	6	8
Reversals/Transposals		3	
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

October 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1		
Initial Blends	1		
Medial Vowels		1	3
Medial Vowel Digraphs			
Ending Consonants			
Ending Blends/Clusters	2	1	
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals	1	6	2
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			5

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case YSD

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
October 2001	13yrs 7mths	9yrs 9mths	8yrs 1mth	9yrs 2mths
Raw Score		53	33	11
October 2002	14yrs 7mths	9yrs 11mths	8yrs 9mths	9yrs 2mths
Raw Score		55	39	11

Gained Scale Score	1yr	2mths	8mths	0
Gained Raw Score		2	6	0

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
May 2002	7yrs 4mths	7yrs 2mths	7yrs 3mths
Raw Score	9	15	21
Positive Score	16	15	16
October 2002	9yrs 5mths	8yrs 9mths	10yrs
Raw Score	2	7	7
Positive Score	25	23	26

Gained Scale Score	2yrs 1mth	1yr 7mths	2yrs 9mths
Gained Raw Score	7	8	14
Gained Positive Score	9	8	11

Test Results Summary - Case YSD

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 2mths	2
Holborn Reading Test	0yrs 8mths	6
Schonell Spelling	0yrs 0mths	0
Schonell Graded Dictation – Test B	2yrs 1mth	7
Schonell Graded Dictation – Test C	1yr 7mths	8
Schonell Graded Dictation – Test D	2yrs 9mths	14

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Phonic Inventories – Case YSE

February 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	3		
Medial Vowels			
Medial Vowel Digraphs			
Ending Consonants	1		
Ending Blends/Clusters	23		
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals	5		
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

November 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	2		
Medial Vowels	1		
Medial Vowel Digraphs			
Ending Consonants			
Ending Blends/Clusters	17		
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals	3		
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

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Test Results – Case YSE

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
February 2002	8yrs 2mths	6yrs 10mths	7yrs 7mths	6yrs 5mths
Raw Score		12	4	15
November 2002	9yrs 0mths	7yrs 7mths	8yrs 3mths	7yrs 1mth
Raw Score		25	7	21

Gained Scale Score	0yrs 10mths	0yrs 9mths	0yrs 8mths	0yrs 8mths
Gained Raw Score		13	3	6

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
February 2002			
Raw Score			
Positive Score			
November 2002			
Raw Score			
Positive Score			

Gained Scale Score			
Gained Raw Score			
Gained Positive Score			

Test Results Summary - Case YSE

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 9mths	13
Holborn Reading Test	0yrs 8mths	6
Schonell Spelling	0yrs 8mths	3
Schonell Graded Dictation – Test B		
Schonell Graded Dictation – Test C		
Schonell Graded Dictation – Test D		

Appendix 1d: Sample Group Four

2002 pilot study

Cedarwood Remedial School

Fulltime Remedial education (n=8)

Participant Code	Intervention Type
AGA	Treatment
AGB	Treatment
AGC	Treatment
AGD	Control
AGE	Control
AGF	Control
GRA	Treatment
GRB	Treatment

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Phonic Inventories – Case AGA

April 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		2	
Initial Blends/Clusters	3	4	
Medial Vowels	2	5	
Medial Vowel Digraphs		12	
Ending Consonants	2	9	
Ending Blends/Clusters	5	10	
Long and Short Vowel Confusion	1	1	
Consonant/Sound Confusion	7	9	
Reversals/Transposals		1	
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

September 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends		2	
Medial Vowels	2	6	
Medial Vowel Digraphs		6	
Ending Consonants	2	8	
Ending Blends/Clusters	4	7	
Long and Short Vowel Confusion		1	
Consonant/Sound Confusion	2	7	
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case AGA

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
April 2002		7yrs 3mths	7yrs 7mths	6yrs 7mths
Raw Score		19	4	17
September 2002		7yrs 3mths	7yrs 10mths	8yrs 2mths
Raw Score		19	5	32

Gained Scale Score		0	3mths	1yr 7mths
Gained Raw Score		0	1	15

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
April 2002	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	20	34	28
Positive Score	5	0	10
September 2002	6yrs 11mths	No Scaled Score	No Scaled Score
Raw Score	11	20	27
Positive Score	14	11	11

Gained Scale Score	No Scaled Score	No Scaled Score	No Scaled Score
Gained Raw Score	9	14	1
Gained Positive Score	9	11	1

Test Results Summary - Case AGA

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 0mths	0
Holborn Reading Test	0yrs 3mths	1
Schonell Spelling	1yr 7mths	15
Schonell Graded Dictation – Test B	No Scaled Score	9
Schonell Graded Dictation – Test C	No Scaled Score	14
Schonell Graded Dictation – Test D	No Scaled Score	1

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Phonic Inventories – Case AGB

April 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			1
Initial Blends/Clusters	1	3	5
Medial Vowels	2	5	3
Medial Vowel Digraphs		7	3
Ending Consonants		1	1
Ending Blends/Clusters	3	5	18
Long and Short Vowel Confusion		2	
Consonant/Sound Confusion		2	1
Reversals/Transposals		1	
Errors with Prefixes			
Errors with Suffixes			11
Syllabification Errors			

September 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends		1	3
Medial Vowels	1	2	1
Medial Vowel Digraphs		3	1
Ending Consonants		4	1
Ending Blends/Clusters		4	17
Long and Short Vowel Confusion		2	
Consonant/Sound Confusion		7	6
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			8
Syllabification Errors			

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case AGB

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
April 2002		8yrs 7mths	8yrs 11mths	8yrs 3mths
Raw Score		38	10	33
September 2002		8yrs 11mths	9yrs 2mths	8yrs 7mths
Raw Score		42	11	37

Gained Scale Score		0yrs 4mths	0yrs 3mths	0yrs 4mths
Gained Raw Score		4	1	5

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
April 2002	6yrs 9mths	No Scaled Score	7yrs 2mths
Raw Score	11	20	20
Positive Score	14	10	16.5
September 2002	7yrs 6mths	7yrs 6mths	7yrs 7mths
Raw Score	7	12	17
Positive Score	18	18	18.5

Gained Scale Score	0yrs 9mths	No Scaled Score	0yrs 5mths
Gained Raw Score	4	8	3
Gained Positive Score	4	8	2

Test Results Summary - Case AGB

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 4mths	4
Holborn Reading Test	0yrs 3mths	1
Schonell Spelling	0yrs 4mths	5
Schonell Graded Dictation – Test B	0yrs 9mths	4
Schonell Graded Dictation – Test C	No Scaled Score	8
Schonell Graded Dictation – Test D	0yrs 5mths	3

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Phonic Inventories – Case AGC

April 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters			1
Medial Vowels	8	2	
Medial Vowel Digraphs		4	1
Ending Consonants		4	
Ending Blends/Clusters		3	12
Long and Short Vowel Confusion		3	1
Consonant/Sound Confusion	1	1	4
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			10
Syllabification Errors			

September 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends			1
Medial Vowels	6	4	1
Medial Vowel Digraphs		5	
Ending Consonants		4	
Ending Blends/Clusters		3	9
Long and Short Vowel Confusion		3	
Consonant/Sound Confusion	1	3	1
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			3
Syllabification Errors			

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case AGC

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
April 2002		8yrs 2mths	8yrs 8mths	8yrs 2mths
Raw Score		32	8	32
September 2002		9yrs 8mths	9yrs 2mths	9yrs 1mth
Raw Score		45	11	41

Gained Scale Score		1yr 6mths	0yrs 6mths	0yrs 11mths
Gained Raw Score		13	2	9

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
April 2002	7yrs 6mths	No Scaled Score	+6yrs 9mths
Raw Score	8	21	25
Positive Score	17	9	13
September 2002	7yrs 11mths	8yrs 6mths	7yrs 10mths
Raw Score	6	8	17
Positive Score	19	22	18.5

Gained Scale Score	0yrs 5mths	No Scaled Score	1yr 1mth
Gained Raw Score	2	13	8
Gained Positive Score	2	13	5.5

Test Results Summary - Case AGC

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 6mths	13
Holborn Reading Test	0yrs 6mths	2
Schonell Spelling	0yrs 11mths	9
Schonell Graded Dictation – Test B	0yrs 5mths	2
Schonell Graded Dictation – Test C	No Scaled Score	13
Schonell Graded Dictation – Test D	1yr 1mth	8

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Phonic Inventories – Case AGD

April 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters		1	
Medial Vowels	7	5	
Medial Vowel Digraphs		9	
Ending Consonants	6	2	
Ending Blends/Clusters	1	7	
Long and Short Vowel Confusion	2	3	
Consonant/Sound Confusion	3	3	
Reversals/Transposals		1	
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

September 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends		2	
Medial Vowels	5	3	
Medial Vowel Digraphs		5	
Ending Consonants	4	3	
Ending Blends/Clusters	2	4	
Long and Short Vowel Confusion		2	
Consonant/Sound Confusion	1	3	
Reversals/Transposals	3	2	
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

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Test Results – Case AGD

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
April 2002		7yrs 5mths	7yrs 10mths	7yrs 3mths
Raw Score		23	5	23
September 2002		7yrs 7mths	8yrs 6mths	7yrs 4mths
Raw Score		26	8	24

Gained Scale Score		0yrs 2mths	0yrs 8mths	0yrs 1mth
Gained Raw Score		3	3	1

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
April 2002	No Scaled Score	+ 6yrs 9mths	No Scaled Score
Raw Score	13	25	27
Positive Score	12	13	11
September 2002	No Scaled Score	7yrs 3mths	No Scaled Score
Raw Score	14	22	26
Positive Score	11	15.5	12

Gained Scale Score	No Scaled Score	0yrs 6mths	No Scaled Score
Gained Raw Score	1	3	1
Gained Positive Score	1	2.5	1

Test Results Summary - Case AGD

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 2mths	3
Holborn Reading Test	0yrs 8mths	3
Schonell Spelling	0yrs 1mth	1
Schonell Graded Dictation – Test B	No Scaled Score	1
Schonell Graded Dictation – Test C	0yrs 6mths	3
Schonell Graded Dictation – Test D	No Scaled Score	1

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Phonic Inventories – Case AGE

April 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	1	4	3
Medial Vowels	5	6	1
Medial Vowel Digraphs		4	
Ending Consonants	4	12	2
Ending Blends/Clusters		3	7
Long and Short Vowel Confusion			
Consonant/Sound Confusion		2	2
Reversals/Transposals	2	2	
Errors with Prefixes			
Errors with Suffixes			13
Syllabification Errors			

September 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends		4	2
Medial Vowels	4	5	2
Medial Vowel Digraphs		5	
Ending Consonants		6	4
Ending Blends/Clusters		5	10
Long and Short Vowel Confusion		1	
Consonant/Sound Confusion		1	1
Reversals/Transposals			1
Errors with Prefixes			
Errors with Suffixes			11
Syllabification Errors			

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case AGE

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
April 2002		8yrs 5mths	8yrs 11mths	8yrs 2mths
Raw Score		35	10	32
September 2002		8yrs 5mths	9yrs 7mths	8yrs 3mths
Raw Score		35	13	33

Gained Scale Score		0yrs 0mths	0yrs 8mths	0yrs 1mth
Gained Raw Score		0	3	1

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
April 2002	6yrs 11mths	No Scaled Score	6yrs 11mths
Raw Score	10	21	23
Positive Score	15	9	15
September 2002	6yrs 11mths	No Scaled Score	7yrs 1mth
Raw Score	10	20	21
Positive Score	15	10	16

Gained Scale Score	None	No Scaled Score	2mths
Gained Raw Score	None	1	2
Gained Positive Score	None	1	1

Test Results Summary - Case AGE

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 0mths	0
Holborn Reading Test	0yrs 8mths	3
Schonell Spelling	0yrs 1mth	1
Schonell Graded Dictation – Test B	0yrs 0mths	0
Schonell Graded Dictation – Test C	No Scaled Score	1
Schonell Graded Dictation – Test D	0yrs 2mths	1

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Phonic Inventories – Case AGF

April 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends/Clusters			1
Medial Vowels	7	6	5
Medial Vowel Digraphs		5	2
Ending Consonants	5	5	1
Ending Blends/Clusters		8	12
Long and Short Vowel Confusion		2	
Consonant/Sound Confusion		1	
Reversals/Transposals	1	1	
Errors with Prefixes			
Errors with Suffixes			18
Syllabification Errors			

September 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends		2	2
Medial Vowels	5	9	4
Medial Vowel Digraphs		4	
Ending Consonants	2	6	1
Ending Blends/Clusters		4	11
Long and Short Vowel Confusion		1	
Consonant/Sound Confusion		3	1
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			5
Syllabification Errors			

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case AGF

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
April 2002		8yrs	8yrs 11mths	7yrs 5mths
Raw Score		30	10	25
September 2002		8yrs	8yrs 11mths	8yrs
Raw Score		30	10	30

Gained Scale Score		0yrs 0mths	0yrs 0mths	0yrs 7mths
Gained Raw Score		0	0	5

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
April 2002	7yrs 2mths	No Scaled Score	7yrs 3mths
Raw Score	10	18	22
Positive Score	15	12	15.5
September 2002	8yrs 1mths	No Scaled Score	7yrs 9mths
Raw Score	6	18	18
Positive Score	20	12	18

Gained Scale Score	0yrs 1mth	No Scaled Score	0yrs 6mths
Gained Raw Score	2	0	4
Gained Positive Score	5	0	2.5

Test Results Summary - Case AGF

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 0mths	0
Holborn Reading Test	0yrs 0mths	0
Schonell Spelling	0yrs 7mths	5
Schonell Graded Dictation – Test B	0yrs 1mth	2
Schonell Graded Dictation – Test C	No Scaled Score	0
Schonell Graded Dictation – Test D	0yrs 6mths	4

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Phonic Inventories – Child GRA

2002-02-11

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	3		
Initial Blends/Clusters		3	
Medial Vowels		12	
Medial Vowel Digraphs		6	
Ending Consonants	5		
Ending Blends/Clusters	6	15	
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

2002-10-17

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends			
Medial Vowels	2	2	
Medial Vowel Digraphs		11	
Ending Consonants			
Ending Blends	13		12
Long and Short Vowel Confusion		6	
Consonant/Sound Confusion			3
Reversals/Transposals			
Errors with Prefixes			4
Errors with Suffixes			13
Syllabification Errors		3	

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Child GRA

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
February 2002	13yrs 1mth	7yrs 10mths	7yrs 10mths	7yrs 6mths
Raw Score		29	5	26
October 2002	13yrs 9mths	10yrs 1mth	9yrs 7mths	7yrs 9mths
Raw Score		57	13	29

Gained Scale Score		2yrs 3mths	1yr 9mths	0yrs 3mths
Gained Raw Score		28	8	3

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
February 2002	6yrs 6mths	7yrs 0mths	
Raw Score	13	15	
Positive Score	12	15	
October 2002	8yrs 1mth	7hrs 1mth	7yrs 1mth
Raw Score	21	16	16
Positive Score	5	14	21

Gained Scale Score	1yr 7mths	0yrs 1mth	
Gained Raw Score	8	1	
Gained Positive Score	7	1	

Test Results Summary - Case GRA

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	2yrs 3mths	28
Holborn Reading Test	1yr 9mths	8
Schonell Spelling	0yrs 3mths	3
Schonell Graded Dictation – Test B	1yr 7mths	8
Schonell Graded Dictation – Test C	0yrs 1mth	1
Schonell Graded Dictation – Test D		

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
Techniques in the Remedial Environment

Phonic Inventories – Child GRB

2002-03-04

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1		
Initial Blends/Clusters			
Medial Vowels	2	1	
Medial Vowel Digraphs			
Ending Consonants			
Ending Blends/Clusters	8	15	6
Long and Short Vowel Confusion		5	1
Consonant/Sound Confusion			
Reversals/Transposals			4
Errors with Prefixes			
Errors with Suffixes			5
Syllabification Errors			

2002-10-17

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels		7	
Medial Vowel Digraphs			
Ending Consonants			
Ending Blends/Clusters	5	1	
Long and Short Vowel Confusion		2	1
Consonant/Sound Confusion			2
Reversals/Transposals		2	3
Errors with Prefixes			1
Errors with Suffixes		6	6
Syllabification Errors			

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Child GRB

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
February 2002	13yrs 1mth	7 yrs 2mths	7 yrs 10mths	7yrs 11mths
Raw Score		19	5	21
October 2002	13yrs 9mths	11yrs 8mths	10yrs 9mths	9yrs 1mth
Raw Score		74	18	41

Gained Scale Score		4yrs 6mths	2yrs 11mths	1yr 2mths
Gained Raw Score		55	13	20

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
February 2002	7yrs 6mths	7yrs 2mths	7yrs 2mths
Raw Score	17	15	15
Positive Score	8	15	23
October 2002	9yrs	7yrs 11mths	10yrs 5mths
Raw Score	24	19	27
Positive Score	2	11	5

Gained Scale Score	1yr 6mths	0yrs 9mths	3yrs 3mths
Gained Raw Score	7	4	12
Gained Positive Score	6	4	17

Test Results Summary - Case GRB

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	4yrs 6mths	55
Holborn Reading Test	2yrs 11mths	13
Schonell Spelling	1yr 2mths	20
Schonell Graded Dictation – Test B	1yr 6mths	7
Schonell Graded Dictation – Test C	0yrs 9mths	4
Schonell Graded Dictation – Test D	3yrs 3mths	12

Appendix 1e: Sample Group Five

2002 pilot study

Japari Remedial School

Children with below average IQ (n=4)

Participant Code	Intervention Type
DAA	Treatment
DAB	Treatment
DAC	Treatment
DAD	Treatment

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
Techniques in the Remedial Environment

Phonic Inventories – Case DAA

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	14		
Medial Vowels	22		
Medial Vowel Digraphs			
Ending Consonants	2		
Ending Blends/Clusters	17		
Long and Short Vowel Confusion	1		
Consonant/Sound Confusion	7		
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

October 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1		
Initial Blends	13		
Medial Vowels	14		
Medial Vowel Digraphs			
Ending Consonants			
Ending Blends/Clusters	17		
Long and Short Vowel Confusion			
Consonant/Sound Confusion	6		
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

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Test Results – Case DAA

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
May 2002	11yrs 7mths	6yrs 8mths	7yrs 2mths	6yrs 3mths
Raw Score		9	2	13
October 2002	12yrs	7yrs	7yrs 5mths	6yrs 7mths
Raw Score		15	3	17

Gained Scale Score	0yrs 5mths	0yrs 4mths	0yrs 3mths	0yrs 4mths
Gained Raw Score		6	1	4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
May 2002	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	22	28	34
Positive Score	3	0	0
October 2002	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	22	33	35
Positive Score	3	0	0

Gained Scale Score	No Scaled Score	No Scaled Score	No Scaled Score
Gained Raw Score	None	5	1
Gained Positive Score	0	5	0

Test Results Summary - Case DAA

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 4mths	6
Holborn Reading Test	0yrs 3mths	1
Schonell Spelling	0yrs 4mths	4
Schonell Graded Dictation – Test B	No Scaled Score	0
Schonell Graded Dictation – Test C	No Scaled Score	5
Schonell Graded Dictation – Test D	No Scaled Score	1

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Phonic Inventories – Case DAB

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends/Clusters		1	7
Medial Vowels	7	7	1
Medial Vowel Digraphs		11	
Ending Consonants	1		4
Ending Blends/Clusters	12	5	24
Long and Short Vowel Confusion		5	5
Consonant/Sound Confusion	2	3	
Reversals/Transposals			
Errors with Prefixes			5
Errors with Suffixes			7
Syllabification Errors			

October 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	2	2	4
Medial Vowels	4	3	
Medial Vowel Digraphs		8	
Ending Consonants	3	2	1
Ending Blends/Clusters	11	7	30
Long and Short Vowel Confusion	1	3	
Consonant/Sound Confusion	1		1
Reversals/Transposals			
Errors with Prefixes			4
Errors with Suffixes			6
Syllabification Errors			

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Test Results – Case DAB

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
May 2002	12yrs	7yrs 7mths	8yrs	7yrs 8mths
Raw Score		26	6	28
October 2002	12yrs 5mths	8yrs	8yrs 3mths	8yrs 6mths
Raw Score		30	7	36

Gained Scale Score	0yrs 5mths	0yrs 3mths	0yrs 3mths	0yrs 10mths
Gained Raw Score		4	1	8

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
May 2002	7yrs 5mths	No Scaled Score	7yrs 0mths
Raw Score	7	19	22
Positive Score	18	11	15
October 2002	8yrs 0mths	7yrs 0mths	8yrs 0mths
Raw Score	6	15	14
Positive Score	19	15	20

Gained Scale Score	0yrs 7mths	No Scaled Score	1yr 0mths
Gained Raw Score	1	4	8
Gained Positive Score	1	4	1

Test Results Summary – Case DAB

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 3mths	4
Holborn Reading Test	0yrs 3mths	1
Schonell Spelling	0yrs 10mths	8
Schonell Graded Dictation – Test B	0yrs 7mths	1
Schonell Graded Dictation – Test C	No Scaled Score	4
Schonell Graded Dictation – Test D	1yr 0mths	8

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Phonic Inventories – Case DAC

May 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1		
Initial Blends/Clusters	8		
Medial Vowels	20		
Medial Vowel Digraphs			
Ending Consonants	4		
Ending Blends/Clusters	20		
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

October 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	6		
Medial Vowels	15		
Medial Vowel Digraphs			
Ending Consonants	1		
Ending Blends/Clusters	18		
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

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Test Results – Case DAC

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
May 2001	10yrs 10mths	7yrs 4mths	7yrs 7mths	6yrs 6mths
Raw Score		20	4	15
July 2002	12yrs	7yrs 7mths	7yrs 10mths	7yrs 5mths
Raw Score		26	5	25
November 2002	12yrs 4mths	8yrs 1mth	8yrs 1mth	7yrs 5mths
Raw Score		6	6	25

Gained Scale Score	1yr 6mths	0yrs 9mths	0yrs 6mths	0yrs 11mths
Gained Raw Score		14	2	10

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
May 2001			
Raw Score			
Positive Score			
July 2002	7yrs 7mths	No Scaled Score	
Raw Score	8	21	
Positive Score	17	9	
November 2002	7yrs 0mths		
Raw Score	10		
Positive Score	15		

Gained Scale Score	-0yrs 7mths		
Gained Raw Score	-2		
Gained Positive Score	-2		

Test Results Summary – Case DAC

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 9mths	14
Holborn Reading Test	0yrs 6mths	2

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Schonell Spelling	0yrs 11mths	10
Schonell Graded Dictation – Test B	-0yrs 7mths	-2
Schonell Graded Dictation – Test C		
Schonell Graded Dictation – Test D		

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Phonic Inventories – Case DAD

February 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends/Clusters	1	1	
Medial Vowels	2	4	
Medial Vowel Digraphs		9	
Ending Consonants		1	
Ending Blends/Clusters	11	8	
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

December 2002

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		2	
Initial Blends	1		
Medial Vowels	3	5	
Medial Vowel Digraphs		6	
Ending Consonants		1	
Ending Blends/Clusters	5	5	
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

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Test Results – Case DAD

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
February 2002	10yrs 1mths	8yrs 1mth	8yrs 8mths	8yrs 3mths
Raw Score		31	9	33
December 2002	10yrs 10mths	8yrs 4mths	8yrs 11mths	8yrs 3mths
Raw Score		34	10	33

Gained Scale Score	0yrs 9mths	0yrs 3mths	0yrs 3mths	0yrs 0mths
Gained Raw Score		3	1	0

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
February 2002	7yrs 6mths	5yrs 9mths	7yrs
Raw Score	8	24	23
Positive Score	17	6	15
December 2002	7yrs 6mths	8yrs	8yrs 9mths
Raw Score	7	10	10
Positive Score	18	20	24

Gained Scale Score	0yrs 0mths	2yrs 3mths	1yrs 9mths
Gained Raw Score	1	14	13
Gained Positive Score	1	14	9

Test Results Summary – Case DAD

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 3mths	3
Holborn Reading Test	0yrs 3mths	1
Schonell Spelling	0yrs 0mths	0
Schonell Graded Dictation – Test B	0yrs 0mths	1
Schonell Graded Dictation – Test C	2yrs 3mths	14
Schonell Graded Dictation – Test D	1yrs 9mths	13

Appendix 1f: Sample Group Six

2003 pilot study

Japari Remedial School

Fulltime Remedial education (n=11)

Participant Code	Intervention Type
KEA1	Treatment
KEB1	Treatment
KEC1	Treatment
KED1	Control
KEE1	Control
KEF1	Control
LBA1	Treatment
LBB1	Treatment
LBC1	Treatment
LBD1	Control
LBE1	Control

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Phonic Inventories – Case KEA1

April 2003

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		2	
Initial Blends/Clusters	4	1	
Medial Vowels	4	13	8
Medial Vowel Digraphs		16	
Ending Consonants		4	
Ending Blends/Clusters	18	10	13
Long and Short Vowel Confusion	2	10	
Consonant/Sound Confusion			
Reversals/Transposals		2	
Errors with Prefixes			1
Errors with Suffixes			13
Syllabification Errors			9

November 2003

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels	2	5	
Medial Vowel Digraphs		8	
Ending Consonants		1	
Ending Blends/Clusters	2	5	5
Long and Short Vowel Confusion		24	
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			8
Syllabification Errors			2

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Test Results – Case KEA1

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
April 2003	10yrs 0mths	7yrs 5mths	8yrs 3mths	7yrs 0mths
Raw Score		24	7	20
November 2003	10yrs 8mths	8yrs 8mths	9yrs 2mths	8yrs 0mths
Raw Score		37	11	30

Gained Scale Score		1yr 3mths	0yrs 11mths	0yrs 12mths
Gained Raw Score		13	4	10

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
April 2003	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	16	26	30
Positive Score	9	No Scaled Score	No Scaled Score
November 2003	8yrs 4mths	7yrs 0mths	8yrs 1mth
Raw Score	5	16	15
Positive Score	21	14	20

Gained Scale Score	No Scaled Score	No Scaled Score	No Scaled Score
Gained Raw Score	11	10	15
Gained Positive Score	12	14	20

Test Results Summary - Study Seven – Case KEA1

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 3mths	13
Holborn Reading Test	0yrs 11mths	4
Schonell Spelling	0yrs 12mths	10
Schonell Graded Dictation – Test B	No Scaled Score	11
Schonell Graded Dictation – Test C	No Scaled Score	10
Schonell Graded Dictation – Test D	No Scaled Score	15

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Phonic Inventories – Case KEB1

April 2003

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	1	3	
Medial Vowels	3	6	
Medial Vowel Digraphs		13	2
Ending Consonants	1	2	4
Ending Blends/Clusters	6	10	
Long and Short Vowel Confusion		7	2
Consonant/Sound Confusion			
Reversals/Transposals		2	
Errors with Prefixes			1
Errors with Suffixes			14
Syllabification Errors			5

November 2003

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1	1	
Initial Blends	1	6	4
Medial Vowels		7	
Medial Vowel Digraphs			2
Ending Consonants	3	7	2
Ending Blends/Clusters		6	
Long and Short Vowel Confusion		1	
Consonant/Sound Confusion		2	
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			6
Syllabification Errors			

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Test Results – Case KEB1

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
April 2003	11yrs 0mths	8yrs 1mth	8yrs 11mths	8yrs 0mths
Raw Score		31	10	30
November 2003	11yrs 8mths	8yrs 5mths	9yrs 2mths	8yrs 4mths
Raw Score		34	11	33

Gained Scale Score		0yrs 4mths	0yrs 3mths	0yrs 4mths
Gained Raw Score		3	1	3

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
April 2003	8yrs 7mths	No Scaled Score	7yrs 1mth
Raw Score	4	19	23
Positive Score	22	11	15
November 2003	8yrs 9mths	7yrs 6mths	8yrs 1mth
Raw Score	3	12	15
Positive Score	23	18	20

Gained Scale Score	0yrs 2mths	No Scaled Score	0yrs 12mths
Gained Raw Score	1	7	8
Gained Positive Score	1	7	5

Test Results Summary - Study Seven – Case KEB1

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 4mths	3
Holborn Reading Test	0yrs 3mths	1
Schonell Spelling	0yrs 4mths	3
Schonell Graded Dictation – Test B	0yrs 2mths	1
Schonell Graded Dictation – Test C	No Scaled Score	7
Schonell Graded Dictation – Test D	0yrs 12mths	8

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Phonic Inventories – Case KEC1

April 2003

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1	1	
Initial Blends/Clusters	3	1	
Medial Vowels		14	
Medial Vowel Digraphs	1	10	4
Ending Consonants		2	
Ending Blends/Clusters	9	10	10
Long and Short Vowel Confusion	1	11	2
Consonant/Sound Confusion	1	1	
Reversals/Transposals			
Errors with Prefixes			3
Errors with Suffixes			7
Syllabification Errors			8

November 2003

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1		
Initial Blends	1		
Medial Vowels	2	3	
Medial Vowel Digraphs	1	5	
Ending Consonants		1	
Ending Blends/Clusters	5	5	1
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			2
Errors with Suffixes			6
Syllabification Errors			7

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Test Results – Case KEC1

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
April 2003	10yrs 6mths	8yrs 1mth	8yrs 3mths	7yrs 0mths
Raw Score		31	7	20
November 2003	11yrs 2mths	9yrs 0mths	9yrs 5mths	7yrs 7mths
Raw Score		38	12	26

Gained Scale Score		0yrs 11mths	1yr 2mths	0yrs 7mths
Gained Raw Score		7	5	6

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
April 2003	8yrs 0mths	No Scaled Score	No Scaled Score
Raw Score	7	20	27
Positive Score	18	10	No Scaled Score
November 2003	8yrs 6mths	8yrs 6mths	8yrs 4mths
Raw Score	4	10	13
Positive Score	22	22	21

Gained Scale Score	0yrs 6mths	No Scaled Score	No Scaled Score
Gained Raw Score	3	10	14
Gained Positive Score	4	10	21

Test Results Summary - Case KEC1

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 11mths	7
Holborn Reading Test	1yr 2mths	5
Schonell Spelling	0yrs 7mths	6
Schonell Graded Dictation – Test B	0yrs 6mths	3
Schonell Graded Dictation – Test C	No Scaled Score	10
Schonell Graded Dictation – Test D	No Scaled Score	14

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Phonic Inventories – Case KED1

April 2003

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1		
Initial Blends/Clusters	1		
Medial Vowels		10	
Medial Vowel Digraphs	1	10	5
Ending Consonants			
Ending Blends/Clusters	11	9	5
Long and Short Vowel Confusion	1	4	
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			2
Errors with Suffixes			12
Syllabification Errors			7

November 2003

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1	4	
Medial Vowels			
Medial Vowel Digraphs			
Ending Consonants		1	
Ending Blends/Clusters	2	1	
Long and Short Vowel Confusion			
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			3
Syllabification Errors			

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Test Results – Case KED1

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
April 2003	10yrs 5mths	9yrs 0mths	9yrs 0mths	7yrs 10mths
Raw Score		40	10	28
November 2003	11yrs 1mth	9yrs 5mths	9yrs 5mths	8yrs 8mths
Raw Score		44	12	36

Gained Scale Score		0yrs 5mths	0yrs 5mths	0yrs 10mths
Gained Raw Score		4	2	8

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
April 2003	8yrs 4mths	7yrs 0mths	7yrs 7mths
Raw Score	5	16	19
Positive Score	21	14	17
November 2003	8yrs 9mths	7yrs 11mths	8yrs 4mths
Raw Score	3	11	13
Positive Score	23	19	21

Gained Scale Score	0yrs 5mths	0yrs 11mths	0yrs 9mths
Gained Raw Score	2	5	6
Gained Positive Score	2	5	4

Test Results Summary - Case KED1

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 5mths	4
Holborn Reading Test	0yrs 5mths	2
Schonell Spelling	0yrs 10mths	8
Schonell Graded Dictation – Test B	0yrs 5mths	2
Schonell Graded Dictation – Test C	0yrs 11mths	5
Schonell Graded Dictation – Test D	0yrs 9mths	6

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Phonic Inventories – Case KEE1

April 2003

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1		4
Initial Blends/Clusters	1		4
Medial Vowels	7	12	2
Medial Vowel Digraphs	1	14	4
Ending Consonants		3	
Ending Blends/Clusters	19	8	11
Long and Short Vowel Confusion	1	9	1
Consonant/Sound Confusion	3	2	2
Reversals/Transposals			
Errors with Prefixes			1
Errors with Suffixes			14
Syllabification Errors			6

November 2003

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	4	1	
Medial Vowels	5	9	4
Medial Vowel Digraphs	1	12	6
Ending Consonants		3	
Ending Blends/Clusters	14	8	15
Long and Short Vowel Confusion	1	4	2
Consonant/Sound Confusion	1	1	
Reversals/Transposals			
Errors with Prefixes			3
Errors with Suffixes			9
Syllabification Errors			3

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Test Results – Case KEE1

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
April 2003	10yrs 6mths	7yrs 7mths	8yrs 6mths	7yrs 3mths
Raw Score		26	8	23
November 2003	11yrs 2mths	7yrs 9mths	8yrs 6mths	7yrs 7mths
Raw Score		28	8	26

Gained Scale Score		0yrs 2mths	0yrs 0mths	0yrs 4mths
Gained Raw Score		2	0	3

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
April 2003	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	16	20	29
Positive Score	9	10	No Scaled Score
November 2003	6yrs 10mths	No Scaled Score	No Scaled Score
Raw Score	12	23	29
Positive Score	13	7	No Scaled Score

Gained Scale Score	No Scaled Score	No Scaled Score	No Scaled Score
Gained Raw Score	4	-3	0
Gained Positive Score	4	-3	0

Test Results Summary - Case KEE1

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 2mths	2
Holborn Reading Test	0yrs 0mths	0
Schonell Spelling	0yrs 4mths	3
Schonell Graded Dictation – Test B	No Scaled Score	4
Schonell Graded Dictation – Test C	No Scaled Score	-3
Schonell Graded Dictation – Test D	No Scaled Score	0

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Phonic Inventories – Case KEF1

April 2003

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1		1
Initial Blends/Clusters	4	1	
Medial Vowels	1	12	1
Medial Vowel Digraphs	1	16	5
Ending Consonants	1	4	
Ending Blends/Clusters	7	10	14
Long and Short Vowel Confusion	1	7	4
Consonant/Sound Confusion		1	
Reversals/Transposals			2
Errors with Prefixes			3
Errors with Suffixes			22
Syllabification Errors			6

November 2003

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1	1	
Initial Blends	4	2	
Medial Vowels		11	2
Medial Vowel Digraphs	1	10	
Ending Consonants		2	
Ending Blends/Clusters	6	8	
Long and Short Vowel Confusion	2	4	1
Consonant/Sound Confusion		1	
Reversals/Transposals		1	
Errors with Prefixes			
Errors with Suffixes			6
Syllabification Errors			4

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case KEF1

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
April 2003	10yrs 4mths	7yrs 0mths	8yrs 0mths	7yrs 0mths
Raw Score		20	6	20
November 2003	11yrs 0mths	7yrs 7mths	8yrs 6mths	7yrs 7mths
Raw Score		26	8	24

Gained Scale Score		0yrs 7mths	0yrs 6mths	0yrs 5mths
Gained Raw Score		6	2	4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
April 2003	6yrs 10mths	6yrs 6mths	7yrs 0mths
Raw Score	12	19	24
Positive Score	13	11	14
November 2003	7yrs 4mths	6yrs 6mths	7yrs 7mths
Raw Score	10	19	19
Positive Score	15	11	17

Gained Scale Score	0yrs 6mths	0yrs 0mths	0yrs 7mths
Gained Raw Score	2	0	5
Gained Positive Score	2	0	3

Test Results Summary - Case KEF1

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 7mths	6
Holborn Reading Test	0yrs 6mths	2
Schonell Spelling	0yrs 5mths	4
Schonell Graded Dictation – Test B	0yrs 6mths	2
Schonell Graded Dictation – Test C	0yrs 0mths	0
Schonell Graded Dictation – Test D	0yrs 7mths	5

Phonic Inventories – LBA1

There are no detailed pre- and post-test Phonic Inventory scores available for participant LBA1.

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Test Results – Case LBA1

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - Begin	12yrs 0mths	8yrs 2mths	8yrs 6mths	7yrs 7mths
Raw Score		32	8	26
Date - End	12yrs 6mths	9yrs 5mths	9yrs 10mths	8yrs 5mths
Raw Score		44	14	34

Gained Scale Score		1yr 3mths	1yr 4mths	0yrs 10mths
Gained Raw Score		12	6	8

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - Begin	8yrs 1mth	6yrs 6mths	7yrs 6mths
Raw Score	6	19	21
Positive Score	20	11	16
Date - End	9yrs 5mths	8yrs 6mths	8yrs 5mths
Raw Score	2	8	13
Positive Score	25	22	21

Gained Scale Score	1yr 4mths	2yrs 0mths	0yrs 11mths
Gained Raw Score	4	11	8
Gained Positive Score	5	11	5

Test Results Summary - Study Seven – Case LBA1

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 3mths	12
Holborn Reading Test	1yr 4mths	6
Schonell Spelling	0yrs 10mths	8
Schonell Graded Dictation – Test B	1yr 4mths	4
Schonell Graded Dictation – Test C	2yrs 0mths	11
Schonell Graded Dictation – Test D	0yrs 11mths	8

Phonic Inventories – Case LBB1

There are no detailed pre- and post-test Phonic Inventory scores available for participant LBB1.

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Test Results – Case LBB1

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - Begin	12yrs 0mths	8yrs 8mths	7yrs 10mths	8yrs 5mths
Raw Score		37	5	34
Date - End	12yrs 6mths	9yrs 8mths	10yrs 6mths	7yrs 8mths
Raw Score		47	17	27

Gained Scale Score		1yr 0mths	2yrs 8mths	-1yr 3mths
Gained Raw Score		10	12	-7

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - Begin	8yrs 0mths	7yrs 6mths	7yrs 5mths
Raw Score	6	13	21
Positive Score	19	17	16
Date - End	8yrs 8mths	8yrs 10mths	7yrs 11mths
Raw Score	3	6	15
Positive Score	23	24	19

Gained Scale Score	0yrs 8mths	1yr 4mths	0yrs 6mths
Gained Raw Score	3	7	6
Gained Positive Score	4	7	3

Test Results Summary - Case LBB1

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 0mths	10
Holborn Reading Test	2yrs 8mths	12
Schonell Spelling	-1yr 3mths	-7
Schonell Graded Dictation – Test B	0yrs 8mths	3
Schonell Graded Dictation – Test C	1yr 4mths	7
Schonell Graded Dictation – Test D	0yrs 6mths	6

Phonic Inventories – Case LBC1

There are no detailed pre- and post-test Phonic Inventory scores available for participant LBC1.

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Test Results – LBC1

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - Begin	11yrs 0mths	8yrs 1mth	8yrs 6mths	8yrs 1mth
Raw Score		31	8	31
Date - End	11yrs 6mths	8yrs 8mths	10yrs 1mth	10yrs 4mths
Raw Score		37	15	53

Gained Scale Score		0yrs 7mths	1yr 7mths	2yrs 3mths
Gained Raw Score		6	7	22

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - Begin	7yrs 4mths	No Scaled Score	7yrs 2mths
Raw Score	9	21	23
Positive Score	16	9	15
Date - End	8yrs 10mths	8yrs 4mths	
Raw Score	3	9	
Positive Score	23	21	

Gained Scale Score	1yr 6mths	No Scaled Score	
Gained Raw Score	6	12	
Gained Positive Score	7	12	

Test Results Summary - Case LBC1

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 7mths	6
Holborn Reading Test	1yr 7mths	7
Schonell Spelling	2yrs 3mths	22
Schonell Graded Dictation – Test B	1yr 6mths	6
Schonell Graded Dictation – Test C	No Scaled Score	12
Schonell Graded Dictation – Test D		

Phonic Inventories – Case LBD1

There are no detailed pre- and post-test Phonic Inventory scores available for participant LBD1.

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Test Results – Case LBD1

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - Begin	12yrs 0mths	6yrs 8mths	8yrs 8mths	7yrs 10mths
Raw Score		17	9	28
Date - End	12yrs 6mths	7yrs 8mths	9yrs 10mths	7yrs 10mths
Raw Score		27	14	28

Gained Scale Score		1yr 0mths	1yr 2mths	0yrs 0mths
Gained Raw Score		10	5	0

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - Begin	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	12	28	32
Positive Score	13	No Scaled Score	No Scaled Score
Date - End	7yrs 4mths	No Scaled Score	No Scaled Score
Raw Score	9	27	30
Positive Score	16	No Scaled Score	No Scaled Score

Gained Scale Score	No Scaled Score	No Scaled Score	No Scaled Score
Gained Raw Score	3	1	2
Gained Positive Score	3	No Scaled Score	No Scaled Score

Test Results Summary - Case LBD1

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 0mths	10
Holborn Reading Test	1yr 2mths	5
Schonell Spelling	0yrs 0mths	0
Schonell Graded Dictation – Test B	No Scaled Score	3
Schonell Graded Dictation – Test C	No Scaled Score	1
Schonell Graded Dictation – Test D	No Scaled Score	2

Phonic Inventories – Case LBE1

There are no detailed pre- and post-test Phonic Inventory scores available for participant LBE1.

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case LBE1

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - Begin	11yrs 0mths	8yrs 4mths	8yrs 8mths	8yrs 11mths
Raw Score		33	9	39
Date - End	11yrs 6mths	8yrs 11mths	10yrs 9mths	9yrs 5mths
Raw Score		39	18	44

Gained Scale Score		0yrs 7mths	2yrs 1mth	0yrs 6mths
Gained Raw Score		6	9	5

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - Begin	8yrs 8mths	8yrs 6mths	7yrs 8mths
Raw Score	3	8	17
Positive Score	23	22	18.5
Date - End	9yrs 1mth	7yrs 0mths	8yrs 10mths
Raw Score	1	15	10
Positive Score	26	15	24

Gained Scale Score	0yrs 5mths	-1yr 6mths	1yr 2mths
Gained Raw Score	2	-7	7
Gained Positive Score	3	-7	5.5

Test Results Summary - Case LBE1

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 7mths	6
Holborn Reading Test	2yrs 1mth	9
Schonell Spelling	0yrs 6mths	5
Schonell Graded Dictation – Test B	0yrs 5mths	2
Schonell Graded Dictation – Test C	-1yr 6mths	-7
Schonell Graded Dictation – Test D	1yr 2mths	7

Appendix 1g: Sample Group Seven

2004 pilot study

Japari Remedial School

Fulltime Remedial education (n=32)

Participant Code	Intervention Type
CCA	Treatment
CCB	Treatment
CCC	Control
CCD	Control
CCE	Control
DTA	Treatment
DTB	Treatment
DTC	Treatment
DTD	Control
DTE	Control
DTF	Control
SKA	Treatment
SKB	Treatment
SKC	Control
SKD	Control
SKE	Control
LBA2	Treatment
LBB2	Treatment
LBC2	Treatment
LBD2	Treatment
LBE2	Control
LBF2	Control
LBG2	Control

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Participant Code	Intervention Type
LBH2	Control
KEA2	Treatment
KEB2	Treatment
KEC2	Treatment
KED2	Treatment
KEE2	Control
KEF2	Control
KEG2	Control
KEH2	Control

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Phonic Inventories – Case CCA

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters			
Medial Vowels	2	6	
Medial Vowel Digraphs		2	
Ending Consonants	2	1	
Ending Blends/Clusters	6	1	
Long and Short Vowel Confusion			
Consonant/Sound Confusion	2	6	1
Reversals/Transposals			1
Errors with Prefixes			
Errors with Suffixes			6
Syllabification Errors			5

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends			
Medial Vowels	1	3	
Medial Vowel Digraphs		2	
Ending Consonants			
Ending Blends/Clusters	6	2	
Long and Short Vowel Confusion	1	2	
Consonant/Sound Confusion	2		3
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			1
Syllabification Errors			3

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case CCA

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date – May 2004	7yrs	9yrs 3mths	8yrs 8mths	8yrs 2mths
Raw Score		43	9	32
Date – Nov 2004		8yrs 4mths	9yrs 2mths	8yrs 6mths
Raw Score		34	11	36

Gained Scale Score		-0yrs 11mths	0yrs 4mths	0yrs 4mths
Gained Raw Score		-9	2	4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date – May 2004	8yrs 8mths	7yrs 10mths	8yrs 6mths
Raw Score	3	11	12
Positive Score	23	19	22
Date – Nov 2004	9yrs 6mths	7yrs 8mths	8yrs 6mths
Raw Score	2	12	12
Positive Score	25	18	22

Gained Scale Score	0yrs 10mths	-0yrs 2mtns	0yrs 0mths
Gained Raw Score	1	-1	0
Gained Positive Score	2	-1	0

Test Results Summary – Case CCA

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	-0yrs 11mths	-9
Holborn Reading Test	0yrs 4mths	2
Schonell Spelling	0yrs 4mths	4
Schonell Graded Dictation – Test B	0yrs 10mths	1
Schonell Graded Dictation – Test C	-0yrs 2mths	-1
Schonell Graded Dictation – Test D	0yrs 0mths	0

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Phonic Inventories – Case CCB

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters			
Medial Vowels	3	4	
Medial Vowel Digraphs		3	
Ending Consonants			
Ending Blends/Clusters	3	2	
Long and Short Vowel Confusion			1
Consonant/Sound Confusion		2	1
Reversals/Transposals			1
Errors with Prefixes			
Errors with Suffixes			1
Syllabification Errors			6

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels	1		
Medial Vowel Digraphs		3	
Ending Consonants			
Ending Blends/Clusters	1	1	
Long and Short Vowel Confusion	1		
Consonant/Sound Confusion		1	1
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			1
Syllabification Errors			5

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Test Results – Case CCB

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date – May 2004	11yrs	10yrs 9mths	9yrs 10mths	9yrs 2mths
Raw Score		59	14	42
Date – Nov 2004		11yrs 5mths	11yrs 10mths	9yrs 11mths
Raw Score		64	23	49

Gained Scale Score		0yrs 8mths	1yr 0mths	0yrs 9mths
Gained Raw Score		5	9	7

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date – May 2004	8yrs 8mths	8yrs 8mths	8yrs 8mths
Raw Score	3	7	11
Positive Score	23	23	23
Date – Nov 2004	8yrs 6mths	8yrs 8mths	10yrs 5mths
Raw Score	4	7	5
Positive Score	22	23	27

Gained Scale Score	-0yrs 2mths	0yrs 0mths	1yr 9mths
Gained Raw Score	-1	0	6
Gained Positive Score	-1	0	4

Test Results Summary – Case CB

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 8mths	5
Holborn Reading Test	1yr 0mths	9
Schonell Spelling	0yrs 9mths	7
Schonell Graded Dictation – Test B	-0yrs 2mths	-1
Schonell Graded Dictation – Test C	0yrs 0mths	0
Schonell Graded Dictation – Test D	1yrs 9mths	6

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Phonic Inventories – CCC

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters		1	
Medial Vowels	1	2	
Medial Vowel Digraphs		2	
Ending Consonants	1		1
Ending Blends/Clusters	1	1	
Long and Short Vowel Confusion			
Consonant/Sound Confusion		1	1
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			3

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends			
Medial Vowels	1	2	
Medial Vowel Digraphs		2	
Ending Consonants			
Ending Blends/Clusters	3		
Long and Short Vowel Confusion			
Consonant/Sound Confusion		2	1
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			5

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
Techniques in the Remedial Environment

Test Results – CCC

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date – May 2004	10yrs	10yrs 3mths	10yrs 3mths	8yrs 5mths
Raw Score		53	16	35
Date – Nov 2004		12yrs 3mths	12yrs 1mth	10yrs 1mth
Raw Score		73	24	51

Gained Scale Score		2yrs 0mths	1yr 10mths	1yr 8mths
Gained Raw Score		20	8	16

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date – May 2004	10yrs 5mths	8yrs 11mths	9yrs 6mths
Raw Score	0	6	8
Positive Score	27	24	25
Date – Nov 2004	10yrs 0mths	10yrs 5mths	10yrs 11mths
Raw Score	1	3	4
Positive Score	26	27	28

Gained Scale Score	-0yrs 5mths	1yr 6mth	1yr 5mths
Gained Raw Score	-1	3	4
Gained Positive Score	-1	3	3

Test Results Summary - Case CCC

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	2yrs 0mths	20
Holborn Reading Test	1yr 10mths	8
Schonell Spelling	1yr 8mths	16
Schonell Graded Dictation – Test B	-0yrs 5mths	-1
Schonell Graded Dictation – Test C	1yr 6mths	3
Schonell Graded Dictation – Test D	1yr 5mths	4

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Phonic Inventories – CCD

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters			
Medial Vowels	3	4	
Medial Vowel Digraphs		3	
Ending Consonants			
Ending Blends/Clusters		3	
Long and Short Vowel Confusion	1		
Consonant/Sound Confusion		3	
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			3
Syllabification Errors			4

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends		1	
Medial Vowels	1	2	
Medial Vowel Digraphs		2	
Ending Consonants			
Ending Blends/Clusters	5	2	
Long and Short Vowel Confusion	1		
Consonant/Sound Confusion		2	
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – CCD

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date – May 2004	9yrs	8yrs 7mths	8yrs 11mths	8yrs 5mths
Raw Score		37	10	35
Date – Nov 2004		10yrs 8mths	9yrs 5mths	9yrs 9mths
Raw Score		58	12	49

Gained Scale Score		2yrs 1mth	0yrs 6mths	1yr 4mths
Gained Raw Score		21	2	14

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date – May 2004	8yrs 6mths	8yrs 11mths	9yrs 6mths
Raw Score	4	6	8
Positive Score	22	24	25
Date – Nov 2004	9yrs 6mths	10yrs 5mths	10yrs 5mths
Raw Score	2	3	5
Positive Score	25	27	27

Gained Scale Score	1yr 0mths	1yr 6mths	0yrs 11mths
Gained Raw Score	2	3	3
Gained Positive Score	3	3	2

Test Results Summary - Case CCD

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	2yrs 1mth	21
Holborn Reading Test	0yrs 6mths	2
Schonell Spelling	1yr 4mths	14
Schonell Graded Dictation – Test B	1yr 0mths	2
Schonell Graded Dictation – Test C	1yr 6mths	3
Schonell Graded Dictation – Test D	0yrs 11mths	3

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Phonic Inventories – CCE

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends/Clusters	1		
Medial Vowels	6	4	
Medial Vowel Digraphs		1	
Ending Consonants			
Ending Blends/Clusters	4	2	
Long and Short Vowel Confusion			
Consonant/Sound Confusion	2	1	1
Reversals/Transposals		1	
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			2

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends			
Medial Vowels	4	2	
Medial Vowel Digraphs		2	
Ending Consonants			
Ending Blends/Clusters	2	1	
Long and Short Vowel Confusion			
Consonant/Sound Confusion		2	
Reversals/Transposals		2	2
Errors with Prefixes			
Errors with Suffixes			2
Syllabification Errors			4

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
Techniques in the Remedial Environment

Test Results – CCE

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date – May 2004	10yrs	8yrs 3mths	8yrs 6mths	8yrs 8mths
Raw Score		33	8	38
Date – Nov 2004		8yrs 4mths	9yrs 2mths	9yrs 6mths
Raw Score		34	11	46

Gained Scale Score		0yrs 1mth	0yrs 8mths	0yrs 10mths
Gained Raw Score		1	3	8

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date – May 2004	10yrs 0mths	7yrs 4mths	8yrs 11mths
Raw Score	1	14	10
Positive Score	26	16	24
Date – Nov 2004	9yrs 6mths	8yrs 11mths	10yrs 11mths
Raw Score	2	6	4
Positive Score	25	24	28

Gained Scale Score	-0yrs 4mths	1yr 7mths	2yrs 0mths
Gained Raw Score	-1	8	6
Gained Positive Score	-1	8	4

Test Results Summary - Case CCE

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 1mth	1
Holborn Reading Test	0yrs 8mths	3
Schonell Spelling	0yrs 10mths	8
Schonell Graded Dictation – Test B	-4mths	-1
Schonell Graded Dictation – Test C	1yr 7mths	8
Schonell Graded Dictation – Test D	2yrs 0mths	6

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Phonic Inventories – Case DTA

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends/Clusters	4	3	
Medial Vowels	9	8	
Medial Vowel Digraphs		10	
Ending Consonants	2	2	
Ending Blends/Clusters	6	4	1
Long and Short Vowel Confusion	2	6	
Consonant/Sound Confusion			
Reversals/Transposals	1		
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			12

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends	3	2	
Medial Vowels	4	6	
Medial Vowel Digraphs		7	
Ending Consonants		2	
Ending Blends/Clusters	4	5	
Long and Short Vowel Confusion	1		
Consonant/Sound Confusion	2		
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			4
Syllabification Errors			

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case DTA

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		8yrs 7mths	8yrs 8mths	8yrs 3mths
Raw Score		36	9	33
Date - Nov 2004		8yrs 8mths	8yrs 11mths	8yrs 8mths
Raw Score		37	10	37

Gained Scale Score		0yrs 1mth	0yrs 3mths	0yrs 5mths
Gained Raw Score		1	1	4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	8yrs 4mths	7yrs 4mths	8yrs 4mths
Raw Score	5	14	13
Positive Score	21	16	21
Date - Nov 2004	8yrs 4mths	8yrs 4mths	8yrs 6mths
Raw Score	5	9	12
Positive Score	21	21	22

Gained Scale Score	0yrs 0mths	1yr 0mths	0yrs 2mths
Gained Raw Score	0	5	1
Gained Positive Score	0	5	1

Test Results Summary – Case DTA

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 1mth	1
Holborn Reading Test	0yrs 3mths	1
Schonell Spelling	0yrs 5mths	4
Schonell Graded Dictation – Test B	0yrs 0mths	0
Schonell Graded Dictation – Test C	1yr 0mths	5
Schonell Graded Dictation – Test D	0yrs 2mths	1

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Phonic Inventories – Case DTB

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters		2	
Medial Vowels	9	6	1
Medial Vowel Digraphs		6	4
Ending Consonants		1	
Ending Blends/Clusters	10	4	4
Long and Short Vowel Confusion	2	4	2
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			1
Errors with Suffixes			8
Syllabification Errors			2

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1	1	
Medial Vowels	6	6	
Medial Vowel Digraphs		7	2
Ending Consonants		1	
Ending Blends/Clusters	5	2	5
Long and Short Vowel Confusion	1	1	1
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			1
Errors with Suffixes			8
Syllabification Errors			1

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – Case DTB

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		8yrs 7mths	8yrs 0mths	8yrs 3mths
Raw Score		37	6	33
Date - Nov 2004		8yrs 11mths	11yrs 5mths	8yrs 7mths
Raw Score		39	11	36

Gained Scale Score		4mths	3yrs 5mths	4mths
Gained Raw Score		2	5	3

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	8yrs 5mths	7yrs 1mth	7yrs 7mths
Raw Score	3	14	16
Positive Score	23	16	19
Date - Nov 2004	8yrs 3mths	7yrs 10mths	8yrs 3mths
Raw Score	4	10	12
Positive Score	22	20	22

Gained Scale Score	-2mths	9mths	8mths
Gained Raw Score	-1	4	4
Gained Positive Score	-1	4	3

Test Results Summary – Case DTB

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	4mths	2
Holborn Reading Test	3yrs 5mths	5
Schonell Spelling	4mths	3
Schonell Graded Dictation – Test B	-2mths	-1
Schonell Graded Dictation – Test C	9mths	4
Schonell Graded Dictation – Test D	8mths	4

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Phonic Inventories – Case DTC

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters			
Medial Vowels	4	3	
Medial Vowel Digraphs		1	
Ending Consonants		1	
Ending Blends/Clusters	3	4	4
Long and Short Vowel Confusion			1
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			2
Syllabification Errors			3

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends			1
Medial Vowels	3	3	3
Medial Vowel Digraphs		3	
Ending Consonants		1	
Ending Blends/Clusters	2	4	6
Long and Short Vowel Confusion	1		
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			1
Errors with Suffixes			2
Syllabification Errors			2

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Test Results – Case DTC

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		11yrs 8mths	10yrs 9mths	10yrs 7mths
Raw Score		68	18	56
Date - Nov 2004		12yrs 10mths	11yrs 10mths	10yrs 7mths
Raw Score		78	23	56

Gained Scale Score		1yr 2mths	1yrs 1mth	0mths
Gained Raw Score		10	5	0

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	9yrs 5mths	10yrs 11mths	10yrs 0mths
Raw Score	2	2	7
Positive Score	25	28	26
Date - Nov 2004	10yrs 0mths	10yrs 11mths	10yrs 11mths
Raw Score	1	2	4
Positive Score	26	28	28

Gained Scale Score	7mths	0mths	11mths
Gained Raw Score	1	0	3
Gained Positive Score	1	0	2

Test Results Summary - Case DTC

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 2mths	10
Holborn Reading Test	1yr 1mth	5
Schonell Spelling	0mths	0
Schonell Graded Dictation – Test B	7mths	1
Schonell Graded Dictation – Test C	0mths	0
Schonell Graded Dictation – Test D	11mths	3

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Phonic Inventories – DTD

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	2		
Initial Blends/Clusters	2		4
Medial Vowels	2	9	
Medial Vowel Digraphs		10	
Ending Consonants		1	
Ending Blends/Clusters	7	6	7
Long and Short Vowel Confusion	2	1	2
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			10
Syllabification Errors			4

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends		1	4
Medial Vowels		5	
Medial Vowel Digraphs		8	
Ending Consonants	1	2	
Ending Blends/Clusters	2	8	8
Long and Short Vowel Confusion	2	2	3
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			6
Syllabification Errors			5

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Test Results – DTD

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		10yrs 5mths	9yrs 7mths	8yrs 8mths
Raw Score		55	13	37
Date - Nov 2004		11yrs 11mths	13yrs 11mths	8yrs 10mths
Raw Score		69	33	38

Gained Scale Score		1yrs 6mths	4yrs 4mths	2mths
Gained Raw Score		14	20	1

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	7yrs 2mths	Below 7yrs	7yrs 2mths
Raw Score	10	19	23
Positive Score	15	11	15
Date - Nov 2004	8yrs 6mths	7yrs 11mths	8yrs 4mths
Raw Score	4	11	13
Positive Score	22	19	21

Gained Scale Score	1yrs 4mths	11mths	1yrs 2mths
Gained Raw Score	6	8	10
Gained Positive Score	7	8	6

Test Results Summary - Case DTD

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 6mths	14
Holborn Reading Test	4yrs 4mths	20
Schonell Spelling	2mths	1
Schonell Graded Dictation – Test B	1yr 4mths	6
Schonell Graded Dictation – Test C	11mths	8
Schonell Graded Dictation – Test D	1yr 2mths	10

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Phonic Inventories – DTE

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	3	1	
Medial Vowels	2	2	
Medial Vowel Digraphs		2	
Ending Consonants	1	1	1
Ending Blends/Clusters	6	3	1
Long and Short Vowel Confusion		1	1
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			7
Syllabification Errors			1

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends			
Medial Vowels	1	2	
Medial Vowel Digraphs			
Ending Consonants	2		
Ending Blends/Clusters		1	
Long and Short Vowel Confusion		1	
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			2
Syllabification Errors			2

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Test Results – DTE

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		10yrs 5mths	9yrs 7mths	8yrs 8mths
Raw Score		55	13	38
Date - Nov 2004		10yrs 5mths	9yrs 5mths	9yrs 7mths
Raw Score		55	12	46

Gained Scale Score		0mths	-2mths	1yr 1mth
Gained Raw Score		0	-1	8

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	8yrs 5mths	8yrs 3mths	8yrs 3mths
Raw Score	3	8	12
Positive Score	23	22	22
Date - Nov 2004	8yrs 5mths	8yrs 5mths	7yrs 5mths
Raw Score	3	7	18
Positive Score	23	23	18

Gained Scale Score	0mths	2mths	-10mths
Gained Raw Score	0	1	-6
Gained Positive Score	0	1	-4

Test Results Summary - Case DTE

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0mths	0
Holborn Reading Test	-2mths	-1
Schonell Spelling	1yr 1mth	8
Schonell Graded Dictation – Test B	0mths	0
Schonell Graded Dictation – Test C	2mths	1
Schonell Graded Dictation – Test D	-10mths	-6

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Phonic Inventories – DTF

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	2		
Medial Vowels	1	5	1
Medial Vowel Digraphs		4	
Ending Consonants			
Ending Blends/Clusters	5	3	5
Long and Short Vowel Confusion	1	4	2
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			2
Syllabification Errors			5

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels	1	6	
Medial Vowel Digraphs		3	
Ending Consonants			
Ending Blends/Clusters	8	5	
Long and Short Vowel Confusion	4	4	
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			5
Syllabification Errors			1

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Test Results – DTF

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		10yrs 3mths	9yrs 10mths	9yrs 3mths
Raw Score		53	14	43
Date - Nov 2004		13yrs 1mth	13yrs 11mths	10yrs 5mths
Raw Score		81	33	54

Gained Scale Score		2yrs 10mths	4yrs 1mth	1yr 2mths
Gained Raw Score		28	19	11

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	8yrs 6mths	7yrs 6mths	9yrs 2mths
Raw Score	4	13	9
Positive Score	22	17	24.5
Date - Nov 2004	8yrs 6mths	9yrs 5mths	8yrs 9mths
Raw Score	4	5	11
Positive Score	22	25	23

Gained Scale Score	0mths	1yr 11mths	-3mths
Gained Raw Score	0	8	-2
Gained Positive Score	0	8	-1.5

Test Results Summary - Case DTF

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	2yrs 10mths	28
Holborn Reading Test	4yrs 1mth	19
Schonell Spelling	1yr 2mths	11
Schonell Graded Dictation – Test B	0mths	0
Schonell Graded Dictation – Test C	1yr 11mths	8
Schonell Graded Dictation – Test D	-3mths	-2

Phonic Inventories – Case SKA

There are no detailed pre- and post-test Phonic Inventory scores available for participant SKA.

The difference between the pre- and post- test results for levels 1, 2 and 3 of the Phonic Inventories indicate that participant SKA made five fewer errors in level one, four fewer errors in level two, and three more errors in level three of the Phonic Inventories.

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Test Results – Case SKA

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date – May 2004	14yrs	10yrs 8mths	12yrs 6mths	9yrs 0mths
Raw Score		65	26	40
Date – Nov 2004		12yrs 0mths	13yrs 11mths	9yrs 9mths
Raw Score		76	33	48

Gained Scale Score		1yr 2mths	1yr 5mths	9mths
Gained Raw Score		11	7	8

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date – May 2004	7yrs 11mths	9yrs 5mths	10yrs 0mths
Raw Score	6	5	7
Positive Score	19	25	26
Date – Nov 2004	10yrs 6mths	10yrs 0mths	10yrs 11mths
Raw Score	0	4	4
Positive Score	27	26	28

Gained Scale Score	2yrs 7mths	7mths	11mths
Gained Raw Score	6	1	3
Gained Positive Score	8	1	2

Test Results Summary - Case SKA

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 2mths	11
Holborn Reading Test	1yr 5mths	7
Schonell Spelling	9mths	8
Schonell Graded Dictation – Test B	2yrs 7mths	6
Schonell Graded Dictation – Test C	7mths	1
Schonell Graded Dictation – Test D	11mths	3

Phonic Inventories – Case SKB

There are no detailed pre- and post-test Phonic Inventory scores available for participant SKB.

The difference between the pre- and post- test results for levels 1, 2 and 3 of the Phonic Inventories indicate that participant SKB made nine fewer errors in level one, three fewer errors in level two, and two fewer errors in level three of the Phonic Inventories.

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Test Results – Case SKB

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date – May 2004	13yrs	11yrs 0mths	11yrs 8mths	9yrs 8mths
Raw Score		68	22	48
Date – Nov 2004		11yrs 0mths	12yrs 4mths	10yrs 1mth
Raw Score		68	25	51

Gained Scale Score		0mths	8mths	5mths
Gained Raw Score		0	3	3

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date – May 2004	8yrs 8mths	9yrs 5mths	10yrs 6mths
Raw Score	3	5	6
Positive Score	23	25	27
Date – Nov 2004	8yrs 11mths	10yrs 11mths	10yrs 6mths
Raw Score	2	2	5
Positive Score	24	28	27

Gained Scale Score	3mths	1yr 6mths	0mths
Gained Raw Score	1	3	1
Gained Positive Score	0	3	0

Test Results Summary - Case SKB

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0mths	0
Holborn Reading Test	8mths	3
Schonell Spelling	5mths	3
Schonell Graded Dictation – Test B	3mths	1
Schonell Graded Dictation – Test C	1yr 6mths	3
Schonell Graded Dictation – Test D	0mths	1

Phonic Inventories – SKC

There are no detailed pre- and post-test Phonic Inventory scores available for participant SKC.

The difference between the pre- and post- test results for levels 1, 2 and 3 of the Phonic Inventories indicate that participant SKC made no improvement in level one, six more errors in level two, and two more errors in level three of the Phonic Inventories.

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Test Results – SKC

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date – May 2004	13yrs	7yrs 0mths	13yrs 0mths	13yrs 0mths
Raw Score		15	28	65
Date – Nov 2004		7yrs 8mths	13yrs 11mths	13yrs 7mths
Raw Score		27	33	68

Gained Scale Score		8mths	11mths	7mths
Gained Raw Score		12	5	3

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date – May 2004	8yrs 11mths	9yrs 5mths	10yrs 0mths
Raw Score	2	5	7
Positive Score	24	25	26
Date – Nov 2004	8yrs 8mths	11yrs 10mths	10yrs 11mths
Raw Score	3	1	4
Positive Score	23	29	28

Gained Scale Score	-3mths	2yrs 6mths	11mths
Gained Raw Score	-1	4	3
Gained Positive Score	-1	4	2

Test Results Summary - Case SKC

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	8mths	12
Holborn Reading Test	11mths	5
Schonell Spelling	7mths	3
Schonell Graded Dictation – Test B	-3mths	-1
Schonell Graded Dictation – Test C	2yrs 6mths	4
Schonell Graded Dictation – Test D	11mths	3

Phonic Inventories – SKD

There are no detailed pre- and post-test Phonic Inventory scores available for participant SKD.

The difference between the pre- and post- test results for levels 1, 2 and 3 of the Phonic Inventories indicate that participant SKD fewer three more errors in level one, eight fewer errors in level two, and seven fewer errors in level three of the Phonic Inventories.

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Test Results – SKD

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date – May 2004	13yrs	7yrs 5mths	13yrs 0mths	7yrs 5mths
Raw Score		22	28	25
Date – Nov 2004		9yrs 6mths	13yrs 5mths	8yrs 5mths
Raw Score		49	30	35

Gained Scale Score		2yrs 1mth	5mths	1yr 0mths
Gained Raw Score		27	2	10

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date – May 2004	7yrs 11mths	7yrs 9mths	8yrs 1mth
Raw Score	6	12	14
Positive Score	19	18	20
Date – Nov 2004	8yrs 1mth	7yrs 2mths	7yrs 11mths
Raw Score	7	15	16
Positive Score	20	15	19

Gained Scale Score	2mths	-7mths	-2mths
Gained Raw Score	1	-3	-2
Gained Positive Score	1	-3	-1

Test Results Summary - Case SKD

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	2yrs 1mth	27
Holborn Reading Test	5mths	2
Schonell Spelling	1yr 10mths	10
Schonell Graded Dictation – Test B	2mths	1
Schonell Graded Dictation – Test C	-7mths	-3
Schonell Graded Dictation – Test D	-2mths	-2

Phonic Inventories – SKE

There are no detailed pre- and post-test Phonic Inventory scores available for participant SKE.

The difference between the pre- and post- test results for levels 1, 2 and 3 of the Phonic Inventories indicate that participant SKE fewer four more errors in level one, six more errors in level two, and nine fewer errors in level three of the Phonic Inventories.

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Test Results – SKE

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date – May 2004	13yrs	9yrs 7mths	9yrs 5mths	8yrs 6mths
Raw Score		51	12	35
Date – Nov 2004		10yrs 8mths	12yrs 1mth	10yrs 0mths
Raw Score		65	24	50

Gained Scale Score		1yr 1mth	2yrs 6mths	1yr 4mths
Gained Raw Score		14	12	15

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date – May 2004	8yrs 8mths	7yrs 3mths	7yrs 8mths
Raw Score	2	13	17
Positive Score	24	17	19
Date – Nov 2004	8yrs 1mth	7yrs 6mths	7yrs 3mths
Raw Score	5	12	20
Positive Score	21	18	17

Gained Scale Score	-7mths	3mths	-5mths
Gained Raw Score	-3	1	-3
Gained Positive Score	-3	1	-1

Test Results Summary - Case SKE

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 1mth	14
Holborn Reading Test	2yrs 6mths	12
Schonell Spelling	1yr 4mths	15
Schonell Graded Dictation – Test B	-7mths	-3
Schonell Graded Dictation – Test C	3mths	1
Schonell Graded Dictation – Test D	-5mths	-3

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Phonic Inventories – Case LBA2

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		4	1
Initial Blends/Clusters	3	1	1
Medial Vowels	1	14	6
Medial Vowel Digraphs		13	
Ending Consonants		1	
Ending Blends/Clusters	16	13	13
Long and Short Vowel Confusion	2	7	10
Consonant/Sound Confusion	4	1	7
Reversals/Transposals		4	6
Errors with Prefixes			2
Errors with Suffixes			21
Syllabification Errors		1	3

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		3	
Initial Blends	4		
Medial Vowels	2	12	1
Medial Vowel Digraphs		14	
Ending Consonants		1	
Ending Blends/Clusters	10	14	20
Long and Short Vowel Confusion		1	5
Consonant/Sound Confusion	2		4
Reversals/Transposals		2	
Errors with Prefixes			5
Errors with Suffixes			18
Syllabification Errors		1	3

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Test Results – Case LBA2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		8yrs 11mths	8yrs 3mths	7yrs 9mths
Raw Score		42	7	28
Date - Nov 2004		8yrs 3mths	8yrs 11mths	7yrs 8mths
Raw Score		33	10	27

Gained Scale Score		-8mths	8mths	-1mth
Gained Raw Score		-9	3	-1

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	11	19	26
Positive Score	14	11	12
Date - Nov 2004	7yrs 8mths	No Scaled Score	7yrs 1mths
Raw Score	6	17	22
Positive Score	19	13	16

Gained Scale Score	No Scaled Score	No Scaled Score	No Scaled Score
Gained Raw Score	5	2	4
Gained Positive Score	5	2	4

Test Results Summary – Case LBA2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	-8mths	-9
Holborn Reading Test	8mths	3
Schonell Spelling	-1mth	-1
Schonell Graded Dictation – Test B	No Scaled Score	5
Schonell Graded Dictation – Test C	No Scaled Score	2
Schonell Graded Dictation – Test D	No Scaled Score	4

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Phonic Inventories – Case LBB2

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	1		
Medial Vowels	1	9	2
Medial Vowel Digraphs	1	13	5
Ending Consonants		3	
Ending Blends/Clusters	6	11	11
Long and Short Vowel Confusion			3
Consonant/Sound Confusion	1		4
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes		1	14
Syllabification Errors			5

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels		7	1
Medial Vowel Digraphs		11	3
Ending Consonants		2	2
Ending Blends/Clusters	4	10	13
Long and Short Vowel Confusion			2
Consonant/Sound Confusion	2		
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			1
Syllabification Errors			11

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Test Results – Case LBB2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		8yrs 2mths	8yrs 0mths	7yrs 9mths
Raw Score		32	6	28
Date - Nov 2004		8yrs 5mths	9yrs 7mths	8yrs 2mths
Raw Score		35	13	32

Gained Scale Score		3mths	1yr 7mths	5mths
Gained Raw Score		3	7	4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	7yrs 4mths	No Scaled Score	7yrs 6mths
Raw Score	9	17	20
Positive Score	16	13	17
Date - Nov 2004	No Scaled Score	No Scaled Score	7yrs 9mths
Raw Score	11	17	18
Positive Score	14	13	18

Gained Scale Score	No Scaled Score	No Scaled Score	3mths
Gained Raw Score	-2	0	2
Gained Positive Score	-2	0	1

Test Results Summary – Case LB2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	3mths	3
Holborn Reading Test	1yr 7mths	7
Schonell Spelling	5mths	4
Schonell Graded Dictation – Test B	No Scaled Score	-2
Schonell Graded Dictation – Test C	No Scaled Score	0
Schonell Graded Dictation – Test D	No Scaled Score	2

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Phonic Inventories – LBC2

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	2		
Initial Blends/Clusters	4	2	
Medial Vowels	4	10	4
Medial Vowel Digraphs		12	
Ending Consonants		1	
Ending Blends/Clusters	18	12	17
Long and Short Vowel Confusion		6	1
Consonant/Sound Confusion	3	1	5
Reversals/Transposals	1		
Errors with Prefixes			1
Errors with Suffixes			16
Syllabification Errors			4

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1	1	
Initial Blends	4		
Medial Vowels	2	6	4
Medial Vowel Digraphs		9	
Ending Consonants		1	
Ending Blends/Clusters	9	12	14
Long and Short Vowel Confusion			2
Consonant/Sound Confusion		1	1
Reversals/Transposals	1		
Errors with Prefixes			2
Errors with Suffixes			14
Syllabification Errors			6

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – LBC2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		8yrs 1mth	8yrs 3mths	7yrs 8mths
Raw Score		31	7	27
Date - Nov 2004		7yrs 10mths	9yrs 5mths	8yrs 2mths
Raw Score		29	12	32

Gained Scale Score		-3mths	1yrs 2mths	6mths
Gained Raw Score		-2	5	5

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	15	27	27
Positive Score	10	3	11
Date - Nov 2004	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	10	23	25
Positive Score	15	7	13

Gained Scale Score	No Scaled Score	No Scaled Score	No Scaled Score
Gained Raw Score	5	4	2
Gained Positive Score	5	4	2

Test Results Summary – Case LBC2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	-3mths	-2
Holborn Reading Test	1yrs 2mths	5
Schonell Spelling	6mths	5
Schonell Graded Dictation – Test B	No Scaled Score	5
Schonell Graded Dictation – Test C	No Scaled Score	4
Schonell Graded Dictation – Test D	No Scaled Score	2

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Techniques in the Remedial Environment

Phonic Inventories – Case LBD2

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			5
Initial Blends/Clusters	2	1	
Medial Vowels		7	1
Medial Vowel Digraphs		5	4
Ending Consonants		1	
Ending Blends/Clusters	14	11	10
Long and Short Vowel Confusion		1	6
Consonant/Sound Confusion			4
Reversals/Transposals			
Errors with Prefixes			1
Errors with Suffixes			13
Syllabification Errors			1

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels	1		
Medial Vowel Digraphs		1	
Ending Consonants		1	1
Ending Blends/Clusters	5		1
Long and Short Vowel Confusion			
Consonant/Sound Confusion	1		
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			5
Syllabification Errors			

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Test Results – Case LBD2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		8yrs 8mths	8yrs 6mths	7yrs 11mths
Raw Score		39	8	29
Date - Nov 2004		10yrs 1mth	9yrs 10mths	9yrs 3mths
Raw Score		57	14	46

Gained Scale Score		1yr 5mths	1yr 2mths	1yr 4mths
Gained Raw Score		18	6	17

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	8yrs 4mths	7yrs 2mths	7yrs 2mths
Raw Score	5	15	22
Positive Score	21	15	15
Date - Nov 2004	8yrs 9mths	8yrs 4mths	8yrs 4mths
Raw Score	3	9	14
Positive Score	23	21	21

Gained Scale Score	5mths	1yr 2mths	1yr 2mths
Gained Raw Score	2	6	8
Gained Positive Score	2	6	6

Test Results Summary – Case LBD2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 5mths	18
Holborn Reading Test	1yr 2mths	6
Schonell Spelling	1yr 4mths	17
Schonell Graded Dictation – Test B	5mths	2
Schonell Graded Dictation – Test C	1yr 2mths	6
Schonell Graded Dictation – Test D	1yr 2mths	8

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Phonic Inventories – LBE2

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	2	2	
Medial Vowels	1	16	3
Medial Vowel Digraphs	1	13	
Ending Consonants		4	
Ending Blends/Clusters	15	19	8
Long and Short Vowel Confusion			6
Consonant/Sound Confusion			
Reversals/Transposals	1	5	
Errors with Prefixes			1
Errors with Suffixes			19
Syllabification Errors			3

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels	1	11	3
Medial Vowel Digraphs		10	
Ending Consonants		2	
Ending Blends/Clusters	9	12	7
Long and Short Vowel Confusion	1	2	6
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			1
Errors with Suffixes			19
Syllabification Errors		2	3

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Test Results – LBE2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		8yrs 8mths	8yrs 8mths	7yrs 3mths
Raw Score		39	9	19
Date - Nov 2004		9yrs 2mths	9yrs 2mths	7yrs 2mths
Raw Score		45	11	18

Gained Scale Score		6mths	6mths	-1mth
Gained Raw Score		6	3	-1

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	20	33	32
Positive Score	5	0	6
Date - Nov 2004	7yrs 4mths	No Scaled Score	No Scaled Score
Raw Score	9	21	24
Positive Score	16	9	14

Gained Scale Score	No Scaled Score	No Scaled Score	No Scaled Score
Gained Raw Score	11	12	8
Gained Positive Score	11	9	8

Test Results Summary - Case LBE2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	6mths	6
Holborn Reading Test	6mths	3
Schonell Spelling	-1mth	-1
Schonell Graded Dictation – Test B	No Scaled Score	11
Schonell Graded Dictation – Test C	No Scaled Score	12
Schonell Graded Dictation – Test D	No Scaled Score	8

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Phonic Inventories – LBF2

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends/Clusters	1		
Medial Vowels	1	5	1
Medial Vowel Digraphs		5	
Ending Consonants		1	
Ending Blends/Clusters	9	5	7
Long and Short Vowel Confusion		1	3
Consonant/Sound Confusion	1		
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			11
Syllabification Errors			4

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels	1		
Medial Vowel Digraphs		3	
Ending Consonants		1	
Ending Blends/Clusters	7	3	4
Long and Short Vowel Confusion			1
Consonant/Sound Confusion	2		3
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			5
Syllabification Errors			3

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Test Results – LBF2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		9yrs 6mths	9yrs 5mths	7yrs 10mths
Raw Score		49	12	29
Date - Nov 2004		9yrs 6mths	9yrs 2mth	8yrs 6mths
Raw Score		49	11	36

Gained Scale Score		0mths	-3mths	8mths
Gained Raw Score		0	-1	7

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	10yrs 0mths	8yrs 1mth	7yrs 11mths
Raw Score	1	10	16
Positive Score	26	20	19
Date - Nov 2004	10yrs 6mths	8yrs 11mths	9yrs 5mths
Raw Score	0	6	8
Positive Score	27	24	25

Gained Scale Score	6mths	10mths	1yr 6mths
Gained Raw Score	1	4	8
Gained Positive Score	1	4	6

Test Results Summary - Case LBF2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0mths	0
Holborn Reading Test	-3mths	-1
Schonell Spelling	8mths	7
Schonell Graded Dictation – Test B	6mths	1
Schonell Graded Dictation – Test C	10mths	4
Schonell Graded Dictation – Test D	1yr 6mths	8

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Phonic Inventories – LBG2

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		6	1
Initial Blends/Clusters	2	3	
Medial Vowels	9	15	7
Medial Vowel Digraphs	1	16	6
Ending Consonants		2	1
Ending Blends/Clusters	17	18	15
Long and Short Vowel Confusion	2	6	5
Consonant/Sound Confusion	7	2	3
Reversals/Transposals	1	3	1
Errors with Prefixes			
Errors with Suffixes	2		31
Syllabification Errors		3	9

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1	4	
Initial Blends	2	1	1
Medial Vowels	4	16	4
Medial Vowel Digraphs	1	20	5
Ending Consonants	19	3	1
Ending Blends/Clusters		18	18
Long and Short Vowel Confusion	5	3	3
Consonant/Sound Confusion	1		9
Reversals/Transposals		1	
Errors with Prefixes			1
Errors with Suffixes			31
Syllabification Errors		6	9

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Test Results – LBG2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		7yrs 10mths	8yrs 3mths	7yrs 4mths
Raw Score		29	7	21
Date - Nov 2004		8yrs 3mths	8yrs 11mths	6yrs 5mths
Raw Score		33	10	5

Gained Scale Score		5mths	8mths	-11mths
Gained Raw Score		4	3	16

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	24	25	31
Positive Score	6	5	8
Date - Nov 2004	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	16	26	34
Positive Score	9	4	7

Gained Scale Score	No Scaled Score	No Scaled Score	No Scaled Score
Gained Raw Score	8	-1	-3
Gained Positive Score	3	-1	-1

Test Results Summary - Case LBG2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	5mths	4
Holborn Reading Test	8mths	3
Schonell Spelling	-11mths	16
Schonell Graded Dictation – Test B	No Scaled Score	8
Schonell Graded Dictation – Test C	No Scaled Score	-1
Schonell Graded Dictation – Test D	No Scaled Score	-3

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Phonic Inventories – LBH2

May 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			5
Initial Blends/Clusters	4	2	9
Medial Vowels	4	12	10
Medial Vowel Digraphs		9	4
Ending Consonants		4	1
Ending Blends/Clusters	13	13	22
Long and Short Vowel Confusion	2	2	2
Consonant/Sound Confusion	6	1	3
Reversals/Transposals		3	
Errors with Prefixes			
Errors with Suffixes			22
Syllabification Errors	1	2	

November 2004

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		2	
Initial Blends	2	1	
Medial Vowels	4	8	
Medial Vowel Digraphs		7	4
Ending Consonants		2	15
Ending Blends/Clusters	11	16	4
Long and Short Vowel Confusion			9
Consonant/Sound Confusion	4		
Reversals/Transposals		3	
Errors with Prefixes			
Errors with Suffixes			20
Syllabification Errors		2	5

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Test Results – LBH2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		8yrs 3mths	8yrs 6mths	7yrs 7mths
Raw Score		33	8	26
Date - Nov 2004		8yrs 1mth	9yrs 2mths	8yrs 3mths
Raw Score		31	11	33

Gained Scale Score		-2mths	8mths	8mths
Gained Raw Score		-2	3	7

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	18	22	28
Positive Score	7	8	10
Date - Nov 2004	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	11	20	25
Positive Score	14	10	13

Gained Scale Score	No Scaled Score	No Scaled Score	No Scaled Score
Gained Raw Score	7	2	3
Gained Positive Score	7	2	3

Test Results Summary - Case LBH2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	-2mths	-2
Holborn Reading Test	8mths	3
Schonell Spelling	8mths	7
Schonell Graded Dictation – Test B	No Scaled Score	7
Schonell Graded Dictation – Test C	No Scaled Score	2
Schonell Graded Dictation – Test D	No Scaled Score	3

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Phonic Inventories – Case KEA2

Pre Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	2	2	3
Medial Vowels	10	9	4
Medial Vowel Digraphs		7	
Ending Consonants		2	
Ending Blends/Clusters	10	6	1
Long and Short Vowel Confusion		5	1
Consonant/Sound Confusion		4	
Reversals/Transposals			
Errors with Prefixes			4
Errors with Suffixes			10
Syllabification Errors			2

Post Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1	1	1
Medial Vowels	6	8	1
Medial Vowel Digraphs		5	
Ending Consonants		1	
Ending Blends/Clusters	6	6	
Long and Short Vowel Confusion		2	
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			2
Errors with Suffixes			6
Syllabification Errors			2

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Test Results – Case KEA2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		7yrs 10mths	8yrs 3mths	8yrs 7mths
Raw Score		28	7	36
Date - Nov 2004		8yrs 8mths	8yrs 8mths	9yrs 0mths
Raw Score		37	9	40

Gained Scale Score		10mths	5mths	3mths
Gained Raw Score		9	2	4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	No Scaled Score	No Scaled Score	
Raw Score	12	19	
Positive Score	13	11	
Date - Nov 2004	7yrs 3mths	No Scaled Score	
Raw Score	8	17	
Positive Score	17	13	

Gained Scale Score	No Scaled Score	No Scaled Score	
Gained Raw Score	4	2	
Gained Positive Score	4	2	

Test Results Summary - Case KEA2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	10mths	9
Holborn Reading Test	5mths	2
Schonell Spelling	3mths	4
Schonell Graded Dictation – Test B	No Scaled Score	4
Schonell Graded Dictation – Test C	No Scaled Score	2
Schonell Graded Dictation – Test D		

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Phonic Inventories – Case KEB2

Pre Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	1		
Medial Vowels	2	4	1
Medial Vowel Digraphs		1	
Ending Consonants		1	
Ending Blends/Clusters	6	1	1
Long and Short Vowel Confusion			
Consonant/Sound Confusion		1	
Reversals/Transposals			
Errors with Prefixes			1
Errors with Suffixes			1
Syllabification Errors			5

Post Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends			
Medial Vowels	2	4	
Medial Vowel Digraphs		1	
Ending Consonants		1	
Ending Blends/Clusters	2	1	
Long and Short Vowel Confusion			
Consonant/Sound Confusion		1	
Reversals/Transposals			
Errors with Prefixes			1
Errors with Suffixes			2
Syllabification Errors			3

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Test Results – Case KEB2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		9yrs 0mths	8yrs 11mths	7yrs 11mths
Raw Score		40	10	29
Date - Nov 2004		10yrs 2mths	10yrs 3mths	9yrs 4mths
Raw Score		52	16	47

Gained Scale Score		1yr 2mths	1yr 4mth	1yr 5mths
Gained Raw Score		12	6	18

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	8yrs 3mths	7yrs 11mths	8yrs 8mths
Raw Score	4	11	11
Positive Score	22	19	23
Date - Nov 2004	9yrs 2mths	10yrs 0mths	8yrs 11mths
Raw Score	2	4	10
Positive Score	25	26	24

Gained Scale Score	11mths	2yrs 1mth	3mths
Gained Raw Score	2	7	1
Gained Positive Score	3	7	1

Test Results Summary - Case KEB2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 2mths	12
Holborn Reading Test	1yr 4mths	6
Schonell Spelling	1yr 5mths	18
Schonell Graded Dictation – Test B	11mths	2
Schonell Graded Dictation – Test C	2yrs 1mth	7
Schonell Graded Dictation – Test D	3mths	1

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Phonic Inventories – Case KEC2

Pre Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends/Clusters	2	1	
Medial Vowels	2	8	1
Medial Vowel Digraphs		6	1
Ending Consonants		1	
Ending Blends/Clusters	8	8	5
Long and Short Vowel Confusion		5	1
Consonant/Sound Confusion	1	8	
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			10
Syllabification Errors			5

Post Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends	1		
Medial Vowels	1	2	
Medial Vowel Digraphs		3	
Ending Consonants			
Ending Blends/Clusters	1	6	3
Long and Short Vowel Confusion		3	
Consonant/Sound Confusion		4	
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			5
Syllabification Errors			3

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Test Results – Case KEC2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		8yrs 5mths	9yrs 7mths	9yrs 8mths
Raw Score		34	13	47
Date - Nov 2004		9yrs 0mths	10yrs 1mth	10yrs 2mths
Raw Score		40	15	52

Gained Scale Score		7mths	6mths	4mths
Gained Raw Score		6	2	5

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	8yrs 4mths	7yrs 2mths	
Raw Score	6	17	
Positive Score	19	13	
Date - Nov 2004	8yrs 3mths	7yrs 10mths	
Raw Score	4	12	
Positive Score	22	18	

Gained Scale Score	1mth	8mths	
Gained Raw Score	2	5	
Gained Positive Score	3	5	

Test Results Summary - Case KEC2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	7mths	6
Holborn Reading Test	6mths	2
Schonell Spelling	4mths	5
Schonell Graded Dictation – Test B	1mth	2
Schonell Graded Dictation – Test C	8mths	5
Schonell Graded Dictation – Test D		

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Phonic Inventories – Case KED2

Pre Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1	2	
Initial Blends/Clusters	6		4
Medial Vowels	7	9	
Medial Vowel Digraphs	1	14	
Ending Consonants	1	4	
Ending Blends/Clusters	13	10	11
Long and Short Vowel Confusion	1	9	
Consonant/Sound Confusion	4	4	3
Reversals/Transposals	1	2	
Errors with Prefixes			1
Errors with Suffixes			16
Syllabification Errors			3

Post Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1	2	
Initial Blends	4		
Medial Vowels	4	6	
Medial Vowel Digraphs	1	9	
Ending Consonants		1	
Ending Blends/Clusters	10	6	4
Long and Short Vowel Confusion		2	
Consonant/Sound Confusion	1	2	3
Reversals/Transposals		2	
Errors with Prefixes			1
Errors with Suffixes			11
Syllabification Errors			2

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Test Results – Case KED2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		7yrs 2mths	8yrs 8mths	7yrs 6mths
Raw Score		22	9	25
Date - Nov 2004		7yrs 6mths	9yrs 5mths	8yrs 7mths
Raw Score		25	12	36

Gained Scale Score		4mths	9mths	1yr 1mth
Gained Raw Score		3	3	11

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	6yrs 4mths		
Raw Score	15		
Positive Score	10		
Date - Nov 2004	6yrs 6mths		
Raw Score	14		
Positive Score	11		

Gained Scale Score	-2mths		
Gained Raw Score	1		
Gained Positive Score	1		

Test Results Summary - Case KED2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	4mths	3
Holborn Reading Test	9mths	9
Schonell Spelling	1yr 1mth	11
Schonell Graded Dictation – Test B	2mths	1
Schonell Graded Dictation – Test C		
Schonell Graded Dictation – Test D		

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Phonic Inventories – Case KEE2

Pre Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1	1	
Initial Blends/Clusters	3	1	
Medial Vowels	5	11	1
Medial Vowel Digraphs	1	11	
Ending Consonants		2	
Ending Blends/Clusters	8	12	4
Long and Short Vowel Confusion	3	6	2
Consonant/Sound Confusion	2	4	
Reversals/Transposals			
Errors with Prefixes			6
Errors with Suffixes			9
Syllabification Errors			6

Post Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels	2	10	4
Medial Vowel Digraphs	1	10	5
Ending Consonants		1	
Ending Blends/Clusters	8	10	
Long and Short Vowel Confusion	1	4	2
Consonant/Sound Confusion		3	
Reversals/Transposals			
Errors with Prefixes			1
Errors with Suffixes			10
Syllabification Errors			4

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Test Results – KEE2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		8yrs 2mth	8yrs 0mths	8yrs 4mths
Raw Score		32	6	33
Date - Nov 2004		8yrs 5mths	8yrs 3mth	8yrs 8mths
Raw Score		35	7	36

Gained Scale Score		3mths	3mths	4mths
Gained Raw Score		3	1	3

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	No Scaled Score	No Scaled Score	
Raw Score	13	20	
Positive Score	12	5	
Date - Nov 2004	No Scaled Score	No Scaled Score	
Raw Score	12	20	
Positive Score	13	5	

Gained Scale Score	No Scaled Score	No Scaled Score	
Gained Raw Score	1	0	
Gained Positive Score	1	0	

Test Results Summary - Case KEE2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	3mths	3
Holborn Reading Test	3mths	1
Schonell Spelling	4mths	3
Schonell Graded Dictation – Test B	No Scaled Score	1
Schonell Graded Dictation – Test C	No Scaled Score	0
Schonell Graded Dictation – Test D		

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Phonic Inventories – Case KEF2

Pre Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters			
Medial Vowels	1	8	1
Medial Vowel Digraphs		4	
Ending Consonants	1		
Ending Blends/Clusters	5	6	8
Long and Short Vowel Confusion		1	
Consonant/Sound Confusion		3	
Reversals/Transposals			
Errors with Prefixes			1
Errors with Suffixes			6
Syllabification Errors			

Post Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels		7	
Medial Vowel Digraphs		3	
Ending Consonants			
Ending Blends/Clusters	5	4	3
Long and Short Vowel Confusion			
Consonant/Sound Confusion		1	
Reversals/Transposals			
Errors with Prefixes			1
Errors with Suffixes			6
Syllabification Errors			

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Test Results – KEF2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		7yrs 11mths	9yrs 2mths	9yrs 0mths
Raw Score		29	11	40
Date - Nov 2004		8yrs 10mths	10yrs 1mths	9yrs 5mths
Raw Score		38	15	44

Gained Scale Score		11mths	9mths	5mths
Gained Raw Score		11	4	4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	7yrs 4mths	No Scaled Score	8yrs 2mths
Raw Score	7	12	15
Positive Score	18	13	20
Date - Nov 2004	8yrs 3mths	8yrs 10mths	8yrs 10mths
Raw Score	4	7	10
Positive Score	22	18	24

Gained Scale Score	11mths	No Scaled Score	8mths
Gained Raw Score	3	5	5
Gained Positive Score	4	5	14

Test Results Summary - Case KEF2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	11mths	11
Holborn Reading Test	9mths	4
Schonell Spelling	5mths	4
Schonell Graded Dictation – Test B	11mths	3
Schonell Graded Dictation – Test C	No Scaled Score	5
Schonell Graded Dictation – Test D	8mths	5

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Phonic Inventories – Case KEG2

Pre Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends/Clusters	2		
Medial Vowels	8	6	2
Medial Vowel Digraphs		6	
Ending Consonants		4	
Ending Blends/Clusters	13	15	4
Long and Short Vowel Confusion		3	
Consonant/Sound Confusion	2	6	1
Reversals/Transposals			
Errors with Prefixes			2
Errors with Suffixes			11
Syllabification Errors			1

Post Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends	1		
Medial Vowels	5	11	1
Medial Vowel Digraphs		6	
Ending Consonants		3	
Ending Blends/Clusters	10	7	3
Long and Short Vowel Confusion		2	
Consonant/Sound Confusion	2	4	2
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			7
Syllabification Errors			

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Test Results – KEG2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		7yrs 9mths	8yrs 3mths	7yrs 9mths
Raw Score		28	7	28
Date - Nov 2004		8yrs 0mths	8yrs 8mths	8yrs 2mths
Raw Score		30	9	32

Gained Scale Score		3mths	5mths	5mths
Gained Raw Score		4	2	2

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004	8yrs 4mths	6yrs 0mths	
Raw Score	6	21	
Positive Score	19	9	
Date - Nov 2004	8yrs 0mths	6yrs 6myhd	
Raw Score	7	19	
Positive Score	18	11	

Gained Scale Score	-4mths	6mths	
Gained Raw Score	-1	3	
Gained Positive Score	-1	2	

Test Results Summary - Case KEG2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	3mths	4
Holborn Reading Test	5mths	2
Schonell Spelling	5mths	2
Schonell Graded Dictation – Test B	-4mths	-1
Schonell Graded Dictation – Test C	6mths	3
Schonell Graded Dictation – Test D		

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Phonic Inventories – Case KEH2

Pre Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters	1		
Medial Vowels	1	5	
Medial Vowel Digraphs	1	5	
Ending Consonants			
Ending Blends/Clusters	3	3	
Long and Short Vowel Confusion		2	1
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			1
Errors with Suffixes			5
Syllabification Errors			5

Post Test Scores

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends	1		
Medial Vowels	1	5	
Medial Vowel Digraphs		5	
Ending Consonants		1	
Ending Blends/Clusters	1	2	
Long and Short Vowel Confusion		1	1
Consonant/Sound Confusion		1	
Reversals/Transposals			
Errors with Prefixes			1
Errors with Suffixes			3
Syllabification Errors			4

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Test Results – KEH2

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2004		9yrs 2mths	9yrs 10mths	10yrs 1mths
Raw Score		42	14	51
Date - Nov 2004		9yrs 2mths	10yrs 1mths	9yrs 9mths
Raw Score		42	15	48

Gained Scale Score		0mths	3mths	-4mths
Gained Raw Score		0	1	-3

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2004			
Raw Score	1	6	9
Positive Score	26	24	24
Date - Nov 2004			
Raw Score			
Positive Score			

Gained Scale Score			
Gained Raw Score			
Gained Positive Score			

Test Results Summary - Case KEH2

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0mths	0
Holborn Reading Test	3mths	1
Schonell Spelling	-4mths	-3
Schonell Graded Dictation – Test B		
Schonell Graded Dictation – Test C		
Schonell Graded Dictation – Test D		

Appendix 1h: Sample Group Eight

2005 pilot study
Japari Remedial School
Fulltime Remedial education (n=8)

Participant Code	Intervention Type
JKA	Treatment
JKB	Treatment
JKC	Treatment
JKD	Treatment
CRA	Treatment
CRB	Treatment
CRC	Treatment
CRD	Treatment
CRE	Treatment

Phonic Inventories – Case JKA

There are no detailed pre- and post-test Phonic Inventory scores available for participant JKA. Aggregate pre-test scores indicate that participant JKA had nine total number of errors in level one, 22 total errors in level two, and 27 total errors in level three. Post-test scores indicate that there were a total of two errors in level one, seven total errors in level two, and four total errors in level three. Participant JKA therefore made seven fewer errors in level one, 15 fewer errors in level two, and 23 fewer errors in level three of the Phonic Inventories.

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Test Results – JKA

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2005		9yrs 2mths	8yrs 0mths	8yrs 7mths
Raw Score		45	6	37
Date - Nov 2005		9yrs 3mths	9yrs 5mths	8yrs 6mths
Raw Score		46	12	36

Gained Scale Score		1mth	1yr 5mths	1mth
Gained Raw Score		1	6	1

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2005	8yrs 0mths	7yrs 4mths	7yrs 3mths
Raw Score	7	15	19
Positive Score	18	15	17
Date - Nov 2005	8yrs 6mths	8yrs 7mths	10yrs 6mths
Raw Score	2	8	5
Positive Score	15	22	27

Gained Scale Score	6mths	1yr 3mths	3yrs 3mths
Gained Raw Score	5	7	14
Gained Positive Score	7	7	10

Test Results Summary - Case JKA

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1mth	1
Holborn Reading Test	1yr 5mths	6
Schonell Spelling	1mth	1
Schonell Graded Dictation – Test B	6mths	5
Schonell Graded Dictation – Test C	1yr 3mths	7
Schonell Graded Dictation – Test D	3yrs 3mths	14

Phonic Inventories – Case JKB

There are no detailed pre- and post-test Phonic Inventory scores available for participant JKB. Aggregate pre-test scores indicate that participant JKB had 17 total number of errors in level one, 40 total errors in level two, and 32 total errors in level three. Post-test scores indicate that there were a total of five total number of errors in level one, 31 total errors in level two, and 21 total errors in level three. Participant JKB therefore made 12 fewer errors in level one, nine fewer errors in level two, and 11 fewer errors in level three of the Phonic Inventories.

Remedial Instructional Techniques: Assessing the Effectiveness of High Imagery Teaching
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Test Results – JKB

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2005		7yrs 6mths	9yrs 2mths	7yrs 7mths
Raw Score		26	11	26
Date - Nov 2005		8yrs 0mths	9yrs 5mths	8yrs 1mths
Raw Score		30	12	31

Gained Scale Score		6mths	3mths	6mths
Gained Raw Score		4	1	5

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2005	7yrs 0mths	No Scaled Score	No Scaled Score
Raw Score	11	24	28
Positive Score	14	6	10
Date - Nov 2005	8yrs 5mths	7yrs 10mths	8yrs 6mths
Raw Score	5	12	12
Positive Score	21	18	22

Gained Scale Score	1yr 5mths	No Scaled Score	No Scaled Score
Gained Raw Score	6	12	16
Gained Positive Score	7	12	12

Test Results Summary - Case JKB

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	6mths	4
Holborn Reading Test	3mths	1
Schonell Spelling	6mths	5
Schonell Graded Dictation – Test B	1yr 5mths	6
Schonell Graded Dictation – Test C	No Scaled Score	12
Schonell Graded Dictation – Test D	No Scaled Score	16

Phonic Inventories – Case JKC

There are no detailed pre- and post-test Phonic Inventory scores available for participant JKC. Aggregate pre-test scores indicate that participant JKC had 17 total number of errors in level one, 44 total errors in level two, and 33 total errors in level three. Post-test scores indicate that there were a total of 14 total number of errors in level one, 34 total errors in level two, and 25 total errors in level three. Participant JKC therefore made three fewer errors in level one, ten fewer errors in level two, and eight fewer errors in level three of the Phonic Inventories.

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Test Results – JKC

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2005		7yrs 7mths	8yrs 0mths	7yrs 0mths
Raw Score		26	6	20
Date - Nov 2005		7yrs 8mths	8yrs 3mths	7yrs 0mths
Raw Score		28	7	20

Gained Scale Score		1mth	3mths	0mths
Gained Raw Score		2	1	0

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2005	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	27	30	32
Positive Score	No Positive Score	No Positive Score	No Positive Score
Date - Nov 2005	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	20	26	29
Positive Score	No Positive Score	No Positive Score	No Positive Score

Gained Scale Score	No Scaled Score	No Scaled Score	No Scaled Score
Gained Raw Score	7	4	3
Gained Positive Score	No Positive Score	No Positive Score	No Positive Score

Test Results Summary - Case JKC

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1mth	2
Holborn Reading Test	3mths	1
Schonell Spelling	0mths	0
Schonell Graded Dictation – Test B	No Scaled Score	7
Schonell Graded Dictation – Test C	No Scaled Score	4
Schonell Graded Dictation – Test D	No Scaled Score	3

Phonic Inventories – Case JKD

There are no detailed pre- and post-test Phonic Inventory scores available for participant JKD. Aggregate pre-test scores indicate that participant JKD had 24 total number of errors in level one, 50 total errors in level two, and 40 total errors in level three. Post-test scores indicate that there were a total of 18 total number of errors in level one, 40 total errors in level two, and 31 total errors in level three. Participant JKD therefore made six fewer errors in level one, ten fewer errors in level two, and nine fewer errors in level three of the Phonic Inventories.

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Test Results – JKD

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2005		7yrs 1mth	7yrs 2mths	6yrs 5mths
Raw Score		16	2	15
Date - Nov 2005		7yrs 6mths	7yrs 7mths	6yrs 9mths
Raw Score		24	4	19

Gained Scale Score		5mths	4mths	4mths
Gained Raw Score		8	2	4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2005	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	30	33	37
Positive Score	No Positive Score	No Positive Score	No Positive Score
Date - Nov 2005	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	22	30	33
Positive Score	No Positive Score	No Positive Score	No Positive Score

Gained Scale Score	No Scaled Score	No Scaled Score	No Scaled Score
Gained Raw Score	8	3	4
Gained Positive Score	No Positive Score	No Positive Score	No Positive Score

Test Results Summary - Case JKD

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	5mths	8
Holborn Reading Test	4mths	2
Schonell Spelling	4mths	4
Schonell Graded Dictation – Test B	No Scaled Score	8
Schonell Graded Dictation – Test C	No Scaled Score	3
Schonell Graded Dictation – Test D	No Scaled Score	4

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Phonic Inventories – Case CRA

May 2005

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters			
Medial Vowels	3	8	5
Medial Vowel Digraphs		7	
Ending Consonants			
Ending Blends/Clusters	6	5	10
Long and Short Vowel Confusion		3	
Consonant/Sound Confusion	9	15	17
Reversals/Transposals		3	
Errors with Prefixes			
Errors with Suffixes			7
Syllabification Errors			

November 2005

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends			
Medial Vowels	3	6	
Medial Vowel Digraphs		6	
Ending Consonants			
Ending Blends/Clusters	1	1	
Long and Short Vowel Confusion		1	3
Consonant/Sound Confusion		10	2
Reversals/Transposals		1	
Errors with Prefixes			
Errors with Suffixes		2	
Syllabification Errors			

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Test Results – CRA

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2005		9yrs 1mth	9yrs 10mths	8yrs 3mths
Raw Score		44	14	33
Date - Nov 2005		11yrs 3mths	10yrs 6mths	9yrs 3mths
Raw Score		70	17	43

Gained Scale Score		2yrs 2mths	1yr 2mths	1yr 0mths
Gained Raw Score		26	3	10

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2005	7yrs 4mths	6yrs 9mths	6yrs 11mths
Raw Score	9	17	22
Positive Score	16	13	15
Date - Nov 2005	6yrs 11mths	7yrs 0mths	7yrs 9mths
Raw Score	10	16	18
Positive Score	15	14	18

Gained Scale Score	-0yrs 5mths	0yrs 3mths	0yrs 10mths
Gained Raw Score	-1	1	3
Gained Positive Score	-1	1	4

Test Results Summary - Case CRA

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	2yrs 2mths	26
Holborn Reading Test	1yr 2mths	3
Schonell Spelling	1yr 0mths	10
Schonell Graded Dictation – Test B	-0yrs 5mths	-1
Schonell Graded Dictation – Test C	0yrs 3mths	1
Schonell Graded Dictation – Test D	0yrs 10mths	4

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Phonic Inventories – Case CRB

May 2005

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		2	
Initial Blends/Clusters	2	2	1
Medial Vowels	1	4	
Medial Vowel Digraphs		4	
Ending Consonants		3	
Ending Blends/Clusters	2	3	1
Long and Short Vowel Confusion	1	5	2
Consonant/Sound Confusion	6	16	4
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			3
Syllabification Errors			

November 2005

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends		1	
Medial Vowels	1		
Medial Vowel Digraphs			
Ending Consonants			1
Ending Blends/Clusters		2	2
Long and Short Vowel Confusion	1		
Consonant/Sound Confusion			
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			2
Syllabification Errors			

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Test Results – CRB

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2005		9yrs 11mths	10yrs 6mths	8yrs 8mths
Raw Score		55	17	38
Date - Nov 2005		11yrs 10mths	13yrs 0mths	9yrs 2mths
Raw Score		75	28	42

Gained Scale Score		1yr 11mths	2yrs 6mths	0yrs 6mths
Gained Raw Score		20	11	4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2005	8yrs 9mths	7yrs 10mths	8yrs 0mths
Raw Score	3	12	16
Positive Score	23	18	19
Date - Nov 2005	8yrs 6mths	10yrs 0mths	9yrs 6mths
Raw Score	4	4	7
Positive Score	22	26	26

Gained Scale Score	0yrs 3mths	2yrs 2mths	1yr 6mths
Gained Raw Score	1	8	9
Gained Positive Score	-1	8	7

Test Results Summary - Case CRB

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 11mths	20
Holborn Reading Test	2yrs 6mths	11
Schonell Spelling	0yrs 6mths	4
Schonell Graded Dictation – Test B	0yrs 3mths	-1
Schonell Graded Dictation – Test C	2yrs 2mths	8
Schonell Graded Dictation – Test D	1yr 6mths	9

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Phonic Inventories – Case CRC

May 2005

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	1		
Initial Blends/Clusters	1		6
Medial Vowels	2	5	2
Medial Vowel Digraphs		3	1
Ending Consonants	1	2	3
Ending Blends/Clusters	5	7	7
Long and Short Vowel Confusion		2	3
Consonant/Sound Confusion	7	14	16
Reversals/Transposals			4
Errors with Prefixes			
Errors with Suffixes			2
Syllabification Errors			

November 2005

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends		2	
Medial Vowels	4	7	3
Medial Vowel Digraphs	1	4	1
Ending Consonants	2	1	
Ending Blends/Clusters	5	5	9
Long and Short Vowel Confusion			3
Consonant/Sound Confusion	11	16	10
Reversals/Transposals	1		1
Errors with Prefixes			
Errors with Suffixes			1
Syllabification Errors			

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Test Results – CRC

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2005		8yrs 9mths	9yrs 10mths	8yrs 8mths
Raw Score		40	14	38
Date - Nov 2005		10yrs 3mths	9yrs 10mths	8yrs 4mths
Raw Score		60	14	34

Gained Scale Score		1yr 6mths	0yrs 0mths	-0yrs 4mths
Gained Raw Score		20	0	-4

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2005	7yrs 8mths	No Scaled Score	7yrs 7mths
Raw Score	7	21	17
Positive Score	18	9	18
Date - Nov 2005	8yrs 1mth	7yrs 0mths	7yrs 9mths
Raw Score	9	16	18
Positive Score	16	14	18

Gained Scale Score	0yrs 5mths	No Scaled Score	0yrs 2mths
Gained Raw Score	-2	5	-1
Gained Positive Score	-2	5	0

Test Results Summary - Case CRC

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	1yr 6mths	20
Holborn Reading Test	0yrs 0mths	0
Schonell Spelling	-0yrs 4mths	-4
Schonell Graded Dictation – Test B	0yrs 5mths	-2
Schonell Graded Dictation – Test C	No Scaled Score	5
Schonell Graded Dictation – Test D	0yrs 2mths	-1

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Phonic Inventories – Case CRD

May 2005

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends/Clusters			1
Medial Vowels		3	1
Medial Vowel Digraphs		5	
Ending Consonants		1	1
Ending Blends/Clusters		2	2
Long and Short Vowel Confusion			2
Consonant/Sound Confusion		12	3
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			3
Syllabification Errors			

November 2005

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants		1	
Initial Blends			
Medial Vowels		1	1
Medial Vowel Digraphs		2	
Ending Consonants	1	1	
Ending Blends/Clusters		2	1
Long and Short Vowel Confusion			6
Consonant/Sound Confusion		5	
Reversals/Transposals			
Errors with Prefixes			
Errors with Suffixes			
Syllabification Errors			1

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Test Results – CRD

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2005		11yrs 8mths	13yrs 11mths	9yrs 5mths
Raw Score		74	33	45
Date - Nov 2005		12yrs 6mths	13yrs 11mths	10yrs 2mths
Raw Score		82	33	52

Gained Scale Score		0yrs 10mths	0yrs 0mths	0yrs 9mths
Gained Raw Score		8	0	7

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2005	8yrs 3mths	10yrs 0mths	9yrs 2mths
Raw Score	4	4	9
Positive Score	22	26	24
Date - Nov 2005	9yrs 2mths	10yrs 0mths	9yrs 6mths
Raw Score	2	4	7
Positive Score	25	26	26

Gained Scale Score	0yrs 11mths	0yrs 0mths	0yrs 4mths
Gained Raw Score	2	0	2
Gained Positive Score	3	0	2

Test Results Summary - Case CRD

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 10mths	8
Holborn Reading Test	0yrs 0mths	0
Schonell Spelling	0yrs 9mths	7
Schonell Graded Dictation – Test B	0yrs 11mths	2
Schonell Graded Dictation – Test C	0yrs 0mths	0
Schonell Graded Dictation – Test D	0yrs 4mths	2

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Phonic Inventories – Case CRE

May 2005

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants			
Initial Blends/Clusters			9
Medial Vowels	1	6	
Medial Vowel Digraphs		6	1
Ending Consonants	5	3	1
Ending Blends/Clusters	8	8	8
Long and Short Vowel Confusion	3	2	5
Consonant/Sound Confusion	10	17	18
Reversals/Transposals		1	1
Errors with Prefixes			
Errors with Suffixes			2
Syllabification Errors			

November 2005

Type of Error	Frequency		
	Level One	Level Two	Level Three
Initial Consonants	2	1	
Initial Blends	3	1	5
Medial Vowels	6	5	1
Medial Vowel Digraphs		8	
Ending Consonants	2	2	1
Ending Blends/Clusters	9	7	4
Long and Short Vowel Confusion	1	2	4
Consonant/Sound Confusion	17	20	15
Reversals/Transposals	2	2	
Errors with Prefixes			
Errors with Suffixes			5
Syllabification Errors			

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Test Results – CRE

Date	Age	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test
Date - May 2005		9yrs 1mth	10yrs 6mths	8yrs 6mths
Raw Score		44	17	36
Date - Nov 2005		9yrs 2mths	9yrs 10mths	8yrs 5mths
Raw Score		45	14	35

Gained Scale Score		0yrs 1mth	-1yr 4mths	-0yrs 1mth
Gained Raw Score		1	-3	-1

Date	Schonell Dictation B	Schonell Dictation C	Schonell Dictation D
Date - May 2005	7yrs 11mths	No Scaled Score	7yrs 6mths
Raw Score	6	18	19
Positive Score	20	12	17
Date - Nov 2005	No Scaled Score	No Scaled Score	No Scaled Score
Raw Score	14	17	28
Positive Score	11	13	No Scaled Score

Gained Scale Score	No Scaled Score	No Scaled Score	No Scaled Score
Gained Raw Score	-8	1	-9
Gained Positive Score	-9	1	No Scaled Score

Test Results Summary - Case CRE

Test	Gained Scaled Score	Gained Raw Score
Schonell Word Recognition	0yrs 1mth	1
Holborn Reading Test	-1yr 4mths	-3
Schonell Spelling	-0yrs 1mth	-1
Schonell Graded Dictation – Test B	No Scaled Score	-8
Schonell Graded Dictation – Test C	No Scaled Score	1
Schonell Graded Dictation – Test D	No Scaled Score	-9

Appendix 2: Holborn Reading Test

The Holborn Reading Scale contains 33 sentences that need to be read aloud. The sentences become progressively more difficult as the participant progresses through the scale. The examiner follows on his/her own copy of the test while it is being read. As soon as the participant reads four words in a single sentence incorrectly, the test is stopped. The corresponding age on the right-hand margin of the page is taken as the reading scored reading age. The scores represent the participant's reading age in years and months.

Holborn Reading Scale

1	The dog got wet and Tom had to rub him dry.	609
2	He was a very good boy to give you some of his sweets.	702
3	My sister likes me to open my book and read to her	705
4	Go away and hide behind that door where we found you just now.	707
5	Please don't let anyone spoil these nice fresh flowers.	710
6	The String had eight knots in it which I had to untie.	800
7	Wine is made from the juice of grapes which grow in warm countries.	803
8	Mary went to the grocers and bought some sugar and some syrup.	806
9	Quench your thirst by drinking a glass of our sparkling ginger ale.	808
10	The people could scarcely obtain enough food to remain healthy.	811
11	Elizabeth had her hair thoroughly combed and her fringe cut.	902
12	By stretching up, George just managed to touch the garage ceiling.	905
13	Father had a brief telephone conversation with my cousin Philip.	907
14	This coupon entitles you to a specimen piece of our delicious toffee.	910
15	The chemist could not suggest a satisfactory remedy for my headache.	1001
16	Nobody recognized Roger in his disguise as a police official.	1003
17	Leonard was engaged by the Irish Linen Association to act as their London agent.	1006
18	Judged by his photographs our nephew is certainly a peculiar character.	1009
19	The examiner was impatient when I hesitated over a difficult phrase in my reading.	1100
20	Delicate individuals should gradually be accustomed to gentle physical	1102

exercise.

- 21 The musician whose violin was interfered with has our sincere sympathy. 1105
- 22 The soloist was not in a convenient position for seeing everyone in his audience. 1108
- 23 Christopher omitted to acknowledge the receipt of Michael's annual subscription. 1110
- 24 The secretary said there had been a substantial increase in the Society's expenditure. 1201
- 25 The Borough Council decided to celebrate the occasion by organizing a gigantic sports festival. 1204
- 26 It is essential that engineering apprentices should acquire some good technical qualifications. 1206
- 27 Particulars of the careers of eminent men will be found in any good encyclopaedia or biographical dictionary 1209
- 28 Certificates of insurance will be issued to all policy-holders paying the necessary premium. 1300
- 29 The ceremony ended, approximately enough with the Choir and Orchestra joining in the National Anthem. 1302
- 30 It is both a newspaper which chronicles events and a magazine with the usual miscellaneous features. 1305
- 31 The necessity for accelerating the work of the Economic Conference was repeatedly emphasized. 1306
- 32 These documents constitute an authoritative record of a unique colonial enterprise. 1308
- 33 Psychology is a science which seems to fascinate both adult and the adolescent student. 1311

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Appendix 3: Schonell Tests

Schonell One Word Reading Test, Schonell One Word Spelling Test,
Schonell Graded Dictation Test B, C and D

Schonell One Word Reading Test (Schonell, 1952)

Time taken: approx 20 minutes

Instructions

- The child is given a copy of the words and the examiner is given his/her own.
- The child should read the words aloud from left to right.
- The examiner should mark off on a separate list, those words that are read correctly and incorrectly.
- The test is stopped when the child reads every word in a single line incorrectly.
- The raw score is obtained by tallying all the child's incorrect responses. This is then checked against the corresponding score which indicates reading-age in years and months.

Words

net	can	fun	top	rag
sat	hit	lid	cap	had
let	doll	bell	yes	then
may	tree	by	ill	egg
land	how	your	cold	talk
flower	son	seem	four	loud
ground	lowest	brain	write	amount
noise	remain	hoped	worry	dancing
damage	else	through	entered	cough
fitted	spare	daughter	edge	search
concert	domestic	topic	method	freeze
avoid	duties	recent	type	instance

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Conversion Table: Schonell One Word Reading Test					
Raw Score: No. Correct	Reading Age: Years. Months	Raw Score: No. Correct	Reading Age: Years. Months	Raw Score: No. Correct	Reading Age: Years. Months
0-1	6.0 -	34	8.4	63	10.6
2	6.0	35	8.5	64	10.7
3	6.2	36-37	8.6	65	10.8
4	6.4	38	8.7	66	10.9
5	6.5	39	8.8	67	10.10
6	6.6	40	8.9	68	11.0
7-8	6.7	41	8.10	69	11.1
9	6.8	42	8.11	70	11.3
10	6.9	43	9.0	71	11.4
11-12	6.10	44	9.1	72	11.5
13-14	6.11	45	9.2	73	11.6
15	7.0	46	9.3	74	11.8*
16	7.1	47	9.4	75	11.10
17-18	7.2	48	9.5	76	12.0
19	7.3	49-50	9.6	77	12.1
20-21	7.4	51	9.7	78	12.2
22-23	7.5	52	9.8	79	12.3
24	7.6	53	9.9	80	12.4
25-26	7.7	54	9.10	81	12.5
27	7.8	55	9.11	82	12.6
28	7.9	56	10.0	83 +	12.6 +
29	7.10	57-58	10.1	* Revised reading ages beyond 11.6 have been extrapolated from the 7 - 11.5 year age population	
30	8.0	59	10.2		
31	8.1	60	10.3		
32	8.2	61	10.4		
33	8.3	62	10.5		

Schonell One Word Spelling Test (Schonell, 1952)

Time taken: approx 20 minutes

Instructions

- The test is administered from left to right across the page. The examiner reads each word aloud, dictates the word in short sentence, and then repeats the word.
- The child then writes the words down and the examiner takes note of the child's errors as he / she is writing.
- The test is stopped as soon as the child spells all the words in a single row incorrectly.
- Scores are obtained by aggregating the number of incorrect responses, adding 50 and then dividing the by ten.

$$\frac{\sum\chi + 50}{10} = \gamma$$

Schonell One-Word Reading Test

tree	little	milk	egg	book
school	sit	frog	playing	bun
flower	road	clock	train	light
picture	think	summer	people	something
dream	downstairs	biscuit	shepherd	thirsty
crowd	sandwich	beginning	postage	island
saucer	angel	ceiling	appeared	gnome
canary	attractive	imagine	nephew	gradually
smoulder	applaud	disposal	nourished	diseased
university	orchestra	knowledge	audience	situated
physics	campaign	choir	intercede	fascinate

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forfeit	siege	recent	plausible	prophecy
colonel	soloist	systematic	slovenly	classification
genuine	institution	pivot	conscience	heroic
pneumonia	preliminary	antique	susceptible	enigma
oblivion	scintillate	satirical	sabre	beguile
terrestrial	belligerent	adamant	sepulchre	statistics
miscellaneous	procrastinate	tyrannical	evangelical	grotesque
ineradicable	judicature	preferential	homonym	fictitious
miscellaneous	procrastinate	tyrannical	evangelical	Grotesque
rescind	metamorphosis	somnambulist	bibliography	idiosyncrasy

Schonell Graded Dictation Tests, Forms B, C and D (Schonell, 1952)

Instructions:

- Each paragraph is read aloud, one short phrase (three to five words) at a time.
- The child writes as the examiner dictates and any errors that are made are tallied.
- The errors for each test corresponds to a positive score which, when compared with boy and girl averages, yields an approximate dictation-age for each test.

Test B

I spent four days at a farm in the country. I had such a nice time because the people were so good to me. One night we set out for a walk to the old church. Before we had gone half way, however, it began to rain so we had to turn back.

Test C

While the weather was fine, my aunt and uncle took me out for the day. They paid for me to go on the steamer. The river was very pretty and it was a change to see boats instead of cars. After we had passed the bridge we caught sight of the mountain, which looked so grand that we bought a picture of it.

Test D

It was a beautiful day and a large crowd attended the sports. Many ladies and gentlemen waited at the entrance to the field for hours before it opened. The boys and girls came by special train. It was a wonderful success and our school won many races. We were pleased with the result and spent a very happy time.

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Conversion Table - Errors & Positive Score			
Errors in Test			Equivalent Positive Score
Test B	Test C	Test D	
24			1
23			2
22			3
21			4
20	25		5
19	24		6
18	23		7
17	22		8
16	21		9
15	20		10
14	19		11
13	18		12
12	17	25	13
11	16	24	14
10	15	23	15
9	14	21	16
8	13	19	17
7	12	18	18
6	11	16	19
5	10	15	20
4	9	13	21
3	8	12	22
2	7	11	23
1	6	10	24
0	5	8	25
	4	7	26
	3	5	27

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	2	4	28
	1	3	29
	0	2	30
		1	31
		0	32
			33
			34

Conversion Table - Positive Score & Age		
Averages in terms of positive scores		
Age	Boys	Girls
7	14.2	15.5
8	19.5	20.9
9	24.2	25.4
10	26	28.2
11	28.2	29
12	29.2	30
13	30	31

Appendix 4: Phonic Inventories

Level 1, Level 2 and Level 3

Phonic Inventory Level 1

Time taken: approx 20 minutes

Instructions:

- Ask each child to take a clean A4 sheet of paper, fold it down the middle length ways and write their name on the top.
- Read out the first word on the list. Read a sentence containing the word. Read the word again.
- Each child writes the word down on their piece of paper, each new word underneath the last. Using the fold as a column divider, they write the words down the first column until the end of the page, and then down the next column. This is important for scoring. Also for scoring, it is important that the words are read out in order.

Words

On	Shall
Us	Cling
Pat	Chill
Bed	Cross
Got	Smell
Yes	Frost
Bun	Blunt
Stop	Spend
Pram	Smash
Ship	Stink
Glad	Chest
Chop	Thank
Skid	Quick
That	Flush
Slit	Hedge
When	Swift
Scrap	Tusks
Off	Stretch
Hens	Strong
Miss	Chimps
Match	Length
Shift	Switch
Swell	Strength
Cliff	
Block	
Grunt	

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Thick

Phonic Inventory Level 2

Time taken: approx 25 minutes

Instructions:

- Ask each child to take *another* clean A4 sheet of paper, fold it down the middle length ways and write their name on the top.
- Read out the first word on the list. Read a sentence containing the word. Read the word again
- Each child writes the word down on their piece of paper, each new word underneath the last. Using the fold as a column divider, they write the words down the first column until the end of the page, and then down the next column. This is important for scoring. Also for scoring, it is important that the words are read out in order.

Words

Cake	Oil
Day	Coin
Go	Storm
Hole	Lawn
Sky	Talk
Smile	Fern
Sea	Third
Tree	Hurt
Pain	bowl
Table	Stroll
Like	Though
Find	Turn
Boat	Dirt
Toe	Earth
We	Straw
Need	Door
Please	Roar
Die	Bird
Price	Heard
Night	Word
School	Ear
Rule	Deer
Book	Hear
Cow	Our
Loud	Flower
Crowd	Hair
Head	Spare
Far	There

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Hard
Calm
Boy

Phonic Inventory Level 3

Time taken: approx 25 minutes

Instructions:

- Ask each child to take *another* clean A4 sheet of paper, fold it down the middle length ways and write their name on the top.
- Read each word, then read a sentence containing the word. Read the word again.
- Each child writes the word down on their piece of paper, each new word underneath the last. Using the fold as a column divider, they write the words down the first column until the end of the page, and then down the next column. This is important for scoring. Also for scoring, it is important that the words are read out in order.

Words

Big	Match
Bigger	Matching
Biggest	Matched
	Matchbox
Chop	
Chopping	Quick
Chopper	Quicker
Chopped	Quickest
	Quickly
Strong	Quicksand
Strongly	
Stronger	Mark
Strongest	Market
	Supermarket
Hope	Remark
Hoping	Remarkable
Hoped	
Hopeful	Act
	Action
Play	Active
Player	Activity
Playing	React
Played	Reaction
Playful	Reactionary
Happy	
Happily	
Happiness	
Post	

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Poster
Postman
Postbox

Appendix 5: Phonic Inventories – Error Analysis Form

Phonic Inventory Assessment Form: Analysis of Phonic Errors

Date: _____

Participant: _____

Levels Administered (please circle): 1 2 3

Instructions:

- Grade each Level of the phonic inventory, making a mark in the Frequency column next to the type of error, and then detailing what the error was in the Details column.
- Once finished with all three Levels, fill in the total number of errors

Type Of Error	Frequency	Details
Initial consonants		
Initial blends/clusters		
Medial vowels		
Medial vowel digraphs		
Ending consonants		
Ending blends/clusters		
Long & short vowel confusion		
Consonant / Sound confusion		
Reversals / Transposals		
Errors with prefixes		
Errors with suffixes		
Syllabification errors		
Other errors		

Remarks: Level 1: ... errors made
 Level 2: ... errors made
 Level 3: ... errors made

Appendix 6: Biographical Questionnaire

Parental Questionnaire

1. Background Information

- 1.1 Child's Full Names _____
- 1.2 Birth Date _____ Today's Date _____
- 1.3 Address _____

_____ Tel. (h) _____
(w) _____
- 1.4 Present School _____
Grade/Standard _____
Teacher _____
- 1.5 Family Doctor _____
Family Doctor's Address _____
_____ Tel: (h) _____
(w) _____
- 1.6 Referral for Assessment made by _____

2. Physical History

- 2.1 Any unusual pregnancy or birth conditions (e.g. difficult pregnancy: pre-natal illness; birth injuries, prolonged labour, caesarean; instruments)
- 2.2 Early childhood illnesses, accidents or operations
- 2.3 Development
Age at walking _____
Age when used first words _____

Age when chained words into short sentence (e.g. Daddy car; mummy come; me go) _____

Outstanding traits as a young child (e.g. Slow or early development)

General health as a young child (e.g. Colds, fevers; childhood illnesses; high temperatures; falls; overweight or underweight)

3. **School History**

3.1 Parent's comments on school(s) attended _____

School(s) attended	In Grade	Progress and success

3.2 Any long absences from school

3.3 Comments on Child's Progress and Teaching Received at School

3.4 Child's relationship with previous teacher

Child's relationship with current teacher

3.5 Areas of school programme in which child has difficulty

3.6 Areas of school programme in which child does well

3.7 Child's special abilities (in school as well as extramurally)

4. **Scholastic Difficulties**

4.1 Nature of scholastic difficulties

4.2 When difficulties began

4.3 How and why?

4.4 Previous assessment relating to difficulties

4.5 Additional teaching, therapy or remedial work done previously with child

Type of help given

In grade

Progress made

4.6 Present difficulties

4.7 Is present school giving special help?

4.8 Of what nature?

4.9 Is parent helping?

4.10 Type of help being given by parent

4.11 Parent's perception of the cause of difficulty

5. **Child's attitudes and interests**

5.1 Does your child have many friends at school or just a few?

5.2 Name of child's best friend

5.3 Relationships with other child (please comment)

5.4 Child's attitude towards school

5.5 Involvement in sport and extra-mural activities at school

5.6 Hobbies and interests outside school

5.7 Child's special abilities and interests

6. **Parent-child and sibling relationships**

6.1 Are there other children in the family?

Name

Age

6.2 Relationships with other children in the family

6.3 By which parent is the child usually disciplined?

6.4 What form does discipline usually take?

6.5 Any difference in opinion between parents on discipline?

6.6 Father's relations with the child

6.7 Mother's relation with the child

7. **Family History**

7.1 Any unusual events during child's early years?

7.2 Father

Name _____ Age _____ Occupation _____

7.3 Mother

Name _____ Age _____ Occupation _____

7.4 Are grandparents still living?

7.5 Does child see grandparents regularly?

7.6 Other members of the family living at home

7.7 Marital status of parents'

7.8 Parent's addresses and telephone numbers

Residential Address _____ Postal address _____

Telephone Numbers (h) _____

(w) _____

Appendix 7: Imagery Questionnaire

Imagery Questionnaire

Preamble: We have been working on ways you can remember words and write them down. You have been looking at the words and trying to see them in you mind, and then writing them. Most of the time they come out right, but sometimes you make mistakes in spelling when your memory does not work properly.

To help me figure out the right way to teach you, I am going to ask you some questions about how your memory works. I would then like you to tell me what it is like when you try and remember a word.

1. When you close your eyes and look at the word in your mind, what do you see?

Probe: Discuss the appearance of the mental image of the word, leading into the next question, which provides further detail.

2. So what does the word look like in your mind?

Probe: One colour, or colours; background; particular colours of the image, etc.

3. When you see the word in your mind and say it , do you still see the word?

Probe: What does it look like; does the word go away when you say it; does it stay as strong an image or does it fade etc.

4. When you see the word in your mind and spell it out loud, does the word stat in your mind or does it go away?

Probe: Does the image disappear or fade; does it splinter into parts; do the parts disappear; does it stay as strong as the image etc

5. If the word fades or disappears in your mind when you spell it, does it come back afterwards?

Probe: How does this occur, what does it look like as it comes back etc.

6. What about when you look at all the words in the passage and check that you know then one by one. What do you see then?

Probe: Do you have an image of each word in succession; do you just see the word or words lying next to each other; colour of image; does the mind get tired etc.

7. What happens when you write down a passage? Do you still see the words in your mind?

Probe: Do you write from an image or do the words just come out; what do you do if you can't remember the word etc.

8. Do you know when a word is spelled right? Does it look different to when it is spelled wrong?

Probe: Does it look different? How does it feel when you write it? Do you check the written word against the picture in your mind etc? Take particular examples of the child's work and focus on particular words spelled right or wrong to provide detailed comment on the process of learning and checking.

Appendix 8a: Research Question 1

Step One – Hypothesis

Step Two – Assumptions

Step Three - Test Statistic Results

Step Four - Results Evaluation

Step Five - Interpretation

Research Question 1

What trends are evident from the cumulative results of exploratory studies conducted on the use of high imagery teaching techniques from 2001 to 2003?

Hypothesis	Variables	Analysis Type
1) There is a significant difference in the reading, writing and spelling results of children who received high imagery instruction as opposed to structured phonic instruction for cumulative results from studies conducted from 2001 to 2003.	Independent Variables - High imagery versus phonic (nominal) N= 39/13 Dependant Variables - Scholastic test results (6)	t-Test Decision: proceed further with analysis.

Q1 - Group Description Data

Table 1: Q1 - Aggregated Treatment versus Contrast group Results – 2001 to 2003

Test	Structured Phonic Instruction N = 13		High Imagery Instruction N = 39	
Schonell One Word Reading	Average Gains	4.85	Average Gains	9.87
Holborn Sentence Reading	Average Gains	2.69	Average Gains	4.53
Schonell Spelling	Average Gains	5.08	Average Gains	8.36
Schonell Dictation Test B	Average Gains	2	Average Gains	3.22
Schonell Dictation Test C	Average Gains	0.54	Average Gains	5.19
Schonell Dictation Test D	Average Gains	2.23	Average Gains	5.39

Table 2: Q1 - Mental Imagery Summary – 2001 to 2003

Structured Phonic Instruction (13)		High Imagery Instruction (39)	
Imagery Code	Participants	Imagery Code	Participants
1 – good ability	9	1 – good ability	33
2 - no ability	4	2 - no ability	6

Table 3: Q1 - Gender Summary – 2001 to 2003

Structured Phonic Instruction (13)		High Imagery Instruction (39)	
Gender Code	Participants	Gender Code	Participants

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1 - male	8
2 - female	5

1 - male	30
2 - female	9

Q1 - Statistical Analysis Results – t-Test: Independent Samples t-Test

1) Step One – Hypothesis

H_0 : There is no significant difference ($m_1 = m_2$)

H_A : There is a significant difference ($m_1 \neq m_2$)

The alpha level is set at $\alpha = 0.5$ and the test is a two tailed test (α of 0.025 on either tale)

2) Step Two – Assumptions

- All observations are independent of each other
- All dependant variables are measured on an interval or ratio scale
- Normality is assumed.
- Levene's Test for Equality of Variances

H_0 : $\sigma_1 = \sigma_2 = \dots \sigma_j$ / all variances are equal

H_A : $\sigma_i \neq \sigma_j$ for at least one pair (i, j) / at least one pair of variances are not equal

$\alpha = 0.5$

Table 4: Q1 - Independent Samples t-test - Levene's Test for Equality of Variances

		F	Sig.
Schonell One Word Reading Test	Equal variances assumed	4.596	.037
Holborn Reading Test	Equal variances assumed	5.117	.028
Schonell Spelling Test	Equal variances assumed	3.169	.081
Schonell Dictation Test B	Equal variances assumed	7.844	.007
Schonell Dictation Test C	Equal variances assumed	3.825	.056
Schonell Dictation Test D	Equal variances assumed	4.817	.033

- Equality of Variance cannot be assumed. Not all the p-values for independent variables are greater than 0.05 ($p > \alpha$).
 - i. Equal variance can only be assumed for the Schonell Spelling Test and the Schonell Dictation Test C ($p > \alpha$).
 - ii. Equal variance cannot be assumed for the Schonell One Word Reading Test, the Holborn Reading Test, the Schonell Graded Dictation Test B, and the Schonell Graded Dictation Test D because all have p-values less than 0.005 ($p < \alpha$).

The appropriate test statistics will therefore have to be used in the interpretation of the Independent Sample t-Test results. Where equal variance can be assumed for a variable, the corresponding t-stat “Equal variances assumed” will be used to determine significance. Where equal variances cannot be assumed for a variable, the corresponding t-stat “Equal variances cannot be assumed will be used to determine statistical significance.

3) Step Three – Test Statistic Results

Table 5: Q1 - Independent Samples t-test for Equality of Means

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Schonell One Word Reading Test	Equal variances assumed	-1.691	49	.097	-5.022	2.970	-10.992	.947
	<i>Equal variances not assumed</i>	-2.558	48.970	.014	-5.022	1.963	-8.968	-1.077

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Holborn Reading Test	Equal variances assumed	-1.676	49	.100	-1.834	1.094	-4.033	.365
	<i>Equal variances not assumed</i>	-2.221	39.315	.032	-1.834	.826	-3.504	-.164
Schonell Spelling Test	<i>Equal variances assumed</i>	-1.127	50	.265	-3.282	2.913	-9.134	2.570
	Equal variances not assumed	-1.724	49.926	.091	-3.282	1.903	-7.105	.541
Schonell Dictation Test B	Equal variances assumed	-1.315	47	.195	-1.216	.925	-3.077	.644
	<i>Equal variances not assumed</i>	-1.899	42.632	.064	-1.216	.640	-2.508	.075
Schonell Dictation Test C	<i>Equal variances assumed</i>	-3.662	48	.001	-4.651	1.270	-7.204	-2.097
	Equal variances not assumed	-4.349	30.452	.000	-4.651	1.069	-6.833	-2.468
Schonell Dictation Test D	Equal variances assumed	-2.227	44	.031	-3.163	1.421	-6.026	-.300
	<i>Equal variances not assumed</i>	-2.886	40.322	.006	-3.163	1.096	-5.378	-.949

Note: the t-Test results used for interpretation have been italicized for easy identification

4) Step Four – Results Evaluation

- a) Schonell One Word Reading Test – the results indicate that the observed mean difference (-5.022) is significant $t(48.970) = -2.558$, $p = 0.014$ ($p < \alpha$). We therefore reject H_0 in favour of H_A .
- b) Holborn Reading Test – the results indicate that the observed mean difference (-1.834) is not significant $t(39.315) = -2.221$, $p = 0.032$ ($p > \alpha$). We therefore reject H_0 in favour of H_A .
- c) Schonell Spelling Test - the results indicate that the observed mean difference (-3.282) is not significant $t(50) = -1.127$, $p = 0.265$ ($p > \alpha$). We therefore fail to reject H_0 .
- d) Schonell Graded Dictation Test B – the results indicate that the observed mean difference (-1.216) is not significant $t(42.632) = -1.899$, $p = 0.064$ ($p > \alpha$). We therefore fail to reject H_0 .
- e) Schonell Graded Dictation Test C – the results indicate that the observed mean difference (-4.651) is significant $t(48) = -3.662$, $p = 0.001$ ($p < \alpha$). We therefore reject H_0 in favour of H_A .
- f) Schonell Graded Dictation Test D - the results indicate that the observed mean difference (-3.163) is significant $t(40.332) = -2.886$, $p = 0.006$ ($p < \alpha$). We therefore reject H_0 in favour of H_A .

5) Step Five - Interpretation

Based on the results from the Independent Samples t-Test there is no visible trend that can be concluded from the cumulative results of exploratory studies conducted on the use of high imagery teaching techniques from 2001 to 2003. Hypothesis tests that sought to determine a significant difference in reading, writing and spelling results of children who received high imagery instruction as opposed to structured phonic instruction for cumulative results for 2001 to 2003 were mixed in nature and were as follows:

- No significant differences for the Schonell One Word Reading Test, the Schonell Spelling Test, and the Schonell Graded Dictation Test B were recorded.

- Significant differences for the Holborn Reading Test, the Schonell Graded Dictation Test C, and the Schonell Graded Dictation Test D were recorded.

The inconclusive natures of these results are most likely due to the small size of the aggregated sample as well as a lack of equal numbers between the experimental and contrast groups. Additional subjects would need to be included in the sample in order to analyse for any trends.

Decision: Proceed with further analysis into the effects of high imagery instruction as opposed to traditional phonological instruction.

Appendix 8b: Research Question 2a & 2b

Step One – Hypothesis

Step Two – Assumptions

Step Three - Test Statistic Results

Step Four - Results Evaluation

Step Five - Interpretation

Research Question 2a

a) Is there a difference in trends in the results in 2004 when implementation of the high imagery teaching programme varied from that taught from 2001 to 2003?

Hypothesis	Variables	Analysis Type
There is a significant difference between the cumulative results from studies conducted in 2004 and those conducted from 2001 to 2003.	<i>Independent Variables</i> - Imagery versus phonic (nominal) N= 39/13 - Years up to 2003 versus 2004 (nominal) N= 15/17 <i>Dependant Variables</i> - Scholastic test results (6)	MANOVA (If assumptions not met, two way ANOVA's for each DV) Decision: if evidence supports a separate nested (without computer) condition within the high imagery condition, remove the 2004 high imagery data from the data set

Q2a - Group Description Data

Table 6: Q2a - Aggregated Treatment versus Control Group Results – 2001 to 2003

Test	Structured Phonic Instruction N = 13		High Imagery Instruction N = 39	
Schonell One Word Reading	Average Gains	4.85	Average Gains	9.87
Holborn Sentence Reading	Average Gains	2.69	Average Gains	4.53
Schonell Spelling	Average Gains	5.08	Average Gains	8.36
Schonell Dictation Test B	Average Gains	2	Average Gains	3.22
Schonell Dictation Test C	Average Gains	0.54	Average Gains	5.19
Schonell Dictation Test D	Average Gains	2.23	Average Gains	5.39

Table 7: Q2a - Mental Imagery Summary – 2001 to 2003

Structured Phonic Instruction (13)		High Imagery Instruction (39)	
Imagery Code	Participants	Imagery Code	Participants
1 – good ability	9	1 – good ability	31
2 - no ability	4	2 - no ability	6

Table 8: Q2a - Gender Summary – 2001 to 2003

Structured Phonic Instruction (13)	High Imagery Instruction (39)
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Gender Code	Participants
1 - male	8
2 - female	5

Gender Code	Participants
1 – male	30
2 – female	9

Table 9: Q2a - Aggregated Treatment versus Control Group Results - 2004

Test	Traditional/Phonological Instruction N = 17		High Imagery Instruction N = 15	
Schonell One Word Reading	Average Gains	9.18	Average Gains	2.8
Holborn Sentence Reading	Average Gains	5.41	Average Gains	6.13
Schonell Spelling	Average Gains	7.12	Average Gains	4.93
Schonell Dictation Test B	Average Gains	1.94	Average Gains	1.93
Schonell Dictation Test C	Average Gains	3.35	Average Gains	2.71
Schonell Dictation Test D	Average Gains	2.27	Average Gains	2.64

Table 10: Q2a - Table 13: Q2a - Mental Imagery Summary – 2004

Structured Phonic Instruction (17)	
Imagery Code	Participants
1 – good ability	10
2 - no ability	7

High Imagery Instruction (15)	
Imagery Code	Participants
1 – good ability	13
2 - no ability	2

Table 11: Q2a - Gender Summary – 2004

Structured Phonic Instruction (17)	
Gender Code	Participants
1 - male	11
2 - female	6

High Imagery Instruction (15)	
Gender Code	Participants
1 – male	11
2 – female	4

Q2a - Statistical Analysis Results – MANOVA – Multiple Analyses Of Variance

1) Step One – Hypothesis

H₀: All the group mean vectors are equal, that is, they come from the same populations.

H_A: Not all group mean vectors are equal, that is, they do not all come from the same populations.

The alpha level is set at $\alpha = 5\%$

2) Step Two – Assumptions

- All observations are independent of each other
- Multivariate Normality is assumed for all sampling distributions of the dependent variables and all linear combinations of them are normal.
- Box's Test of Equity of Covariance Matrices verifies the equality of variance which satisfies the requirement that there is Homogeneity of Variance-Covariance Matrices ($p > \alpha$). $\alpha = 0.001$ which is the value typically associated with MANOVA's where the group sizes are unequal.

Table 12: Q2a - Box's Test of Equality of Covariance Matrices(a)

Box's M	132.285
F	1.655
df1	63
df2	4401.736
Sig.	.001

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + Group

- Levene's Test for Equality of Variances

$H_0: \sigma_1 = \sigma_2 = \dots \sigma_j$ / all variances are equal

$H_A: \sigma_i \neq \sigma_j$ for at least one pair (i, j) / at least one pair of variances are not equal

Table 13: Q2a - Levene's Test of Equality of Error Variances(a)

	F	df1	df2	Sig.
Schonell One Word Reading Test	2.397	3	66	.076
Holborn Reading Test	4.117	3	66	.010
Schonell Spelling Test	2.634	3	66	.057
Schonell Graded Dictation Test B	3.559	3	66	.019

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Group

Schonell Graded Dictation Test C	1.423	3	66	.244
Schonell Graded Dictation Test D	3.607	3	66	.018

- Equality of Variance cannot be assumed because not all the p-values are greater than 0.05 ($p > \alpha$).
 - i. Equal variance can only be assumed for the Schonell One Word Reading Test, The Schonell Spelling Test and the Schonell Graded Dictation Test C ($p > \alpha$).
 - ii. Equal variance cannot be assumed for the Holborn Reading Test, the Schonell Graded Dictation Test B and the Schonell Graded Dictation Test D ($p < \alpha$).

Note: The mixed nature of the results from Box's M Test and Levene's Test must be taken into consideration when interpreting the results from the MANOVA. Levene's Test is robust in the face of departures from normality and failure to meet the assumption of homogeneity of variances is not fatal to the ANOVA results in the Between-Subjects Effects Table. The ANOVA is relatively robust particularly when groups approach equal sample size. The decision is therefore to proceed with the MANOVA as the form of analysis for Question 2A.

- The Appropriate sum of square (SS) has been used. **Type IV** compensates for cells that are empty in the sample data and compares a given cell with averages from other cells that have data. The empty cells therefore do not exert any influence over the results.

3) Step Three – Test Statistic Results

Table 14: Q2a - Between-Subjects Factors

	N
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Group	1	12
	2	32
	3	15
	4	11

Table 15: Q2a - Descriptive Statistics

	Group	Mean	Std. Deviation	N
Schonell One Word Reading Test	1	5.25	3.415	12
	2	9.78	10.643	32
	3	10.20	9.987	15
	4	2.73	8.174	11
	Total	7.99	9.536	70
Holborn Reading Test	1	2.67	2.103	12
	2	4.59	3.934	32
	3	5.80	6.635	15
	4	5.91	4.230	11
	Total	4.73	4.517	70
Schonell Spelling Test	1	5.42	3.397	12
	2	8.47	10.913	32
	3	7.60	5.578	15
	4	4.27	3.636	11
	Total	7.10	8.140	70
Schonell Graded Dictation Test B	1	2.00	1.348	12
	2	3.13	2.904	32
	3	2.20	4.004	15
	4	1.82	2.562	11
	Total	2.53	2.933	70
Schonell Graded Dictation Test C	1	.50	3.060	12
	2	4.97	4.269	32
	3	3.67	4.012	15
	4	2.82	2.639	11
	Total	3.59	4.074	70
Schonell Graded Dictation Test	1	2.25	2.633	12

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D	2	5.53	4.859	32
	3	2.27	4.758	15
	4	2.64	2.203	11
	Total	3.81	4.421	70

Table 16: Q2a - Multivariate Tests(c)

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.660	19.741(a)	6.000	61.000	.000
	Wilks' Lambda	.340	19.741(a)	6.000	61.000	.000
	Hotelling's Trace	1.942	19.741(a)	6.000	61.000	.000
	Roy's Largest Root	1.942	19.741(a)	6.000	61.000	.000
Group	Pillai's Trace	.407	1.647	18.000	189.000	.052
	Wilks' Lambda	.640	1.646	18.000	173.019	.054
	Hotelling's Trace	.494	1.637	18.000	179.000	.055
	Roy's Largest Root	.296	3.112(b)	6.000	63.000	.010

a. Exact statistic

b. The statistic is an upper bound on F that yields a lower bound on the significance level.

c. Design: Intercept + Group

Table 17: Q2a - Tests of Between-Subjects Effects

Source	Dependent Variable	Type IV Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Schonell One Word Reading Test	570.685(a)	3	190.228	2.201	.096
	Holborn Reading Test	84.148(b)	3	28.049	1.399	.251
	Schonell Spelling Test	185.633(c)	3	61.878	.931	.431
	Schonell Graded Dictation Test B	21.906(d)	3	7.302	.843	.475
	Schonell Graded Dictation Test C	182.047(e)	3	60.682	4.159	.009
	Schonell Graded Dictation Test D	174.888(f)	3	58.296	3.278	.026
Intercept	Schonell One Word Reading Test	2872.140	1	2872.140	33.231	.000
	Holborn Reading Test	1322.176	1	1322.176	65.924	.000
	Schonell Spelling Test	2437.846	1	2437.846	36.679	.000
	Schonell Graded Dictation Test B	307.165	1	307.165	35.471	.000

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Group	Schonell Graded Dictation Test C	525.018	1	525.018	35.985	.000
	Schonell Graded Dictation Test D	591.165	1	591.165	33.243	.000
	Schonell One Word Reading Test	570.685	3	190.228	2.201	.096
	Holborn Reading Test	84.148	3	28.049	1.399	.251
	Schonell Spelling Test	185.633	3	61.878	.931	.431
	Schonell Graded Dictation Test B	21.906	3	7.302	.843	.475
	Schonell Graded Dictation Test C	182.047	3	60.682	4.159	.009
	Schonell Graded Dictation Test D	174.888	3	58.296	3.278	.026
Error	Schonell One Word Reading Test	5704.301	66	86.429		
	Holborn Reading Test	1323.695	66	20.056		
	Schonell Spelling Test	4386.667	66	66.465		
	Schonell Graded Dictation Test B	571.536	66	8.660		
	Schonell Graded Dictation Test C	962.938	66	14.590		
	Schonell Graded Dictation Test D	1173.698	66	17.783		
Total	Schonell One Word Reading Test	10739.000	70			
	Holborn Reading Test	2973.000	70			
	Schonell Spelling Test	8101.000	70			
	Schonell Graded Dictation Test B	1041.000	70			
	Schonell Graded Dictation Test C	2045.000	70			
	Schonell Graded Dictation Test D	2367.000	70			
Corrected Total	Schonell One Word Reading Test	6274.986	69			
	Holborn Reading Test	1407.843	69			
	Schonell Spelling Test	4572.300	69			
	Schonell Graded Dictation Test B	593.443	69			
	Schonell Graded Dictation Test C	1144.986	69			
	Schonell Graded Dictation Test D	1348.586	69			

- a. R Squared = .091 (Adjusted R Squared = .050)
- b. R Squared = .060 (Adjusted R Squared = .017)
- c. R Squared = .041 (Adjusted R Squared = -.003)
- d. R Squared = .037 (Adjusted R Squared = -.007)
- e. R Squared = .159 (Adjusted R Squared = .121)
- f. R Squared = .130 (Adjusted R Squared = .090)

4) Step Four – Results Evaluation

- a) *Multivariate Tests* - according to Wilk's Lamda (Λ) there is no significant difference between the results from 2004 and the results from 2001 to 2003 (collapsed across the six tests of reading, spelling) based on the type of intervention received. $\Lambda = 0.640$, $F(18, 173.019) = 1.646$, $p = 0.054$ ($p > \alpha$). We therefore fail to reject H_0 .
- b) *Tests of Between-Subjects Effects* – according to the results of the table the independent variable, intervention type, has a significant effect on the Schonell Graded Dictation Test C ($M = 3.59$, $SD = 4.074$), $F(3, 66) = 4.159$, $p = 0.009$ ($p < \alpha$) and the Schonell Graded Dictation Test D ($M = 3.81$, $SD = 4.421$), $F(3, 66) = 3.278$, $p = 0.026$ ($p < \alpha$). The independent variable, intervention, does not have a significant effect on the remaining dependant variables, the Schonell One Word Reading Test, the Holborn Reading Test, the Schonell Spelling Test, and the Schonell Graded Dictation Test B ($p > \alpha$).

5) Interpretation

Based on MANOVA results there is no difference in trends in the results in 2004 when implementation of the high imagery teaching programme varied from that taught from 2001 to 2003. Hypothesis testing that sought to determine a significant difference between the cumulative results from studies conducted in 2004 and those conducted in 2001 to 2003 has been demonstrated to be non-significant.

The results of the Between Subject Effects however indicate that the type of intervention has a significant effect on the results of the Schonell Graded Dictation Test C and the Schonell Graded Dictation Test D. No significant effect was registered on the Schonell One Word Reading Test, the Holborn Reading Test, the Schonell Spelling Test, and the Schonell Graded Dictation Test B

The analysis results from question 2a therefore indicate that as a whole the type of intervention high imagery intervention does not appear to have been significantly different between the aggregated results of 2001 to 2003 and the aggregate results of 2004. On an individual test score basis however there does appear to have been some measurable difference according to imagery intervention type though these are mixed in nature. The lack of clear indication either way could be attributed to: the unequal sample sizes that were present – particularly the difference in contrast group size; and the mixed nature of the experimental group where a portion of the 2004 experimental subjects did receive high mental imagery remediation in a format similar to those in 2001 to 2003.

Decision: There is no evidence to support a separate nested (without computer) condition within the high imagery condition. The 2004 data set will therefore not be removed until further analysis has been conducted that makes use of available additional sample subjects from 2005.

Research Question 2b

b) Is there a difference in trends in the results in 2004 when implementation of the high imagery teaching programme varied from that taught from 2001 to 2003 & 2005?

Hypothesis	Variables	Analysis Type
There is a significant difference between the cumulative results from studies conducted in 2004 and those conducted from 2001 to 2003 and 2005.	Independent Variables - Imagery/phonetic (nominal) N= 48/13 - Years up to 2003+2005 versus 2004 (nominal) N= 15/17 Dependant Variables - Scholastic test results (6)	MANOVA (If assumptions not met, two way ANOVA's for each DV) Decision: if evidence supports a separate nested (without computer) condition within the high imagery condition, remove the 2004 high imagery data from the data set

Q2b - Group Description Data

Table 18: Q2b - Aggregated Treatment versus Control Group Results – 2001 to 2003 + 2005

Test	Structured Instruction N = 13	Phonic	High Imagery Instruction N = 48
Schonell One Word Reading	Average Gains	4.85	Average Gains 9.89
Holborn Sentence Reading	Average Gains	2.69	Average Gains 4.11
Schonell Spelling	Average Gains	5.08	Average Gains 7.29
Schonell Dictation Test B	Average Gains	2	Average Gains 2.28
Schonell Dictation Test C	Average Gains	0.54	Average Gains 4.76
Schonell Dictation Test D	Average Gains	2.23	Average Gains 4.81

Table 19: Q2b - Mental Imagery Summary – 2001 to 2003 + 2005

Structured Phonic Instruction (13)		High Imagery Instruction (48)	
Imagery Code	Participants	Imagery Code	Participants
1 – good ability	9	1 – good ability	38
2 - no ability	4	2 - no ability	8

Table 20: Q2b - Gender Summary – 2001 to 2003 + 2005

Structured Phonic Instruction (13)		High Imagery Instruction (48)	
Gender Code	Participants	Gender Code	Participants
1 – male	8	1 – male	35
2 – female	5	2 - female	13

Table 21: Q2b - Aggregated Treatment versus Control Group Results - 2004

Test	Traditional/Phonological Instruction N = 17		High Imagery Instruction N = 15	
Schonell One Word Reading	Average Gains	9.18	Average Gains	2.8
Holborn Sentence Reading	Average Gains	5.41	Average Gains	6.13
Schonell Spelling	Average Gains	7.12	Average Gains	4.93
Schonell Dictation Test B	Average Gains	1.94	Average Gains	1.93
Schonell Dictation Test C	Average Gains	3.35	Average Gains	2.71
Schonell Dictation Test D	Average Gains	2.27	Average Gains	2.64

Table 22: Q2b - Mental Imagery Summary – 2004

Structured Phonic Instruction (17)		High Imagery Instruction (15)	
Imagery Code	Participants	Imagery Code	Participants
1 – good ability	10	1 – good ability	13
2 - no ability	7	2 - no ability	2

Table 23: Q2b - Gender Summary – 2004

Structured Phonic Instruction (17)		High Imagery Instruction (15)	
Gender Code	Participants	Gender Code	Participants
1 – male	11	1 – male	11
2 – female	6	2 - female	4

Q2b - Statistical Analysis Results – MANOVA – Multiple Analyses Of Variance

1) Step One – Hypothesis

H_0 : All the group mean vectors are equal, that is, they come from the same populations.

H_A : Not all group mean vectors are equal, that is, they do not all come from the same populations.

The alpha level is set at $\alpha = 5\%$

2) Step Two – Assumptions

- All observations are independent of each other
- Multivariate Normality is assumed for all sampling distributions of the dependent variables and all linear combinations of them are normal.
- Box's Test of Equity of Covariance Matrices verifies the equality of variance which satisfies the requirement that there is Homogeneity of Variance-Covariance Matrices ($p > \alpha$). $\alpha = 0.001$ which is the value typically associated with MANOVA's where the group sizes are unequal.

Table 24: Q2b - Box's Test of Equality of Covariance Matrices(a)

Box's M	134.920
F	1.695
df1	63
df2	4204.236
Sig.	.001

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + Group

- Levene's Test for Equality of Variances

$H_0: \sigma_1 = \sigma_2 = \dots \sigma_j$ / all variances are equal

$H_A: \sigma_i \neq \sigma_j$ for at least one pair (i, j) / at least one pair of variances are not equal

Table 25: Q2b - Levene's Test of Equality of Error Variances(a)

	F	df1	df2	Sig.
Schonell One Word Reading Test	2.677	3	75	.053

Tests the null hypothesis that the error variance of the dependent variable is equal

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Holborn Reading Test	4.093	3	75	.010	across groups. a. Design: Intercept + Group
Schonell Spelling Test	2.022	3	75	.118	
Schonell Graded Dictation Test B	2.553	3	75	.062	
Schonell Graded Dictation Test C	1.908	3	75	.136	
Schonell Graded Dictation Test D	4.195	3	75	.008	

- Equality of Variance cannot be assumed because not all the p-values are greater than 0.05 ($p > \alpha$).
 - iii. Equal variance can only be assumed for the Schonell One Word Reading Test, The Schonell Spelling Test, the Schonell Graded Dictation Test B, and the Schonell Graded Dictation Test C ($p > \alpha$).
 - iv. Equal variance cannot be assumed for the Holborn Reading Test and the Schonell Graded Dictation Test D ($p < \alpha$).

Note: The mixed nature of the results from Box's M Test and Levene's Test must be taken into consideration when interpreting the results from the MANOVA. Levene's Test is robust in the face of departures from normality and failure to meet the assumption of homogeneity of variances is not fatal to the ANOVA results in the Between-Subjects Effects Table. The ANOVA is relatively robust particularly when groups approach equal sample size.

- The Appropriate sum of square (SS) has been used. **Type IV** compensates for cells that are empty in the sample data and compares a given cell with averages from other cells that have data. The empty cells therefore do not exert any influence over the results.

3) Step Three – Test Statistic Results

Table 26: Q2b - Between-Subjects Factors

		N
Group	1	12
	2	41
	3	15
	4	11

Table 27: Q2b - Descriptive Statistics

	Group	Mean	Std. Deviation	N
Schonell One Word Reading Test	1	5.25	3.415	12
	2	9.83	10.293	41
	3	10.20	9.987	15
	4	2.73	8.174	11
	Total	8.22	9.496	79
Holborn Reading Test	1	2.67	2.103	12
	2	4.10	4.024	41
	3	5.80	6.635	15
	4	5.91	4.230	11
	Total	4.46	4.509	79
Schonell Spelling Test	1	5.42	3.397	12
	2	7.20	10.110	41
	3	7.60	5.578	15
	4	4.27	3.636	11
	Total	6.59	7.917	79
Schonell Graded Dictation Test B	1	2.00	1.348	12
	2	2.10	4.005	41
	3	2.20	4.004	15
	4	1.82	2.562	11
	Total	2.06	3.495	79
Schonell Graded Dictation Test C	1	.50	3.060	12
	2	4.54	4.528	41
	3	3.67	4.012	15

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	4	2.82	2.639	11
	Total	3.52	4.200	79
Schonell Graded Dictation Test D	1	2.25	2.633	12
	2	4.90	5.643	41
	3	2.27	4.758	15
	4	2.64	2.203	11
	Total	3.68	4.861	79

Table 28: Q2b - Multivariate Tests(c)

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.579	16.039(a)	6.000	70.000	.000
	Wilks' Lambda	.421	16.039(a)	6.000	70.000	.000
	Hotelling's Trace	1.375	16.039(a)	6.000	70.000	.000
	Roy's Largest Root	1.375	16.039(a)	6.000	70.000	.000
Group	Pillai's Trace	.371	1.692	18.000	216.000	.042
	Wilks' Lambda	.668	1.694	18.000	198.475	.043
	Hotelling's Trace	.442	1.688	18.000	206.000	.043
	Roy's Largest Root	.264	3.165(b)	6.000	72.000	.008

a Exact statistic

b The statistic is an upper bound on F that yields a lower bound on the significance level.

c Design: Intercept + Group

Table 29: Q2b - Tests of Between-Subjects Effects

Source	Dependent Variable	Type IV Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	Schonell One Word Reading Test	602.705(a)	3	200.902	2.343	.080
	Holborn Reading Test	94.009(b)	3	31.336	1.576	.202
	Schonell Spelling Test	105.900(c)	3	35.300	.554	.647
	Schonell Graded Dictation Test B	1.037(d)	3	.346	.027	.994
	Schonell Graded Dictation Test C	157.557(e)	3	52.519	3.233	.027

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	Schonell Graded Dictation Test D	127.750(f)	3	42.583	1.862	.143
Intercept	Schonell One Word Reading Test	2956.533	1	2956.533	34.482	.000
	Holborn Reading Test	1286.334	1	1286.334	64.680	.000
	Schonell Spelling Test	2259.680	1	2259.680	35.432	.000
	Schonell Graded Dictation Test B	248.268	1	248.268	19.566	.000
	Schonell Graded Dictation Test C	500.353	1	500.353	30.806	.000
	Schonell Graded Dictation Test D	547.813	1	547.813	23.952	.000
Group	Schonell One Word Reading Test	602.705	3	200.902	2.343	.080
	Holborn Reading Test	94.009	3	31.336	1.576	.202
	Schonell Spelling Test	105.900	3	35.300	.554	.647
	Schonell Graded Dictation Test B	1.037	3	.346	.027	.994
	Schonell Graded Dictation Test C	157.557	3	52.519	3.233	.027
	Schonell Graded Dictation Test D	127.750	3	42.583	1.862	.143
Error	Schonell One Word Reading Test	6430.637	75	85.742		
	Holborn Reading Test	1491.586	75	19.888		
	Schonell Spelling Test	4783.138	75	63.775		
	Schonell Graded Dictation Test B	951.646	75	12.689		
	Schonell Graded Dictation Test C	1218.165	75	16.242		
	Schonell Graded Dictation Test D	1715.339	75	22.871		
Total	Schonell One Word Reading Test	12365.000	79			
	Holborn Reading Test	3154.000	79			
	Schonell Spelling Test	8325.000	79			
	Schonell Graded Dictation Test B	1289.000	79			
	Schonell Graded Dictation Test C	2354.000	79			
	Schonell Graded Dictation Test D	2915.000	79			
Corrected	Schonell One Word Reading Test	7033.342	78			

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Total	Holborn Reading Test	1585.595	78			
	Schonell Spelling Test	4889.038	78			
	Schonell Graded Dictation Test B	952.684	78			
	Schonell Graded Dictation Test C	1375.722	78			
	Schonell Graded Dictation Test D	1843.089	78			

a R Squared = .086 (Adjusted R Squared = .049)

b R Squared = .059 (Adjusted R Squared = .022)

c R Squared = .022 (Adjusted R Squared = -.017)

d R Squared = .001 (Adjusted R Squared = -.039)

e R Squared = .115 (Adjusted R Squared = .079)

f R Squared = .069 (Adjusted R Squared = .032)

4) Step Four – Results Evaluation

c) *Multivariate Tests* - according to Wilk's Lamda (Λ) there is a significant difference between the results from 2004 and the results from 2001 to 2003 and 2005 (collapsed across the six tests of reading, spelling) based on the type of intervention received. $\Lambda = 0.668$, $F(18, 198.475) = 1.694$, $p = 0.043$ ($p < \alpha$). We therefore reject H_0 in favour of H_A .

d) *Tests of Between-Subjects Effects* – according to the results of the table the independent variable, intervention type, has a significant effect on the Schonell Graded Dictation Test C ($M = 3.52$, $SD = 4.2$), $F(3, 75) = 3.233$, $p = 0.027$ ($p < \alpha$). The independent variable, intervention, does not have a significant effect on the remaining dependant variables, the Schonell One Word Reading Test, the Holborn Reading Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, and the Schonell Graded Dictation Test D ($p > \alpha$).

5) Interpretation

Based on MANOVA results there is a difference in trends in the results in 2004 when implementation of the high imagery teaching programme varied from that

taught from 2001 to 2003 and 2005. Hypothesis testing that sought to determine a significant difference between the cumulative results from studies conducted in 2004 and those conducted in 2001 to 2003 and 2005 has been demonstrated to be significant in nature.

The results of the Between Subject Effects indicate that the type of intervention has a significant effect on the results of the Schonell Graded Dictation Test C. No significant effect was registered on the Schonell One Word Reading Test, the Holborn Reading Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, and the Schonell Graded Dictation Test D.

The analysis results from question 2b therefore indicate that as a whole the type of intervention high imagery intervention does appear to have been significantly different between the aggregate results of 2004 and the aggregated results of 2001 to 2003 and 2005. On an individual test score basis however there is a majority trend that indicates a non-measurable difference according to imagery intervention type.

Decision: There is evidence to suggest that there is a nested (without computer) condition within the high imagery condition. The 2004 high imagery data should therefore be removed from the data set where the programme was implemented differently.

Appendix 8c: Research Question 3

Step One – Hypothesis

Step Two – Assumptions

Step Three - Test Statistic Results

Step Four - Results Evaluation

Step Five - Interpretation

Research Question 3

What trends are evident from the cumulative results of studies conducted on the use of high imagery teaching techniques from 2001 to 2003 and 2005?

Hypothesis	Variables	Analysis Type
There is a significant difference between the reading, writing and spelling results of children who received high imagery teaching techniques from 2001 to 2003 and 2005 as opposed to those who received structured phonic teaching.	Independent Variables - Imagery/phonic (nominal) 2001-2003+2005exp/2001-2003 +2005ctrl N= 48/13 (Gender) 2001-2003+2005exp/2001-2003 +2005ctrl (nominal) N= 48/13 Dependant Variables - Scholastic test results (6)	MANOVA (If assumptions are not met then run individual ANOVA's for each DV) Decision: if cell sizes appear large enough, include gender as a variable

b) Was gender an influence on scholastic performance?

Hypothesis	Variables	Analysis Type
Gender plays a role in the scholastic performance of children who received high imagery instruction techniques and those that received structured phonic teaching.	Independent Variables - Imagery/phonic (nominal) 2001-2003+2005exp/2001-2003 +2005ctrl N= 48/13 (Gender) 2001-2003+2005exp/2001-2003 +2005ctrl (nominal) N= 48/13 Dependant Variables - Scholastic test results (6)	MANOVA (If assumptions are not met then run individual ANOVA's for each DV) Decision: Test to see if any co-variants influenced the results.

Q3 - Group Description Data

Table 30: Q3 - Aggregated Treatment versus Control Group Results – 2001 to 2003 & 2005

Test	Structured Instruction N = 13	Phonic N = 48
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Schonell One Word Reading	Average Gains	4.85	Average Gains	9.89
Holborn Sentence Reading	Average Gains	2.69	Average Gains	4.11
Schonell Spelling	Average Gains	5.08	Average Gains	7.29
Schonell Dictation Test B	Average Gains	2	Average Gains	2.28
Schonell Dictation Test C	Average Gains	0.54	Average Gains	4.76
Schonell Dictation Test D	Average Gains	2.23	Average Gains	4.81

Table 31: Q3 - Mental Imagery Summary – 2001 to 2003 & 2005

Structured Phonic Instruction (13)		High Imagery Instruction (48)	
Imagery Code	Participants	Imagery Code	Participants
1 – good ability	9	1 – good ability	38
2 - no ability	4	2 - no ability	8

Table 32: Q3 - Gender Summary – 2001 to 2003 & 2005

Structured Phonic Instruction (13)		High Imagery Instruction (48)	
Gender Code	Participants	Gender Code	Participants
1 – male	8	1 – male	35
2 - female	5	2 - female	13

Q3 - Statistical Analysis Results – MANOVA – Multiple Analyses Of Variance

1) Step One – Hypothesis A

H_0 : All the group mean vectors are equal, that is, they come from the same populations.

H_A : Not all group mean vectors are equal, that is, they do not all come from the same populations.

The alpha level is set at $\alpha = 0.5$

Hypothesis B

H_0 : All the gender mean vectors are equal, that is, they come from the same populations.

H_A : Not all gender mean vectors are equal, that is, they do not all come from the same populations.

The alpha level is set at $\alpha = 0$.

2) Step Two – Assumptions

- All observations are independent of each other
- Multivariate Normality is assumed for all sampling distributions of the dependent variables and all linear combinations of them are normal.
- Box's Test of Equity of Covariance Matrices verifies the equality of variance which satisfies the requirement that there is Homogeneity of Variance-Covariance Matrices ($p > \alpha$). $\alpha = 0.001$ which is the value typically associated with MANOVA's where the group sizes are unequal.

Table 33: Q3 - Box's Test of Equality of Covariance Matrices(a)

Box's M	108.778
F	1.813
df1	42
df2	1446.990
Sig.	.001

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + Group + Gender + Group * Gender

- Levene's Test for Equality of Variances

H_0 : $\sigma_1 = \sigma_2 = \dots \sigma_j$ / all variances are equal

H_A : $\sigma_i \neq \sigma_j$ for at least one pair (i, j) / at least one pair of variances are not equal

Table 34: Q3 - Levene's Test of Equality of Error Variances(a)

	F	df1	df2	Sig.
Schonell One Word Reading Test	3.023	3	49	.038
Holborn Reading Test	3.312	3	49	.028
Schonell Spelling Test	2.233	3	49	.096

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Group

Schonell Graded Dictation Test B	2.733	3	49	.054	+ Gender + Group * Gender
Schonell Graded Dictation Test C	3.062	3	49	.037	
Schonell Graded Dictation Test D	2.979	3	49	.040	

- Equality of Variance cannot be assumed because not all the p-values are greater than 0.05 ($p > \alpha$).
 - Equal variance can only be assumed for the Schonell One Word Reading Test, the Holborn Reading Test, the Schonell Graded Dictation Test C and the Schonell Graded Dictation Test D ($p > \alpha$).
 - Equal variance cannot be assumed for the Schonell Spelling Test and the Schonell Graded Dictation Test B ($p < \alpha$).

Note: The mixed nature of the results from Box's M Test and Levene's Test must be taken into consideration when interpreting the results from the MANOVA. Levene's Test is robust in the face of departures from normality and failure to meet the assumption of homogeneity of variances is not fatal to the ANOVA results in the Between-Subjects Effects Table. The ANOVA is relatively robust particularly when groups approach equal sample size.

- The Appropriate sum of square (SS) has been used. **Type IV** compensates for cells that are empty in the sample data and compares a given cell with averages from other cells that have data. The empty cells therefore do not exert any influence over the results.

3) Step Three – Test Statistic Results

Table 35: Q3 - Between-Subjects Factors

		N
Group	1	12

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	2	41
Gender	1	38
	2	15

Table 36: Q3 - Descriptive Statistics

	Group	Gender	Mean	Std. Deviation	N
Schonell One Word Reading Test	1	1	4.63	3.114	8
		2	6.50	4.123	4
		Total	5.25	3.415	12
	2	1	10.67	11.526	30
		2	7.55	5.538	11
		Total	9.83	10.293	41
	Total	1	9.39	10.592	38
		2	7.27	5.077	15
		Total	8.79	9.365	53
Holborn Reading Test	1	1	3.13	2.295	8
		2	1.75	1.500	4
		Total	2.67	2.103	12
	2	1	5.07	4.102	30
		2	1.45	2.339	11
		Total	4.10	4.024	41
	Total	1	4.66	3.850	38
		2	1.53	2.100	15
		Total	3.77	3.709	53
Schonell Spelling Test	1	1	4.38	3.204	8
		2	7.50	3.109	4
		Total	5.42	3.397	12
	2	1	8.50	11.331	30
		2	3.64	4.178	11
		Total	7.20	10.110	41
	Total	1	7.63	10.270	38
		2	4.67	4.203	15

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		Total	6.79	9.035	53
Schonell Graded Dictation Test B	1	1	1.75	1.389	8
		2	2.50	1.291	4
		Total	2.00	1.348	12
	2	1	2.53	3.246	30
		2	.91	5.612	11
		Total	2.10	4.005	41
	Total	1	2.37	2.954	38
		2	1.33	4.835	15
		Total	2.08	3.567	53
Schonell Graded Dictation Test C	1	1	1.88	1.642	8
		2	-2.25	3.594	4
		Total	.50	3.060	12
	2	1	3.93	4.177	30
		2	6.18	5.231	11
		Total	4.54	4.528	41
	Total	1	3.50	3.861	38
		2	3.93	6.100	15
		Total	3.62	4.546	53
Schonell Graded Dictation Test D	1	1	2.13	2.588	8
		2	2.50	3.109	4
		Total	2.25	2.633	12
	2	1	5.00	4.969	30
		2	4.64	7.460	11
		Total	4.90	5.643	41
	Total	1	4.39	4.694	38
		2	4.07	6.541	15
		Total	4.30	5.217	53

Table 37: Q3 - Multivariate Tests(c)

Effect		Value	F	Hypothesis df	Error df	Sig.
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Intercept	Pillai's Trace	.454	6.090(a)	6.000	44.000	.000
	Wilks' Lambda	.546	6.090(a)	6.000	44.000	.000
	Hotelling's Trace	.830	6.090(a)	6.000	44.000	.000
	Roy's Largest Root	.830	6.090(a)	6.000	44.000	.000
Group	Pillai's Trace	.319	3.437(a)	6.000	44.000	.007
	Wilks' Lambda	.681	3.437(a)	6.000	44.000	.007
	Hotelling's Trace	.469	3.437(a)	6.000	44.000	.007
	Roy's Largest Root	.469	3.437(a)	6.000	44.000	.007
Gender	Pillai's Trace	.106	.871(a)	6.000	44.000	.524
	Wilks' Lambda	.894	.871(a)	6.000	44.000	.524
	Hotelling's Trace	.119	.871(a)	6.000	44.000	.524
	Roy's Largest Root	.119	.871(a)	6.000	44.000	.524
Group * Gender	Pillai's Trace	.216	2.018(a)	6.000	44.000	.083
	Wilks' Lambda	.784	2.018(a)	6.000	44.000	.083
	Hotelling's Trace	.275	2.018(a)	6.000	44.000	.083
	Roy's Largest Root	.275	2.018(a)	6.000	44.000	.083

a. Exact statistic

b. Design: Intercept + Group + Gender + Group * Gender

Table 38: Q3 - Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Schonell One Word Reading Test	282.448(a)	3	94.149	1.078	.367
	Holborn Reading Test	129.064(b)	3	43.021	3.596	.020
	Schonell Spelling Test	245.797(c)	3	81.932	1.004	.399
	Schonell Graded Dictation Test B	22.822(d)	3	7.607	.583	.629
	Schonell Graded Dictation Test C	237.325(e)	3	79.108	4.630	.006
	Schonell Graded Dictation Test D	66.749(f)	3	22.250	.809	.495
Intercept	Schonell One Word Reading Test	1723.945	1	1723.945	19.745	.000
	Holborn Reading Test	260.141	1	260.141	21.744	.000

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	Schonell Spelling Test	1154.841	1	1154.841	14.151	.000
	Schonell Graded Dictation Test B	118.526	1	118.526	9.091	.004
	Schonell Graded Dictation Test C	190.029	1	190.029	11.123	.002
	Schonell Graded Dictation Test D	407.390	1	407.390	14.804	.000
Group	Schonell One Word Reading Test	100.607	1	100.607	1.152	.288
	Holborn Reading Test	5.428	1	5.428	.454	.504
	Schonell Spelling Test	.137	1	.137	.002	.968
	Schonell Graded Dictation Test B	1.306	1	1.306	.100	.753
	Schonell Graded Dictation Test C	220.421	1	220.421	12.902	.001
	Schonell Graded Dictation Test D	50.304	1	50.304	1.828	.183
Gender	Schonell One Word Reading Test	3.111	1	3.111	.036	.851
	Holborn Reading Test	49.818	1	49.818	4.164	.047
	Schonell Spelling Test	6.055	1	6.055	.074	.786
	Schonell Graded Dictation Test B	1.531	1	1.531	.117	.733
	Schonell Graded Dictation Test C	7.053	1	7.053	.413	.524
	Schonell Graded Dictation Test D	.000	1	.000	.000	.998
Group * Gender	Schonell One Word Reading Test	50.000	1	50.000	.573	.453
	Holborn Reading Test	10.025	1	10.025	.838	.364
	Schonell Spelling Test	127.830	1	127.830	1.566	.217
	Schonell Graded Dictation Test B	11.291	1	11.291	.866	.357
	Schonell Graded Dictation Test C	81.366	1	81.366	4.763	.034
	Schonell Graded Dictation Test D	1.093	1	1.093	.040	.843
Error	Schonell One Word Reading Test	4278.269	49	87.312		
	Holborn Reading Test	586.219	49	11.964		
	Schonell Spelling Test	3998.920	49	81.611		
	Schonell Graded Dictation Test B	638.876	49	13.038		

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	Schonell Graded Dictation Test C	837.128	49	17.084		
	Schonell Graded Dictation Test D	1348.420	49	27.519		
Total	Schonell One Word Reading Test	8658.000	53			
	Holborn Reading Test	1470.000	53			
	Schonell Spelling Test	6690.000	53			
	Schonell Graded Dictation Test B	890.000	53			
	Schonell Graded Dictation Test C	1770.000	53			
	Schonell Graded Dictation Test D	2396.000	53			
Corrected Total	Schonell One Word Reading Test	4560.717	52			
	Holborn Reading Test	715.283	52			
	Schonell Spelling Test	4244.717	52			
	Schonell Graded Dictation Test B	661.698	52			
	Schonell Graded Dictation Test C	1074.453	52			
	Schonell Graded Dictation Test D	1415.170	52			

- a. R Squared = .062 (Adjusted R Squared = .004)
- b. R Squared = .180 (Adjusted R Squared = .130)
- c. R Squared = .058 (Adjusted R Squared = .000)
- d. R Squared = .034 (Adjusted R Squared = -.025)
- e. R Squared = .221 (Adjusted R Squared = .173)
- f. R Squared = .047 (Adjusted R Squared = -.011)

4) Step Four – Results Evaluation

- a) *Multivariate Tests* - according to Wilk's Lamda (Λ) there is a significant difference between the results from 2001 to 2005 (excluding 2004) results (collapsed across the six tests of reading, spelling) based on the type of intervention received. $\Lambda = 0.681$, $F(6, 44) = 3.437$, $p = 0.007$ ($p < \alpha$). We therefore reject H_0 in favour of H_A .

According to Wilk's Lambda (Λ) there is no significant difference between the results from 2001 to 2005 (excluding 2004) results (collapsed across the six tests of reading, spelling) based on the gender of the individual. $\Lambda = 0.894$, $F(6, 44) = 0.871$, $p = 0.524$ ($p > \alpha$). We therefore fail to reject H_0 .

According to Wilk's Lambda (Λ) there is no significant difference between the results from 2001 to 2005 (excluding 2004) results (collapsed across the six tests of reading, spelling) based on the interaction of the type of intervention received and the gender of the individual $\Lambda = 0.781$, $F(6, 44) = 2.018$, $p = 0.083$ ($p > \alpha$). We therefore fail to reject H_0 .

- b) *Tests of Between-Subjects Effects* – according to the results of the table the independent variable, intervention type, has a significant effect on the Schonell Dictation Test C ($M = 3.62$, $SD = 4.546$), $F(1, 49) = 12.902$, $p = 0.001$ ($p < \tilde{\alpha}$). The independent variable, intervention type, does not have a significant effect on the remaining dependant variables, the Schonell One Word Reading Test, the Holborn Reading Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, and the Schonell Graded Dictation Test D ($p > \alpha$).

The independent variable, gender, has a significant effect on the Holborn Reading Test ($M = 3.77$, $SD = 3.709$), $F(1, 49) = 4.164$, $p = 0.047$ ($p < \tilde{\alpha}$). The independent variable, gender, does not have a significant effect on the remaining dependant variables, the Schonell One Word Reading Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, the Schonell Graded Dictation Test C, and the Schonell Graded Dictation Test D ($p > \alpha$).

The interaction of the independent variables, intervention type and gender, has a significant effect on the Schonell Dictation Test C ($M = 3.62$, $SD = 4.546$), $F(1, 49) = 4.763$, $p = 0.034$ ($p < \alpha$). The interaction of the independent variables, intervention type and gender, do not have a significant effect on the remaining dependant variables, the Schonell One Word Reading Test, the Holborn Reading

Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, and the Schonell Graded Dictation Test D ($p > \alpha$).

5) Interpretation

Question 1: Based on MANOVA results there is a trend that describes a difference in the cumulative results of studies conducted on the use of high imagery teaching techniques from 2001 to 2003 and 2005. Hypothesis testing determined a significant difference between the reading, writing and spelling results of children who received high imagery teaching techniques as opposed to those who received structured phonic teaching.

The results of Between Subject Effects indicate that the type of intervention has a significant effect on the Schonell Dictation Test C but non on the Schonell One Word Reading Test, the Holborn Reading Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, and the Schonell Graded Dictation Test D.

The analysis results from question 3a therefore indicate that as a whole the type of intervention appears to have been significantly different for the aggregate results of 2001 to 2003 and 2005. On an individual test score basis however a significant difference was only recorded one of the test instrument scores (the remainder testing non-significant). Therefore what can be concluded from these results is that high imagery instruction as conducted in the Targeted Revisualisation Programme has a significant overall improvement effect on reading, writing and spelling skills but as non-significant on an individual item basis.

Question 2: Based on MANOVA results there is no trend that would indicate the gender has an influence on scholastic performance. Hypothesis testing to determine whether gender plays a role in the success of the remediation process indicates that there is no significant role evident.

The results of Between Subjects Effects indicates that gender has a significant effect on reading ability as measured by the Holborn Reading Scale, but has non on the remaining tests, the Schonell One Word Reading Test, the Holborn Reading Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, and the Schonell Graded Dictation Test D.

The analysis results from question 3b therefore indicate that gender for the main part has no effect on the improvements a child will make in any remediation strategy but does appear to be a factor that plays a part in the gains a child makes for reading.

Decision: Gender should potentially be excluded as a future variable in analysis because the results of question 3b indicate that it has no significant influence on the results obtained. Gender as a variable will be further investigated in question 4.

Appendix 8d: Research Question 4

Step One – Hypothesis

Step Two – Assumptions

Step Three - Test Statistic Results

Step Four - Results Evaluation

Step Five - Interpretation

Research Question 4

What trends are evident from the cumulative results of studies conducted on the use of high imagery teaching techniques from 2001 to 2005 (including 2004 results that received standard TRP remediation)?

Hypothesis	Variables	Analysis Type
There is a significant difference between the reading, writing and spelling results of children who received high imagery teaching techniques from 2001 to 2005 as opposed to those who received structured phonic teaching (including 2004 participants that received standard TRP remediation).	Independent Variables - Imagery/phonic (nominal) 2001-2005exp/2001 -2005ctrl N= 63/30 (Gender) 2001-2005exp/2001 - 2005ctrl (nominal) N= 63/30 Dependant Variables - Scholastic test results (6)	MANOVA (If assumptions are not met then run individual ANOVA's for each DV) Decision: if cell sizes appear large enough, include gender as a variable

b) Was gender an influence on scholastic performance?

Hypothesis	Variables	Analysis Type
Gender plays a role in the scholastic performance of children who received high imagery instruction techniques and those that received structured phonic teaching.	Independent Variables - Imagery/phonic (nominal) 2001-2005exp/2001 -2005ctrl N= 63/30 (Gender) 2001-2005exp/2001 - 2005ctrl (nominal) N= 63/30 Dependant Variables - Scholastic test results (6)	MANOVA (If assumptions are not met then run individual ANOVA's for each DV) Decision: test to see if any co-variants influenced the results.

Q4 - Group Description Data

Table 39: Q4 - Aggregated Treatment versus Control Group Results – 2001 to 2005 (including 2004)

Test	Structured	Phonic	High Imagery Instruction
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	Instruction N = 30		N = 52	
Schonell One Word Reading	Average Gains	7.3	Average Gains	9.35
Holborn Sentence Reading	Average Gains	4.23	Average Gains	4.37
Schonell Spelling	Average Gains	6.23	Average Gains	7.35
Schonell Dictation Test B	Average Gains	1.97	Average Gains	2.34
Schonell Dictation Test C	Average Gains	2.13	Average Gains	4.76
Schonell Dictation Test D	Average Gains	2.25	Average Gains	4.72

Table 40: Q4 - Mental Imagery Summary – 2003 to 2005 (including 2004)

Structured Phonic Instruction (30)		High Imagery Instruction (52)	
Imagery Code	Participants	Imagery Code	Participants
1 – good ability	19	1 – good ability	41
2 - no ability	11	2 - no ability	9

Table 41: Q4 - Gender Summary – 2001 to 2005 (including 2004)

Structured Phonic Instruction (30)		High Imagery Instruction (52)	
Gender Code	Participants	Gender Code	Participants
1 – male	19	1 – male	37
2 - female	11	2 - female	15

Q4 - Statistical Analysis Results – MANOVA – Multiple Analyses Of Variance

1) Step One – Hypothesis A

H₀: All the group mean vectors are equal, that is, they come from the same populations.

H_A: Not all group mean vectors are equal, that is, they do not all come from the same populations.

The alpha level is set at $\alpha = 0.5$

Hypothesis B

H₀: All the gender mean vectors are equal, that is, they come from the same populations.

H_A : Not all gender mean vectors are equal, that is, they do not all come from the same populations.

The alpha level is set at $\alpha = 0.5$

2) Step Two – Assumptions

- All observations are independent of each other
- Multivariate Normality is assumed for all sampling distributions of the dependent variables and all linear combinations of them are normal.
- Box's Test of Equity of Covariance Matrices verifies the equality of variance which satisfies the requirement that there is Homogeneity of Variance-Covariance Matrices ($p > \alpha$). $\alpha = 0.001$ which is the value typically associated with MANOVA's where the group sizes are unequal.

Table 42: Q4 - Box's Test of Equality of Covariance Matrices (a)

Box's M	126.083
F	1.516
df1	63
df2	2576.045
Sig.	.006

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + Group + Gender + Group * Gender

- Levene's Test for Equality of Variances

H_0 : $\sigma_1 = \sigma_2 = \dots \sigma_j$ / all variances are equal

H_A : $\sigma_i \neq \sigma_j$ for at least one pair (i, j) / at least one pair of variances are not equal

Table 43: Q4 - Levene's Test of Equality of Error Variances(a)

	F	df1	df2	Sig.
Schonell One Word Reading Test	2.293	3	65	.086
Holborn Reading Test	.393	3	65	.759
Schonell Spelling Test	2.432	3	65	.073

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Group

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Schonell Graded Dictation Test B	1.019	3	65	.390	+ Gender + Group * Gender
Schonell Graded Dictation Test C	.903	3	65	.445	
Schonell Graded Dictation Test D	2.182	3	65	.099	

- Levene's test for Equality of Error Variances reveals that the variance of each dependant variable is similar. All P-values > 0.05 ($p > \alpha$).
- The Appropriate sum of square (SS) has been used. **Type IV** compensates for cells that are empty in the sample data and compares a given cell with averages from other cells that have data. The empty cells therefore do not exert any influence over the results.

3) Step Three – Test Statistic Results

Table 44: Q4 - Between-Subjects Factors

		N
Group	1	27
	2	42
Gender	1	49
	2	20

Table 45: Q4 - Descriptive Statistics

	Group	Gender	Mean	Std. Deviation	N
Schonell Word Recognition Test	1	1	8.95	9.003	19
		2	5.75	4.950	8
		Total	8.00	8.057	27
	2	1	10.67	11.526	30
		2	7.33	5.331	12
		Total	9.71	10.194	42

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	Total	1	10.00	10.553	49
		2	6.70	5.110	20
		Total	9.04	9.391	69
Holborn Reading Test	1	1	4.68	5.697	19
		2	3.75	4.496	8
		Total	4.41	5.301	27
	2	1	5.07	4.102	30
		2	2.33	3.774	12
		Total	4.29	4.157	42
	Total	1	4.92	4.730	49
		2	2.90	4.025	20
		Total	4.33	4.601	69
Schonell Spelling Test	1	1	6.21	5.255	19
		2	7.63	3.503	8
		Total	6.63	4.781	27
	2	1	8.50	11.331	30
		2	4.33	4.658	12
		Total	7.31	10.013	42
	Total	1	7.61	9.445	49
		2	5.65	4.452	20
		Total	7.04	8.325	69
Schonell Graded Dictation Test B	1	1	2.11	3.195	19
		2	2.13	2.949	8
		Total	2.11	3.068	27
	2	1	2.53	3.246	30
		2	1.00	5.360	12
		Total	2.10	3.956	42
	Total	1	2.37	3.200	49
		2	1.45	4.489	20
		Total	2.10	3.610	69
Schonell Graded Dictation Test C	1	1	3.21	3.706	19
		2	.00	3.586	8

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	2	Total	2.26	3.899	27
		1	3.93	4.177	30
		2	6.25	4.993	12
		Total	4.60	4.489	42
	Total	1	3.65	3.977	49
		2	3.75	5.389	20
		Total	3.68	4.391	69
Schonell Graded Dictation Test D	1	1	2.74	3.769	19
		2	1.13	4.190	8
		Total	2.26	3.889	27
	2	1	5.00	4.969	30
		2	4.33	7.190	12
		Total	4.81	5.606	42
	Total	1	4.12	4.635	49
		2	3.05	6.245	20
		Total	3.81	5.129	69

Table 46: Q4 - Multivariate Tests(b)

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.587	14.242(a)	6.000	60.000	.000
	Wilks' Lambda	.413	14.242(a)	6.000	60.000	.000
	Hotelling's Trace	1.424	14.242(a)	6.000	60.000	.000
	Roy's Largest Root	1.424	14.242(a)	6.000	60.000	.000
Group	Pillai's Trace	.225	2.908(a)	6.000	60.000	.015
	Wilks' Lambda	.775	2.908(a)	6.000	60.000	.015
	Hotelling's Trace	.291	2.908(a)	6.000	60.000	.015
	Roy's Largest Root	.291	2.908(a)	6.000	60.000	.015
Gender	Pillai's Trace	.048	.509(a)	6.000	60.000	.799
	Wilks' Lambda	.952	.509(a)	6.000	60.000	.799
	Hotelling's Trace	.051	.509(a)	6.000	60.000	.799
	Roy's Largest Root	.051	.509(a)	6.000	60.000	.799

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Group * Gender	Pillai's Trace	.185	2.269(a)	6.000	60.000	.049
	Wilks' Lambda	.815	2.269(a)	6.000	60.000	.049
	Hotelling's Trace	.227	2.269(a)	6.000	60.000	.049
	Roy's Largest Root	.227	2.269(a)	6.000	60.000	.049

a Exact statistic

b Design: Intercept + Group + Gender + Group * Gender

Table 47: Q4 - Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Schonell One Word Reading Test	201.089(a)	3	67.030	.752	.525
	Holborn Reading Test	69.195(b)	3	23.065	1.094	.358
	Schonell Spelling Test	167.670(c)	3	55.890	.799	.499
	Schonell Graded Dictation Test B	20.159(d)	3	6.720	.504	.681
	Schonell Graded Dictation Test C	193.711(e)	3	64.570	3.757	.015
	Schonell Graded Dictation Test D	125.325(f)	3	41.775	1.633	.190
Intercept	Schonell One Word Reading Test	3632.770	1	3632.770	40.742	.000
	Holborn Reading Test	851.932	1	851.932	40.416	.000
	Schonell Spelling Test	2416.692	1	2416.692	34.561	.000
	Schonell Graded Dictation Test B	204.804	1	204.804	15.370	.000
	Schonell Graded Dictation Test C	609.570	1	609.570	35.463	.000
	Schonell Graded Dictation Test D	591.620	1	591.620	23.121	.000
Group	Schonell One Word Reading Test	37.062	1	37.062	.416	.521
	Holborn Reading Test	3.634	1	3.634	.172	.679
	Schonell Spelling Test	3.413	1	3.413	.049	.826
	Schonell Graded Dictation Test B	1.650	1	1.650	.124	.726
	Schonell Graded Dictation Test C	165.207	1	165.207	9.611	.003
	Schonell Graded Dictation Test D	101.724	1	101.724	3.975	.050

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Gender	Schonell One Word Reading Test	144.921	1	144.921	1.625	.207
	Holborn Reading Test	45.705	1	45.705	2.168	.146
	Schonell Spelling Test	25.738	1	25.738	.368	.546
	Schonell Graded Dictation Test B	7.785	1	7.785	.584	.447
	Schonell Graded Dictation Test C	2.715	1	2.715	.158	.692
	Schonell Graded Dictation Test D	17.641	1	17.641	.689	.409
Group * Gender	Schonell One Word Reading Test	.063	1	.063	.001	.979
	Holborn Reading Test	10.999	1	10.999	.522	.473
	Schonell Spelling Test	105.842	1	105.842	1.514	.223
	Schonell Graded Dictation Test B	8.196	1	8.196	.615	.436
	Schonell Graded Dictation Test C	103.806	1	103.806	6.039	.017
	Schonell Graded Dictation Test D	3.036	1	3.036	.119	.732
Error	Schonell One Word Reading Test	5795.781	65	89.166		
	Holborn Reading Test	1370.139	65	21.079		
	Schonell Spelling Test	4545.200	65	69.926		
	Schonell Graded Dictation Test B	866.131	65	13.325		
	Schonell Graded Dictation Test C	1117.275	65	17.189		
	Schonell Graded Dictation Test D	1663.226	65	25.588		
Total	Schonell One Word Reading Test	11640.000	69			
	Holborn Reading Test	2735.000	69			
	Schonell Spelling Test	8136.000	69			
	Schonell Graded Dictation Test B	1191.000	69			
	Schonell Graded Dictation Test C	2246.000	69			
	Schonell Graded Dictation Test D	2791.000	69			
Corrected Total	Schonell One Word Reading Test	5996.870	68			
	Holborn Reading Test	1439.333	68			
	Schonell Spelling Test	4712.870	68			

	Schonell Graded Dictation Test B	886.290	68			
	Schonell Graded Dictation Test C	1310.986	68			
	Schonell Graded Dictation Test D	1788.551	68			

a R Squared = .034 (Adjusted R Squared = -.011)

b R Squared = .048 (Adjusted R Squared = .004)

c R Squared = .036 (Adjusted R Squared = -.009)

d R Squared = .023 (Adjusted R Squared = -.022)

e R Squared = .148 (Adjusted R Squared = .108)

f R Squared = .070 (Adjusted R Squared = .027)

4) Step Four – Results Evaluation

- a) *Multivariate Tests* - according to Wilk's Lamda (Λ) there is a significant difference between the results from 2001 to 2005 (including 2004 participants that received standard TRP remediation) results (collapsed across the six tests of reading, spelling) based on the type of intervention received. $\Lambda = 0.775$, $F(6, 60) = 2.908$, $p = 0.015$ ($p < \alpha$). We therefore reject H_0 in favour of H_A .

According to Wilk's Lamda (Λ) there is no significant difference between the results from 2001 to 2005 (including 2004 participants that received standard TRP remediation) results (collapsed across the six tests of reading, spelling) based on the gender of the individual. $\Lambda = 0.952$, $F(6, 60) = 0.509$, $p = 0.799$ ($p > \alpha$). We therefore fail to H_0 .

According to Wilk's Lamda (Λ) there is a significant difference between the results from 2001 to 2005 (including 2004 participants that received standard TRP remediation) results (collapsed across the six tests of reading, spelling) based on the interaction of the type of intervention received and the gender of the individual $\Lambda = 0.815$, $F(6, 60) = 2.269$, $p = 0.049$ ($p < \alpha$). We therefore reject H_0 in favour of H_A .

- b) *Tests of Between-Subjects Effects* – according to the results of the table the independent variable, intervention type, has a significant effect on the Schonell Dictation Test C ($M = 3.68$, $SD = 4.391$), $F(1, 65) = 9.611$, $p = 0.003$ ($p < \alpha$). The independent variable, intervention type, does not have a significant effect on the remaining dependant variables, the Schonell One Word Reading Test, the Holborn Reading Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, and the Schonell Graded Dictation Test D ($p > \alpha$).

The independent variable, gender, has no significant effect on the dependant variables, the Schonell One Word Reading Test, the Holborn Reading Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, the Schonell Graded Dictation Test C, and the Schonell Graded Dictation Test D ($p > \alpha$).

The interaction of the independent variables, intervention type and gender, has a significant effect on the Schonell Dictation Test C ($M = 3.68$, $SD = 4.391$), $F(1, 65) = 6.039$, $p = 0.017$ ($p < \tilde{\alpha}$). The interaction of the independent variables, intervention type and gender, do not have a significant effect on the remaining dependant variables, the Schonell One Word Reading Test, the Holborn Reading Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, and the Schonell Graded Dictation Test D ($p > \alpha$).

5) Interpretation

Question 1: Based on MANOVA results there is a trend that describes a difference in the cumulative results of studies conducted on the use of high imagery teaching techniques from 2001 to 2005 (including 2004 participants that received standard TRP remediation). Hypothesis testing determined a significant difference between the reading, writing and spelling results of children who received high imagery teaching techniques as opposed to those who received structured phonic teaching.

The results of Between Subject Effects indicate that the type of intervention has a significant effect on the Schonell Dictation Test C but not on the Schonell One Word Reading Test, the Holborn Reading Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, and the Schonell Graded Dictation Test D.

The analysis results from question 4a therefore indicate that as a whole the type of intervention appears to have been significantly different for the aggregate results for 2001 to 2005 (including 2004 participants that received standard TRP remediation). On an individual test score basis however a significant difference was only recorded one of the test instrument scores (the remainder testing non-significant). Therefore what can be concluded from these results is that high imagery instruction as conducted in the Targeted Revisualisation Programme has a significant overall improvement effect on reading, writing and spelling skills but as non-significant on an individual item basis.

Question 2: Based on MANOVA results there is no trend that indicates that gender as a separate variable has an influence on scholastic performance. Hypothesis testing to determine whether gender plays a role in the success of the remediation process indicates that there is no significant role evident.

However MANOVA results indicate that gender and intervention type combined have an influence on scholastic performance. Hypothesis testing to determine whether gender and intervention type plays a role in the success of the remediation process indicates that there is a significant role evident.

The results of Between Subject Effects indicate that gender has no significant effect on the Schonell One Word Reading Test, the Holborn Reading Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, Schonell Dictation Test C, and the Schonell Graded Dictation Test D. When gender interacts with intervention type however there is a significant effect on the Schonell Graded Dictation Test C.

The analysis results from question 4b therefore indicate that gender for the main part has no effect on the improvements a child will make in any remediation strategy.

Decision: Gender will be excluded as a future variable in analysis. As a lone variable it has been demonstrated to have no significant effect on scholastic performance. Gender does appear to exert an influence when in combination with intervention type but the combinatory effect would appear to be largely due to the influence exerted by intervention type rather than gender itself.

Appendix 8e: Research Question 5

Step One – Hypothesis

Step Two – Assumptions

Step Three - Test Statistic Results

Step Four - Results Evaluation

Step Five - Interpretation

Research Question 5

Does the extent of a child's deficits in English reading and spelling, as determined by the difference between his or her chronological age and reading and spelling ages, influence the gains made in high imagery instruction and structured phonic instruction?

Hypothesis	Variables	Analysis Type
There is a relationship between the extent of the children's deficits in English reading and spelling, as determined by the difference between their chronological age and reading and spelling ages, and gains made in high imagery instruction and structured phonic instruction	Independent Variables - High imagery/phonic. Pre-test/post-test. N = 63/30 Dependant Variables - Scholastic test results (6) Covariate: Difference scores (Age equivalent score minus actual score at pre-test) for scholastic test results	MANCOVA (If assumptions are not met then run individual ANCOVA's for each DV)

Q5 - Group Description Data

Table 48: Q5 - Aggregated Treatment versus Control Group Results – 2001 to 2005

Test	Structured Instruction N = 30	Phonic	High Imagery Instruction N = 52	
Schonell One Word Reading	Average Gains	7.3	Average Gains	9.35
Holborn Sentence Reading	Average Gains	4.23	Average Gains	4.37
Schonell Spelling	Average Gains	6.23	Average Gains	7.35
Schonell Dictation Test B	Average Gains	1.97	Average Gains	2.34
Schonell Dictation Test C	Average Gains	2.13	Average Gains	4.76
Schonell Dictation Test D	Average Gains	2.25	Average Gains	4.72

Table 49: Q5 - Mental Imagery Summary – 2001 to 2005

Structured Phonic Instruction (30)		High Imagery Instruction (52)	
Imagery Code	Participants	Imagery Code	Participants
1	19	1	41

2	11
---	----

2	9
---	---

Table 50: Q5 - Gender Summary – 2001 to 2005

Structured Phonic Instruction (30)	
Gender Code	Participants
1	19
2	11

High Imagery Instruction (52)	
Gender Code	Participants
1	37
2	15

Q5 - Statistical Analysis Results – MANCOVA – Multiple Analyses Of Covariance

1) Step One – Hypothesis A

H_0 : All the group mean vectors are equal, that is, they come from the same populations.

H_A : Not all group mean vectors are equal, that is, they do not all come from the same populations.

The alpha level is set at $\alpha = 0.5$

2) Step Two – Assumptions

- All observations are independent of each other
- Multivariate Normality is assumed for all sampling distributions of the dependant variables and all linear combinations of them are normal.
- Box's Test of Equity of Covariance Matrices verifies the equality of variance which satisfies the requirement that there is Homogeneity of Variance-Covariance Matrices ($p > \alpha$). $\alpha = 0.001$ which is the value typically associated with MANCOVA's where the group sizes are unequal.

Table 51: Q5 - Box's Test of Equality of Covariance Matrices (a)

Box's M	47.442
F	2.024
df1	21
df2	11395.883

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a Design: Intercept + Mental Age Difference

Sig.	.004	Schonell One Word Reading Test + Mental Age Difference Schonell Spelling Test + Group
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- Levene's Test for Equality of Variances

$H_0: \sigma_1 = \sigma_2 = \dots \sigma_j$ / all variances are equal

$H_A: \sigma_i \neq \sigma_j$ for at least one pair (i, j) / at least one pair of variances are not equal

Table 52: Q5 - Levene's Test of Equality of Error Variances(a)

	F	df1	df2	Sig.
Schonell One Word Reading Test	.759	1	66	.387
Holborn Reading Test	.478	1	66	.492
Schonell Spelling Test	1.239	1	66	.270
Schonell Graded Dictation Test B	.639	1	66	.427
Schonell Graded Dictation Test C	.587	1	66	.446
Schonell Graded Dictation Test D	2.490	1	66	.119

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Mental Age Difference Schonell One Word Reading Test + Mental Age Difference Schonell Spelling Test + Group

- Levene's Test for Equality of Error Variances reveals that the variance of each dependant variable is similar. All P-values > 0.05 ($p > \alpha$).
- The Appropriate sum of square (SS) has been used. Type IV compensates for cells that are empty in the sample data and compares a given cell with averages from other cells that have data. The empty cells therefore do not exert any influence over the results.

3) Step Three – Test Statistic Results

Table 53: Q5 - Between-Subjects Factors

	N
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Group	1	27
	2	41

Table 54: Q5 - Descriptive Statistics

	Group	Mean	Std. Deviation	N
Schonell One Word Reading Test	1	8.00	8.057	27
	2	9.88	10.264	41
	Total	9.13	9.431	68
Holborn Reading Test	1	4.41	5.301	27
	2	4.37	4.176	41
	Total	4.38	4.617	68
Schonell Spelling Test	1	6.63	4.781	27
	2	7.49	10.070	41
	Total	7.15	8.342	68
Schonell Graded Dictation Test B	1	2.11	3.068	27
	2	2.12	4.001	41
	Total	2.12	3.635	68
Schonell Graded Dictation Test C	1	2.26	3.899	27
	2	4.37	4.288	41
	Total	3.53	4.237	68
Schonell Graded Dictation Test D	1	2.26	3.889	27
	2	4.61	5.522	41
	Total	3.68	5.041	68

Table 55: Q5 - Multivariate Tests(b)

Effect		Value	F	Hypothesis df	Error df	Sig.
Intercept	Pillai's Trace	.080	.849(a)	6.000	59.000	.537
	Wilks' Lambda	.920	.849(a)	6.000	59.000	.537
	Hotelling's Trace	.086	.849(a)	6.000	59.000	.537
	Roy's Largest Root	.086	.849(a)	6.000	59.000	.537
Mental Age	Pillai's Trace	.111	1.224(a)	6.000	59.000	.307

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Difference Schonell One Word Reading Test	Wilks' Lambda	.889	1.224(a)	6.000	59.000	.307
	Hotelling's Trace	.124	1.224(a)	6.000	59.000	.307
	Roy's Largest Root	.124	1.224(a)	6.000	59.000	.307
Mental Age Difference Schonell Spelling Test	Pillai's Trace	.097	1.053(a)	6.000	59.000	.401
	Wilks' Lambda	.903	1.053(a)	6.000	59.000	.401
	Hotelling's Trace	.107	1.053(a)	6.000	59.000	.401
	Roy's Largest Root	.107	1.053(a)	6.000	59.000	.401
Group	Pillai's Trace	.131	1.480(a)	6.000	59.000	.201
	Wilks' Lambda	.869	1.480(a)	6.000	59.000	.201
	Hotelling's Trace	.150	1.480(a)	6.000	59.000	.201
	Roy's Largest Root	.150	1.480(a)	6.000	59.000	.201

a Exact statistic

b Design: Intercept + Mental Age Difference Schonell One Word Reading Test + Mental Age Difference Schonell Spelling Test + Group

Table 56: Q5 - Tests of Between-Subjects Effects

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	Schonell One Word Reading Test	1175.302(a)	3	391.767	5.240	.003
	Holborn Reading Test	97.726(b)	3	32.575	1.567	.206
	Schonell Spelling Test	209.261(c)	3	69.754	1.002	.398
	Schonell Graded Dictation Test B	11.095(d)	3	3.698	.271	.846
	Schonell Graded Dictation Test C	82.943(e)	3	27.648	1.580	.203
	Schonell Graded Dictation Test D	93.949(f)	3	31.316	1.246	.301
Intercept	Schonell One Word Reading Test	14.465	1	14.465	.193	.662

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	Holborn Reading Test	11.149	1	11.149	.536	.467
	Schonell Spelling Test	46.158	1	46.158	.663	.418
	Schonell Graded Dictation Test B	7.186	1	7.186	.526	.471
	Schonell Graded Dictation Test C	36.243	1	36.243	2.071	.155
	Schonell Graded Dictation Test D	96.953	1	96.953	3.857	.054
Mental Age Difference	Schonell One Word Reading Test	399.621	1	399.621	5.346	.024
Schonell One Word Reading Test	Holborn Reading Test	2.602	1	2.602	.125	.725
	Schonell Spelling Test	2.533	1	2.533	.036	.849
	Schonell Graded Dictation Test B	.327	1	.327	.024	.877
	Schonell Graded Dictation Test C	.406	1	.406	.023	.879
	Schonell Graded Dictation Test D	3.352	1	3.352	.133	.716
Mental Age Difference	Schonell One Word Reading Test	100.975	1	100.975	1.351	.249
Schonell Spelling Test	Holborn Reading Test	78.385	1	78.385	3.771	.057
	Schonell Spelling Test	150.072	1	150.072	2.157	.147
	Schonell Graded Dictation Test B	5.414	1	5.414	.396	.531
	Schonell Graded Dictation Test C	4.973	1	4.973	.284	.596
	Schonell Graded Dictation Test D	2.985	1	2.985	.119	.732
Group	Schonell One Word Reading Test	87.265	1	87.265	1.167	.284
	Holborn Reading Test	.006	1	.006	.000	.987
	Schonell Spelling Test	14.723	1	14.723	.212	.647

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	Schonell Graded Dictation Test B	.031	1	.031	.002	.962
	Schonell Graded Dictation Test C	74.292	1	74.292	4.245	.043
	Schonell Graded Dictation Test D	90.742	1	90.742	3.610	.062
Error	Schonell One Word Reading Test	4784.506	64	74.758		
	Holborn Reading Test	1330.333	64	20.786		
	Schonell Spelling Test	4453.269	64	69.582		
	Schonell Graded Dictation Test B	873.964	64	13.656		
	Schonell Graded Dictation Test C	1119.998	64	17.500		
	Schonell Graded Dictation Test D	1608.933	64	25.140		
Total	Schonell One Word Reading Test	11631.000	68			
	Holborn Reading Test	2734.000	68			
	Schonell Spelling Test	8136.000	68			
	Schonell Graded Dictation Test B	1190.000	68			
	Schonell Graded Dictation Test C	2050.000	68			
	Schonell Graded Dictation Test D	2622.000	68			
Corrected Total	Schonell One Word Reading Test	5959.809	67			
	Holborn Reading Test	1428.059	67			
	Schonell Spelling Test	4662.529	67			
	Schonell Graded Dictation Test B	885.059	67			

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	Schonell Graded Dictation Test C	1202.941	67			
	Schonell Graded Dictation Test D	1702.882	67			

a R Squared = .197 (Adjusted R Squared = .160)

b R Squared = .068 (Adjusted R Squared = .025)

c R Squared = .045 (Adjusted R Squared = .000)

d R Squared = .013 (Adjusted R Squared = -.034)

e R Squared = .069 (Adjusted R Squared = .025)

f R Squared = .055 (Adjusted R Squared = .011)

4) Step Four – Results Evaluation

Multivariate Tests – according to Wilk’s Lamda (Λ) there is no significant factor effect for Intervention Type on the 2001 to 2005 (including 2004 participants that received standard TRP remediation) results (collapsed across the six tests of reading, spelling); when factoring in the covariates Mental Age Difference Schonell One Word Reading Test and Mental Age Difference Schonell Spelling Test $\Lambda = 0.869$, $F(6, 59) = 1.480$, $p = 0.201$ ($p > \alpha$). We therefore fail to H_0 .

According to Wilk’s Lamda (Λ) there is no significant factor effect for Mental Age Difference Schonell One Word Reading Test on the dependent groups’ 2001 to 2005 (including 2004 participants that received standard TRP remediation) results (collapsed across the six tests of reading, spelling). $\Lambda = 0.889$, $F(6, 59) = 1.224$, $p = 0.307$ ($p > \alpha$). We therefore fail to H_0 .

According to Wilk’s Lamda (Λ) there is no significant factor effect for Mental Age Difference Schonell Spelling Test on the dependent groups’ 2001 to 2005 (including 2004 participants that received standard TRP remediation) results (collapsed across the six tests of reading, spelling). $\Lambda = 0.903$, $F(6, 59) = 1.053$, $p = 0.401$ ($p > \alpha$). We therefore fail to H_0 .

- a) *Tests of Between-Subjects Effects* – according to the results of the table there is a significant univariate effect for Intervention Type for the Schonell Graded Dictation Test C ($M = 3.53$, $SD = 4.237$), $F(1, 64) = 4.245$, $p = 0.043$ ($p < \alpha$). There is no significant univariate effect for Intervention Type for the dependant variables; the Schonell One Word Reading Test, the Holborn Reading Test, The Schonell Spelling Test, the Schonell Graded Dictation Test B, and the Schonell Graded Dictation Test D ($p > \alpha$).

According to the results of the table there is a significant univariate effect for Mental Age Difference Schonell One Word Reading Test for the Schonell One Word Reading Test ($M = 9.13$, $SD = 9.431$), $F(1, 64) = 5.346$, $p = 0.024$ ($p < \alpha$). There are no significant univariate effects for Mental Age Difference Schonell One Word Reading Test for the dependant variables; the Holborn Reading Test, The Schonell Spelling Test, the Schonell Graded Dictation Test B, Schonell Graded Dictation Test C, and the Schonell Graded Dictation Test D ($p > \alpha$).

None of the univariate effects for Mental Age Difference Schonell Spelling Test are significant for the dependant variables; the Schonell One Word Reading Test, the Holborn Reading Test, The Schonell Spelling Test, the Schonell Graded Dictation Test B, Schonell Graded Dictation Test C, and the Schonell Graded Dictation Test D ($p > \alpha$).

5) Interpretation

Based on the MANCOVA results there is no relationship between the extent of the children's deficits in English reading and spelling, as determined by the difference between their chronological age and reading and spelling ages (as measured by Mental Age Difference Schonell One Word Reading Test and Mental Age Difference Schonell Spelling Test), and gains made in high imagery instruction and structured phonic instruction.

The results of Between Subject Effects indicate that there is a relationship between the extent of the children's deficits in reading and spelling (as measured by Mental Age Difference Schonell One Word Reading Test) and gains made in high imagery instruction and structured phonic instruction on the Schonell One Word Reading Test. There is no relationship between the children's deficits in reading and spelling (as measured by Mental Age Difference Schonell One Word Reading Test) and gains made in high imagery instruction and structured phonic instruction on the Holborn Reading Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, the Schonell Graded Dictation Test C, and the Schonell Graded Dictation Test D.

The results of Between Subject Effects indicate that there is no relationship between the extent of the children's deficits in reading and spelling (as measured by Mental Age Difference Schonell Spelling Test) and gains made in high imagery instruction and structured phonic instruction on the Schonell One Word Reading Test, Holborn Reading Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, the Schonell Graded Dictation Test C, and the Schonell Graded Dictation Test D.

The analysis results from question five therefore indicate that the chronological age and reading and spelling ages has little influence on the gains made in high imagery instruction and structured phonic instruction. We can therefore conclude that gains made in remedial instruction should be viewed as independent of a child's deficit in reading and spelling that is can be calculated in relation to their chronological age. Remedial therapy is therefore successful regardless of the child's deficiency gap.

Appendix 8f: Research Question 6

Step One – Hypothesis

Step Two – Assumptions

Step Three - Test Statistic Results

Step Four - Results Evaluation

Step Five - Interpretation

Research Question 6

Is there a difference between the results of children who are able to visualise and are exposed to high imagery techniques, and children who are exposed to structured phonic teaching?

Hypothesis	Variables	Analysis Type
6) There is a significant difference between the reading, writing and spelling results of children who are able to visualise and received high imagery teaching techniques and the reading, writing and spelling results of children who received structured phonic instruction.	Independent Variables - High imagery/phonic. - Visualise/non-visualise. - Gender. N = 51/19 Dependant Variables - Scholastic test results (6) Covariate: Difference scores (Age equivalent score minus actual score at pre-test) for scholastic test results	Report descriptive stats on incidence of visualising/non-visualising children in sample – Frequency Table MANCOVA (If assumptions are not met then run individual ANCOVA's for each DV)

Q6 - Group Description Data

Table 57: Q6 - Aggregated Treatment versus Control Group Results – 2001 to 2005

Test	Structured	Phonic	High Imagery Instruction	
	Instruction N = 19		N = 41	
Schonell One Word Reading	Average Gains	8.42	Average Gains	10.2
Holborn Sentence Reading	Average Gains	5.37	Average Gains	4.63
Schonell Spelling	Average Gains	6.63	Average Gains	8.2
Schonell Dictation Test B	Average Gains	0.94	Average Gains	2.44
Schonell Dictation Test C	Average Gains	2.68	Average Gains	4.05
Schonell Dictation Test D	Average Gains	1.58	Average Gains	3.85

Table 58: Q6 - Mental Imagery Summary – 2001 to 2005

Structured Phonic Instruction (19)		High Imagery Instruction (41)	
Imagery Code	Participants	Imagery Code	Participants

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1 – good ability	19
2 - no ability	11

1 – good ability	41
2 - no ability	9

Table 59: Q6 - Gender Summary – 2001 to 2005

Structured Phonic Instruction (19)	
Gender Code	Participants
1 – male	13
2 - female	6

High Imagery Instruction (41)	
Gender Code	Participants
1 – male	30
2 - female	11

Q6 - Statistical Analysis Results – MANCOVA – Multiple Analyses Of Covariance

1) Step One – Hypothesis A

H₀: All the group mean vectors are equal, that is, they come from the same populations.

H_A: Not all group mean vectors are equal, that is, they do not all come from the same populations.

The alpha level is set at $\alpha = 0.5$

2) Step Two – Assumptions

- All observations are independent of each other
- Multivariate Normality is assumed for all sampling distributions of the dependent variables and all linear combinations of them are normal.
- Box's Test of Equity of Covariance Matrices verifies the equality of variance which satisfies the requirement that there is Homogeneity of Variance-Covariance Matrices ($p > \alpha$). $\alpha = 0.001$ which is the value typically associated with MANCOVA's where the group sizes are unequal.

Table 60: Q6 - Box's Test of Equality of Covariance Matrices (a)

Box's M	47.893
F	2.045
df1	21
df2	11337.771

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a Design: Intercept + VisualImageryAbility + Group

Sig.	.003
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- Levene's Test for Equality of Variances

$H_0: \sigma_1 = \sigma_2 = \dots \sigma_j$ / all variances are equal

$H_A: \sigma_i \neq \sigma_j$ for at least one pair (i, j) / at least one pair of variances are not equal

Table 61: Q6 - Levene's Test of Equality of Error Variances(a)

	F	df1	df2	Sig.
Schonell One Word Reading Test	.310	1	67	.580
Holborn Reading Test	.393	1	67	.533
Schonell Spelling Test	2.757	1	67	.101
Schonell Graded Dictation Test B	.433	1	67	.513
Schonell Graded Dictation Test C	1.341	1	67	.251
Schonell Graded Dictation Test D	3.024	1	67	.087

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

A Design: Intercept + VisualImageryAbility + Group

- Levene's test for Equality of Error Variances reveals that the variance of each dependant variable is similar. All P-values > 0.05 ($p > \alpha$).
- The Appropriate sum of square (SS) has been used. **Type IV** compensates for cells that are empty in the sample data and compares a given cell with averages from other cells that have data. The empty cells therefore do not exert any influence over the results.

3) Step Three – Test Statistic Results

Table 62: Q6 - Between-Subjects Factors

	N
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Group	1	27
	2	42

Table 63: Q6 - Descriptive Statistics

	Group	Mean	Std. Deviation	N
Schonell One Word Reading Test	1	8.00	8.057	27
	2	9.71	10.194	42
	Total	9.04	9.391	69
Holborn Reading Test	1	4.41	5.301	27
	2	4.29	4.157	42
	Total	4.33	4.601	69
Schonell Spelling Test	1	6.63	4.781	27
	2	7.31	10.013	42
	Total	7.04	8.325	69
Schonell Graded Dictation Test B	1	2.11	3.068	27
	2	2.10	3.956	42
	Total	2.10	3.610	69
Schonell Graded Dictation Test C	1	2.26	3.899	27
	2	4.60	4.489	42
	Total	3.68	4.391	69
Schonell Graded Dictation Test D	1	2.26	3.889	27
	2	4.81	5.606	42
	Total	3.81	5.129	69

Table 64: Q6 - Multivariate Tests(b)

Effect		Value	F	Hypothes is df	Error df	Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.308	4.525(a)	6.000	61.000	.001	.308
	Wilks' Lambda	.692	4.525(a)	6.000	61.000	.001	.308
	Hotelling's Trace	.445	4.525(a)	6.000	61.000	.001	.308
	Roy's Largest Root	.445	4.525(a)	6.000	61.000	.001	.308
VisualImager	Pillai's Trace	.068	.739(a)	6.000	61.000	.620	.068

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yAbility	Wilks' Lambda	.932	.739(a)	6.000	61.000	.620	.068
	Hotelling's Trace	.073	.739(a)	6.000	61.000	.620	.068
	Roy's Largest Root	.073	.739(a)	6.000	61.000	.620	.068
Group	Pillai's Trace	.132	1.543(a)	6.000	61.000	.179	.132
	Wilks' Lambda	.868	1.543(a)	6.000	61.000	.179	.132
	Hotelling's Trace	.152	1.543(a)	6.000	61.000	.179	.132
	Roy's Largest Root	.152	1.543(a)	6.000	61.000	.179	.132

a Exact statistic

b Design: Intercept + VisualImageryAbility + Group

Table 65: Q6 - Tests of Between-Subjects Effects

Source	Dependent Variable	Type IV Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squar ed
Corrected Model	Schonell One Word Reading Test	201.026(a)	2	100.513	1.145	.325	.034
	Holborn Reading Test	58.196(b)	2	29.098	1.391	.256	.040
	Schonell Spelling Test	61.828(c)	2	30.914	.439	.647	.013
	Schonell Graded Dictation Test B	11.963(d)	2	5.981	.452	.639	.013
	Schonell Graded Dictation Test C	89.905(e)	2	44.953	2.430	.096	.069
	Schonell Graded Dictation Test D	122.289(f)	2	61.145	2.422	.097	.068
Intercept	Schonell One Word Reading Test	1292.634	1	1292.634	14.720	.000	.182
	Holborn Reading Test	364.816	1	364.816	17.433	.000	.209
	Schonell Spelling Test	679.658	1	679.658	9.645	.003	.127
	Schonell Graded Dictation Test B	81.539	1	81.539	6.155	.016	.085
	Schonell Graded Dictation Test C	80.416	1	80.416	4.347	.041	.062
	Schonell Graded Dictation Test D	179.539	1	179.539	7.111	.010	.097
VisualImag	Schonell One Word Reading Test	152.728	1	152.728	1.739	.192	.026

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eryAbility	Holborn Reading Test	57.953	1	57.953	2.769	.101	.040
	Schonell Spelling Test	54.231	1	54.231	.770	.384	.012
	Schonell Graded Dictation Test B	11.959	1	11.959	.903	.346	.013
	Schonell Graded Dictation Test C	.224	1	.224	.012	.913	.000
	Schonell Graded Dictation Test D	15.400	1	15.400	.610	.438	.009
Group	Schonell One Word Reading Test	46.356	1	46.356	.528	.470	.008
	Holborn Reading Test	.336	1	.336	.016	.899	.000
	Schonell Spelling Test	7.141	1	7.141	.101	.751	.002
	Schonell Graded Dictation Test B	.011	1	.011	.001	.977	.000
	Schonell Graded Dictation Test C	89.772	1	89.772	4.852	.031	.068
	Schonell Graded Dictation Test D	105.954	1	105.954	4.197	.044	.060
Error	Schonell One Word Reading Test	5795.844	66	87.816			
	Holborn Reading Test	1381.137	66	20.926			
	Schonell Spelling Test	4651.042	66	70.470			
	Schonell Graded Dictation Test B	874.327	66	13.247			
	Schonell Graded Dictation Test C	1221.080	66	18.501			
	Schonell Graded Dictation Test D	1666.261	66	25.246			
Total	Schonell One Word Reading Test	11640.000	69				
	Holborn Reading Test	2735.000	69				
	Schonell Spelling Test	8136.000	69				
	Schonell Graded Dictation Test B	1191.000	69				
	Schonell Graded Dictation Test C	2246.000	69				
	Schonell Graded Dictation Test D	2791.000	69				
Corrected Total	Schonell One Word Reading Test	5996.870	68				
	Holborn Reading Test	1439.333	68				
	Schonell Spelling Test	4712.870	68				
	Schonell Graded Dictation Test B	886.290	68				

	Schonell Graded Dictation Test C	1310.986	68				
	Schonell Graded Dictation Test D	1788.551	68				

a R Squared = .034 (Adjusted R Squared = .004)

b R Squared = .040 (Adjusted R Squared = .011)

c R Squared = .013 (Adjusted R Squared = -.017)

d R Squared = .013 (Adjusted R Squared = -.016)

e R Squared = .069 (Adjusted R Squared = .040)

f R Squared = .068 (Adjusted R Squared = .040)

4) Step Four – Results Evaluation

- a) *Multivariate Tests*- Lamda (Λ) there is no significant factor effect for Intervention Type on the 2001 to 2005 (including 2004 participants that received standard TRP remediation) results (collapsed across the six tests of reading, spelling); when factoring in the covariate Mental Imagery Ability. $\Lambda = 0.868$, $F(6, 61) = 1.543$, $p = 0.179$ ($p > \alpha$). We therefore fail to H_0 .

According to Wilk's Lamda (Λ) there is no significant factor effect for Mental Imagery Ability on the dependent groups 2001 to 2005 (including 2004 participants that received standard TRP remediation) results (collapsed across the six tests of reading, spelling). $\Lambda = 0.932$, $F(6, 61) = 0.739$, $p = 0.620$ ($p > \alpha$). We therefore fail to H_0 .

- b) *Tests of Between-Subjects Effects* – according to the results of the table there is a significant univariate effect for Intervention Type for the dependant variable Schonell Graded Dictation Test C ($M = 3.68$, $SD = 4.391$), $F(1, 69) = 4.852$, $p = 0.031$ ($p < \alpha$). There are no significant univariate effects or Intervention Type for the dependant variables the Schonell One Word Reading Test, the Holborn Reading Test, The Schonell Spelling Test, the Schonell Graded Dictation Test B, and the Schonell Graded Dictation Test D ($p > \alpha$).

There is no significant effect for Mental Imagery Ability for Schonell One Word Reading Test, the Holborn Reading Test, The Schonell Spelling Test, the Schonell Graded Dictation Test B, the Schonell Graded Dictation Test C, and the Schonell Graded Dictation Test D ($p > \alpha$).

5) Interpretation

Based on the MANCOVA results there is no relationship between the extent of the child's mental imagery ability and gains made in high imagery instruction and structured phonic instruction.

The results of the Between Subjects Effects indicate that there is no relationship between the extent of the child's mental imagery ability and gains made in high imagery instruction and structured phonic instruction on the Schonell One Word Reading Test, Holborn Reading Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, the Schonell Graded Dictation Test C, and the Schonell Graded Dictation Test D.

The analysis results from question six therefore indicate that mental imagery ability has little influence on the gains made in high imagery instruction and structured phonic instruction. According to the statistical results we can therefore conclude that the gains made in remedial instruction should be viewed as independent of the child's mental imagery ability. Mental imagery therefore appears to exert no influence in either remedial situation.

Appendix 8g: Research Question 7

Step One – Hypothesis

Step Two – Assumptions

Step Three - Test Statistic Results

Step Four - Results Evaluation

Step Five - Interpretation

Research Question 7

7a) Is there a relationship between the error scores yielded by the three levels of the Phonic Inventories for this sample?

7b) Is there a relationship between the error scores yielded by the instrument on each of the levels of the Phonic Inventories, and the other scholastic tests included as dependant variables in this study?

Hypothesis	Variables	Analysis Type
7a) There is a relationship between the error scores yielded by the three levels of the Phonic Inventories.	<i>Independent Variables</i> ○ Phonic Inventory Level ○ Scholastic Test	First order correlation
7b) There is a relationship between the error scores yielded by the instrument on each of the levels of the Phonic Inventories and the other scholastic tests included as dependant variables.	<i>Dependant Variables</i> • Pre-test scores for the Phonic Inventories and the Scholastic Tests	Tests of multi-colinearity If assumptions are met, factor analysis

Q7 - Group Description Data

Table 66: Q7 - Phonic Inventory Descriptive Data - Combined

	Mean	Std. Deviation	N
Phonic Inventories Level One	16.2289	10.86539	83
Phonic Inventories Level Two	27.0843	16.77266	83
Phonic Inventories Level Three	22.9268	17.75261	82
Phonic Inventories Combined	58.8710	40.63925	93
Schonell Word Recognition	40.8696	15.99534	92
Holborn Reading Test	12.8478	9.20097	92
Schonell Spelling Test	30.8710	10.94276	93
Schonell Graded Dictation Test B	8.1099	6.05062	91
Schonell Graded Dictation Test C	15.2889	7.27354	90
Schonell Graded Dictation Test D	18.0120	7.83129	83

Q7A - Statistical Analysis Results – Correlation Matrix – Phonic Inventories

Table 67: Q7A Correlation Matrix

		Phonic Inventories Level One	Phonic Inventories Level Two	Phonic Inventories Level Three	Phonic Inventories Combined
Phonic Inventories Level One	Pearson Correlation	1	.297(**)	.277(*)	.560(**)
	Sig. (2-tailed)		.006	.012	.000
	Sum of Squares and Cross-products	9680.651	4438.398	4355.537	18525.687
	Covariance	118.057	54.127	53.772	225.923
	N	83	83	82	83
Phonic Inventories Level Two	Pearson Correlation	.297(**)	1	.764(**)	.897(**)
	Sig. (2-tailed)	.006		.000	.000
	Sum of Squares and Cross-products	4438.398	23068.410	18515.854	45818.253
	Covariance	54.127	281.322	228.591	558.759
	N	83	83	82	83
Phonic Inventories Level Three	Pearson Correlation	.277(*)	.764(**)	1	.902(**)
	Sig. (2-tailed)	.012	.000		.000
	Sum of Squares and Cross-products	4355.537	18515.854	25527.561	48398.951
	Covariance	53.772	228.591	315.155	597.518
	N	82	82	82	82
Phonic Inventories Combined	Pearson Correlation	.560(**)	.897(**)	.902(**)	1
	Sig. (2-tailed)	.000	.000	.000	
	Sum of Squares and Cross-products	18525.687	45818.253	48398.951	151942.452
	Covariance	225.923	558.759	597.518	1651.548
	N	83	83	82	93

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 68: Q7A - Summary Correlation Matrix

	Phonic Inventories Level One	Phonic Inventories Level Two	Phonic Inventories Level Three	Phonic Inventories Combined
Phonic Inventories Level One	1	.297(**)	.277(*)	.560(**)
Phonic Inventories Level Two	.297(**)	1	.764(**)	.897(**)

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Phonic Inventories Level Three	.277(*)	.764(**)	1	.902(**)
Phonic Inventories Combined	.560(**)	.897(**)	.902(**)	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Q7A - Interpretation of Correlation Matrix – Phonic Inventories

1) Assumptions

- Relationship between variables is linear
- The values are normally distributed.

2) Results

- Level One and Two of the Phonic Inventories = 0.297
- Level One and Three of the Phonic Inventories = 0.277
- Level One and Combined Phonic Inventories = 0.56
- Level Two and Three of the Phonic Inventories = 0.764
- Level Two and Combined Phonic Inventories = 0.897
- Level Three and Combined Phonic Inventories = 0.902

3) Interpretation

There is a weak positive relationship between Level One and Two of the Phonic Inventories (0.297) and Level One and Three of the Phonic Inventories (0.277). There is a stronger positive relationship between Level One of the Phonic Inventories and the Combined Phonic Inventory Levels (0.56).

There is a strong positive relationship between Level Two and Three of the Phonic Inventories (0.764) and Level Two of the Phonic Inventories and the Combined Phonic Inventory Levels (0.897).

There is a strong positive relationship between Level Three of the Phonic Inventories and the Combined Phonic Inventory Levels (0.902).

The results of the analysis indicate that there is a relationship between the different levels of the Phonic Inventories.

Q7B - Statistical Analysis Results – Correlation Matrix – All Pre-Test Variables

Table 69: Q7B Correlation Matrix

		Phonic Inventories Level One	Phonic Inventories Level Two	Phonic Inventories Level Three	Phonic Inventories Combined	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test	Schonell Graded Dictation Test B	Schonell Graded Dictation Test C	Schonell Graded Dictation Test D
Phonic Inventories Level One	Pearson Correlation	1	.297(**)	.277(*)	.560(**)	-.528(**)	-.202	-.481(**)	.491(**)	.524(**)	.611(**)
	Sig. (2-tailed)		.006	.012	.000	.000	.069	.000	.000	.000	.000
	Sum of Squares and Cross-products	9680.651	4438.398	4355.537	18525.687	-7348.244	-1643.537	-4554.000	2637.753	3210.750	3420.712
	Covariance	118.057	54.127	53.772	225.923	-90.719	-20.291	-55.537	32.972	40.642	47.510
	N	83	83	82	83	82	82	83	81	80	73
Phonic Inventories Level Two	Pearson Correlation	.297(**)	1	.764(**)	.897(**)	-.343(**)	-.175	-.268(*)	.571(**)	.577(**)	.662(**)
	Sig. (2-tailed)	.006		.000	.000	.002	.115	.014	.000	.000	.000
	Sum of Squares and Cross-products	4438.398	23068.410	18515.854	45818.253	-7331.585	-2195.488	-3909.000	4690.642	5402.388	6105.849
	Covariance	54.127	281.322	228.591	558.759	-90.513	-27.105	-47.671	58.633	68.385	84.803
	N	83	83	82	83	82	82	83	81	80	73
Phonic Inventories Level Three	Pearson Correlation	.277(*)	.764(**)	1	.902(**)	-.238(*)	-.092	-.230(*)	.430(**)	.400(**)	.556(**)
	Sig. (2-tailed)	.012	.000		.000	.032	.412	.038	.000	.000	.000
	Sum of Squares and Cross-products	4355.537	18515.854	25527.561	48398.951	-5303.185	-1203.494	-3529.707	3750.000	4009.013	5573.055
	Covariance	53.772	228.591	315.155	597.518	-66.290	-15.044	-43.577	47.468	51.398	77.404
	N	82	82	82	82	81	81	82	80	79	73
Phonic Inventories	Pearson Correlation	.560(**)	.897(**)	.902(**)	1	-.290(**)	-.194	-.407(**)	.571(**)	.536(**)	.602(**)
	Sig. (2-tailed)	.000	.000	.000		.005	.063	.000	.000	.000	.000

		Phonic Inventories Level One	Phonic Inventories Level Two	Phonic Inventories Level Three	Phonic Inventories Combined	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test	Schonell Graded Dictation Test B	Schonell Graded Dictation Test C	Schonell Graded Dictation Test D
Combined	Sum of Squares and Cross-products	18525.687	45818.253	48398.951	151942.452	-17192.391	-6629.957	-16669.548	12715.165	14226.378	16116.831
	Covariance	225.923	558.759	597.518	1651.548	-188.927	-72.857	-181.191	141.280	159.847	196.547
	N	83	83	82	93	92	92	93	91	90	83
Schonell Word Recognition	Pearson Correlation	-.528(**)	-.343(**)	-.238(*)	-.290(**)	1	.482(**)	.489(**)	-.588(**)	-.714(**)	-.689(**)
	Sig. (2-tailed)	.000	.002	.032	.005		.000	.000	.000	.000	.000
	Sum of Squares and Cross-products	-7348.244	-7331.585	-5303.185	-17192.391	23282.435	6449.174	7807.261	-4988.778	-7210.674	-7012.229
	Covariance	-90.719	-90.513	-66.290	-188.927	255.851	70.870	85.794	-56.054	-81.939	-85.515
	N	82	82	81	92	92	92	92	90	89	83
Holborn Reading Test	Pearson Correlation	-.202	-.175	-.092	-.194	.482(**)	1	-.021	-.376(**)	-.487(**)	-.422(**)
	Sig. (2-tailed)	.069	.115	.412	.063	.000		.845	.000	.000	.000
	Sum of Squares and Cross-products	-1643.537	-2195.488	-1203.494	-6629.957	6449.174	7703.870	-190.196	-1869.578	-2893.146	-2547.518
	Covariance	-20.291	-27.105	-15.044	-72.857	70.870	84.658	-2.090	-21.006	-32.877	-31.067
	N	82	82	81	92	92	92	92	90	89	83
Schonell Spelling Test	Pearson Correlation	-.481(**)	-.268(*)	-.230(*)	-.407(**)	.489(**)	-.021	1	-.537(**)	-.576(**)	-.610(**)
	Sig. (2-tailed)	.000	.014	.038	.000	.000	.845		.000	.000	.000
	Sum of Squares and Cross-products	-4554.000	-3909.000	-3529.707	-16669.548	7807.261	-190.196	11016.452	-3176.758	-4072.489	-4328.506
	Covariance	-55.537	-47.671	-43.577	-181.191	85.794	-2.090	119.744	-35.297	-45.758	-52.787
	N	83	83	82	93	92	92	93	91	90	83

		Phonic Inventories Level One	Phonic Inventories Level Two	Phonic Inventories Level Three	Phonic Inventories Combined	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test	Schonell Graded Dictation Test B	Schonell Graded Dictation Test C	Schonell Graded Dictation Test D
Schonell Graded Dictation Test B	Pearson Correlation	.491(**)	.571(**)	.430(**)	.571(**)	-.588(**)	-.376(**)	-.537(**)	1	.806(**)	.803(**)
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000	.000
	Sum of Squares and Cross-products	2637.753	4690.642	3750.000	12715.165	-4988.778	-1869.578	-3176.758	3294.901	3153.133	3204.048
	Covariance	32.972	58.633	47.468	141.280	-56.054	-21.006	-35.297	36.610	35.428	39.074
	N	81	81	80	91	90	90	91	91	90	83
Schonell Graded Dictation Test C	Pearson Correlation	.524(**)	.577(**)	.400(**)	.536(**)	-.714(**)	-.487(**)	-.576(**)	.806(**)	1	.918(**)
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.000
	Sum of Squares and Cross-products	3210.750	5402.388	4009.013	14226.378	-7210.674	-2893.146	-4072.489	3153.133	4708.489	4411.940
	Covariance	40.642	68.385	51.398	159.847	-81.939	-32.877	-45.758	35.428	52.904	53.804
	N	80	80	79	90	89	89	90	90	90	83
Schonell Graded Dictation Test D	Pearson Correlation	.611(**)	.662(**)	.556(**)	.602(**)	-.689(**)	-.422(**)	-.610(**)	.803(**)	.918(**)	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	Sum of Squares and Cross-products	3420.712	6105.849	5573.055	16116.831	-7012.229	-2547.518	-4328.506	3204.048	4411.940	5028.988
	Covariance	47.510	84.803	77.404	196.547	-85.515	-31.067	-52.787	39.074	53.804	61.329
	N	73	73	73	83	83	83	83	83	83	83

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

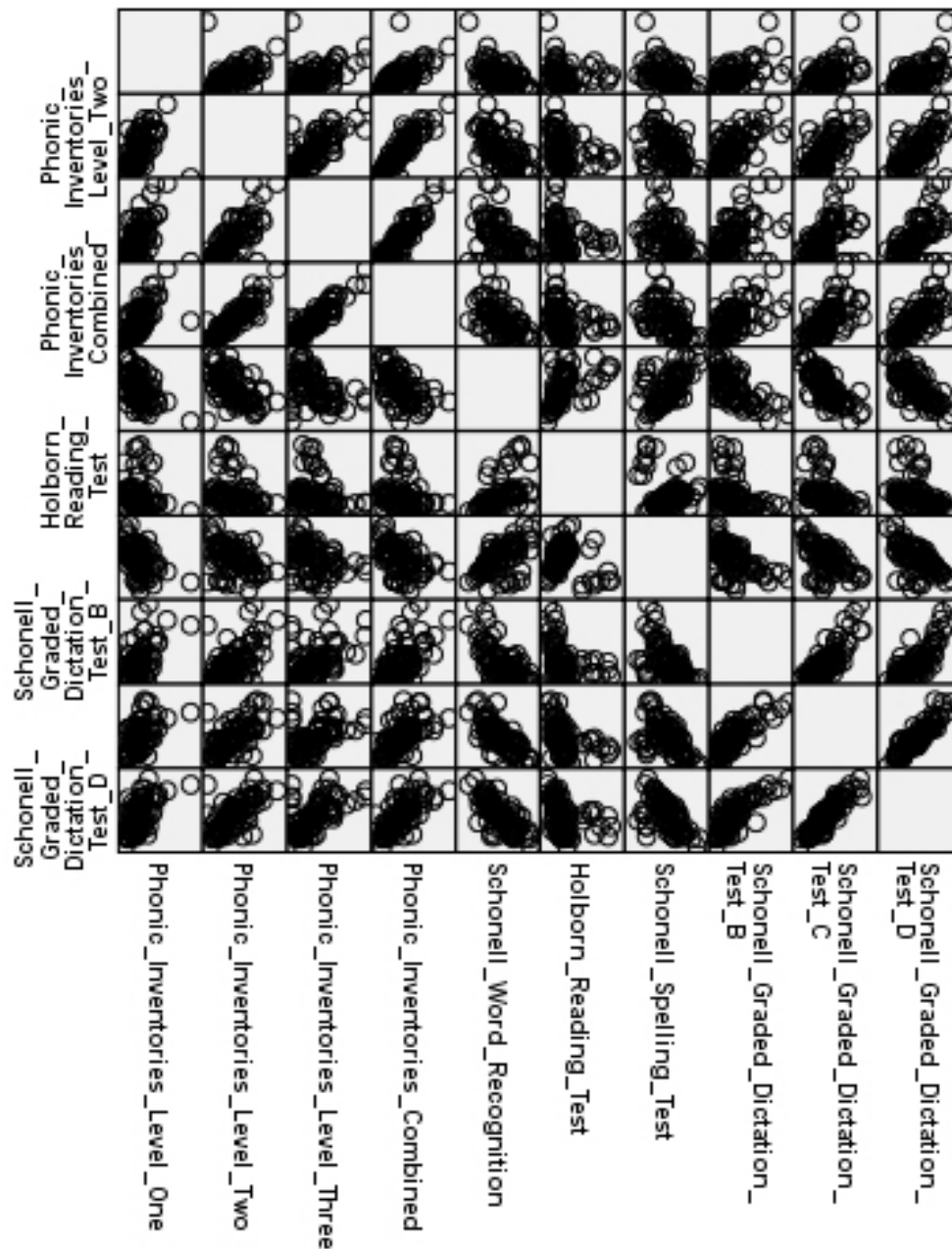
Table 70: Q7B - Summary Correlation Matrix

	Phonic Inventories Level One	Phonic Inventories Level Two	Phonic Inventories Level Three	Phonic Inventories Combined	Schonell Word Recognition	Holborn Reading Test	Schonell Spelling Test	Schonell Graded Dictation Test B	Schonell Graded Dictation Test C	Schonell Graded Dictation Test D
Phonic Inventories Level One	1	.297(**)	.277(*)	.560(**)	-.528(**)	-.202	-.481(**)	.491(**)	.524(**)	.611(**)
Phonic Inventories Level Two	.297(**)	1	.764(**)	.897(**)	-.343(**)	-.175	-.268(*)	.571(**)	.577(**)	.662(**)
Phonic Inventories Level Three	.277(*)	.764(**)	1	.902(**)	-.238(*)	-.092	-.230(*)	.430(**)	.400(**)	.556(**)
Phonic Inventories Combined	.560(**)	.897(**)	.902(**)	1	-.290(**)	-.194	-.407(**)	.571(**)	.536(**)	.602(**)
Schonell Word Recognition	-.528(**)	-.343(**)	-.238(*)	-.290(**)	1	.482(**)	.489(**)	-.588(**)	-.714(**)	-.689(**)
Holborn Reading Test	-.202	-.175	-.092	-.194	.482(**)	1	-.021	-.376(**)	-.487(**)	-.422(**)
Schonell Spelling Test	-.481(**)	-.268(*)	-.230(*)	-.407(**)	.489(**)	-.021	1	-.537(**)	-.576(**)	-.610(**)
Schonell Graded Dictation Test B	.491(**)	.571(**)	.430(**)	.571(**)	-.588(**)	-.376(**)	-.537(**)	1	.806(**)	.803(**)
Schonell Graded Dictation Test C	.524(**)	.577(**)	.400(**)	.536(**)	-.714(**)	-.487(**)	-.576(**)	.806(**)	1	.918(**)
Schonell Graded Dictation Test D	.611(**)	.662(**)	.556(**)	.602(**)	-.689(**)	-.422(**)	-.610(**)	.803(**)	.918(**)	1

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Figure 1: Q7B - Correlation Graph



Q7B - Interpretation of Correlation Matrix – All Pre-Test Variables

1) Assumptions

- Relationship between variables is linear
- The values are normally distributed.

2) Results

The strongest correlations area asfollows:

- Level One of the Phonic Inventories and the Schonell Word Recognition Test (-0.528), the Schonell Spelling Test (-0.481), the Schonell Graded Dictation Test B (0.491), the Schonell Graded Dictation Test C (0.524), the Schonell Graded Dictation Test D (0.611).
- Level Two of the Phonic Inventories and the Schonell Word Recognition Test (-0.343), the Schonell Graded Dictation Test B (0.571), the Schonell Graded Dictation Test C (0.577), the Schonell Graded Dictation Test D (0.662).
- Level Three of the Phonic Inventories and the Schonell Graded Dictation Test B (0.430), the Schonell Graded Dictation Test C (0.400), the Schonell Graded Dictation Test D (0.556).
- The Combined Levels of the Phonic Inventories and the Schonell Spelling Test (-0.407), the Schonell Graded Dictation Test B (0.571), the Schonell Graded Dictation Test C (0.536), the Schonell Graded Dictation Test D (0.602).

3) Interpretation

Level One of the Phonic Inventories has a strong negative relationship with the Schonell Word Recognition and the Schonell Spelling Test. It has a strong positive relationship with the three Schonell Graded Dictation Tests.

Level Two of the Phonic Inventories has a medium strength negative relationship with the Schonell Word Recognition Test and a strong positive relationship with the three Schonell Graded Dictation Tests.

Level Three of the Phonic Inventories has a medium positive relationship with the Schonell Graded Dictation Tests B and C and a strong positive relationship with Test D.

The Combined Level Phonic Inventories has a medium negative relationship with the Schonell Spelling Test and the strong positive relationship with the three levels of the Schonell Graded Dictation Test.

No strong relationships between the levels of the Phonic Inventories and the Holborn Reading Test are present. However a weak negative relationship does exist.

Decision: Factor Analysis on the variables to determine the nature of the relationship between the variables.

Q7B Interpretation of Factor Analysis – Statistical Analysis Results

Table 71: Q7B Descriptive Data

	Mean	Std. Deviation	Analysis N
Phonic Inventories Level One	15.2055	9.96237	73
Phonic Inventories Level Two	27.8219	16.42520	73
Phonic Inventories Level Three	24.2466	17.85418	73
Phonic Inventories Combined	67.2740	37.80148	73
Schonell Word Recognition	42.9315	15.42935	73
Holborn Reading Test	13.2466	9.44543	73
Schonell Spelling Test	30.6027	10.75838	73
Schonell Graded Dictation Test B	8.2877	6.45815	73
Schonell Graded Dictation Test C	15.3562	7.45239	73
Schonell Graded Dictation Test D	18.2192	7.80179	73

Table 72: Q7B Commonalities

	Initial	Extraction
Phonic Inventories Level One	1.000	.561
Phonic Inventories Level Two	1.000	.844
Phonic Inventories Level Three	1.000	.901

Phonic Inventories Combined	1.000	.993
Schonell Word Recognition	1.000	.790
Holborn Reading Test	1.000	.936
Schonell Spelling Test	1.000	.871
Schonell Graded Dictation Test B	1.000	.781
Schonell Graded Dictation Test C	1.000	.895
Schonell Graded Dictation Test D	1.000	.880

Extraction Method: Principal Component Analysis.

Figure 2: Q7B Scree Plot

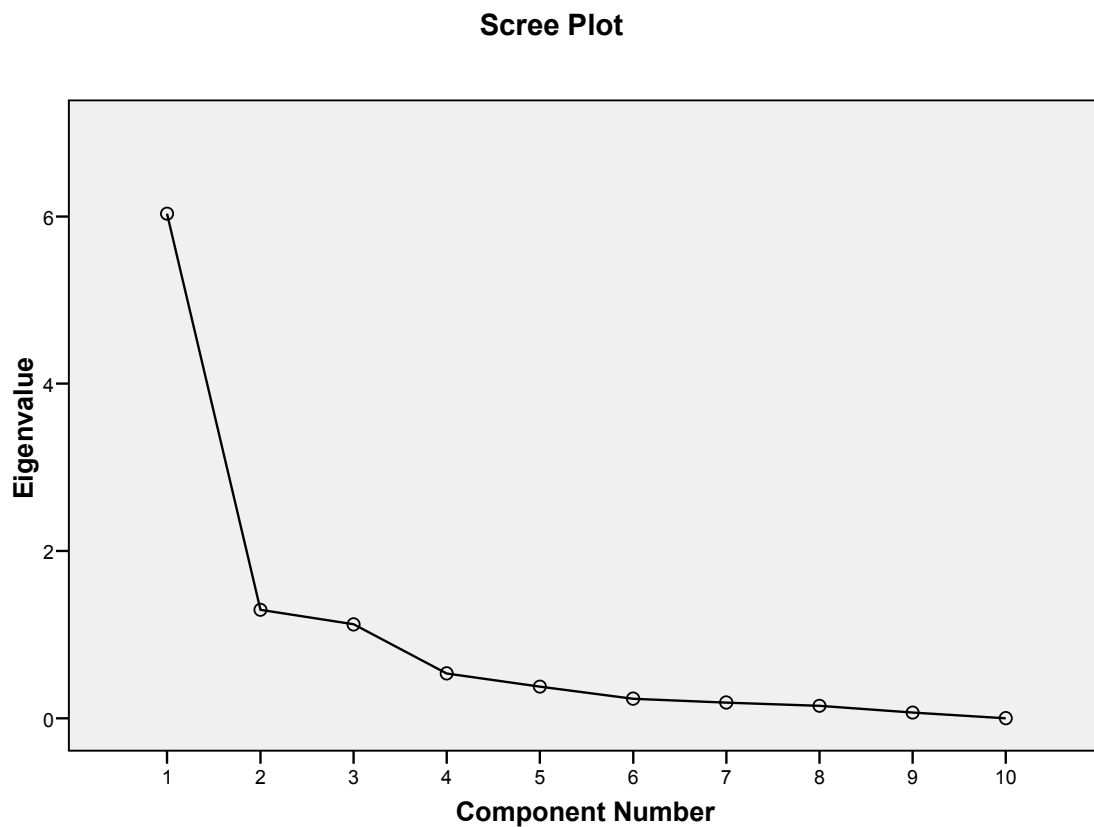


Table 73: Q7B Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	6.034	60.340	60.340	6.034	60.340	60.340	4.026	40.262	40.262
2	1.297	12.966	73.306	1.297	12.966	73.306	2.990	29.900	70.162
3	1.122	11.217	84.524	1.122	11.217	84.524	1.436	14.361	84.524
4	.535	5.351	89.875						
5	.377	3.773	93.647						
6	.233	2.328	95.975						
7	.188	1.880	97.856						
8	.148	1.482	99.338						
9	.066	.662	100.000						
10	-6.94E-018	-6.94E-017	100.000						

Extraction Method: Principal Component Analysis.

Table 74: Q7B Component Matrix(a)

	Component		
	1	2	3
Phonic Inventories Level One	.719	.119	-.172
Phonic Inventories Level Two	.818	.247	.338
Phonic Inventories Level Three	.710	.426	.463
Phonic Inventories Combined	.880	.340	.320
Schonell Word Recognition	-.806	.340	.158
Holborn Reading Test	-.393	.775	-.425
Schonell Spelling Test	-.633	-.297	.618
Schonell Graded Dictation Test B	.849	-.174	-.173
Schonell Graded Dictation Test C	.891	-.273	-.160
Schonell Graded Dictation Test D	.921	-.118	-.133

Extraction Method: Principal Component Analysis.
a 3 components extracted.

Table 75: Q7B Rotated Component Matrix(a)

	Component		
	1	2	3
Phonic Inventories Level One	.634	.397	-.046
Phonic Inventories Level Two	.374	.829	.133
Phonic Inventories Level Three	.179	.932	.028
Phonic Inventories Combined	.414	.905	.059
Schonell Word Recognition	-.783	-.219	-.361
Holborn Reading Test	-.196	-.090	-.943
Schonell Spelling Test	-.804	-.170	.442
Schonell Graded Dictation Test B	.792	.323	.223
Schonell Graded Dictation Test C	.836	.305	.320
Schonell Graded Dictation Test D	.812	.419	.212

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

a Rotation converged in 5 iterations.

Q7B - Interpretation of Factor Analysis– All Pre-Test Variables

1) Results

Table 72 of Commonalities indicates that a large portion of the variance for each variable is accounted for the other components that have been identified. These results confirm the results of the correlation matrix which showed a strong relationship between the pre-test phonic inventory variables (proportion of variance for Phonic Inventories Level One = 0.561, Phonic Inventories Level Two = 0.844, Phonic Inventories Level Three = 0.901, and Phonic Inventories Combined = 0.993). Additionally however the proportion of variance for each of the components in Table 72 confirms the relationships indicated in the correlation matrix where there is a relationship between the Phonic Inventories and the scholastic test used or assessment (Schonell Word Recognition = 0.790, Holborn Reading Test = 0.936, Schonell Spelling Test = 0.871, Schonell Graded Dictation Test B = 0.781, Schonell Graded Dictation Test C = 0.895, and Schnell Graded Dictation Test D = 0.880).

The Results for the Scree Plot (Figure 2) and the Total Variance Explained (Table 73) indicates that there are three main components that should be retained (variables 1, 2 and 3). The sum of these components accounts for 84.52% of the variance observed among the components.

The results of the Rotated Component Matrix (Table 75) show that there is a high loading on the first component and the Phonic Inventory Level One, the Schonell Word Recognition Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, C and D. There is a high loading between the second component and the Phonic Inventories Levels Two and Three, the Phonic Inventories Combined. There is a high loading between the third component and the Holborn Reading Test. For each of the components that are weaker loadings evident .e.g. component two has a weak loading

between the Schonell Graded Dictation Test D, component three has a weak loading between component three and the Schonell Spelling Test.

2) Interpretation

The result of the factor analysis indicates that there are three main factors present for the pre-test scores. These factors are:

- a reading and writing factor as indicated by the strong loadings on the Phonic Inventories Level One, the Schonell Word Recognition Test, the Schonell Spelling Test, the Schonell Graded Dictation Test B, C and D.
- a sequential reading and sequential writing factor as indicated by the strong loading between the Phonic Inventories Level Two, Three and Combined.
- A sequential reading factor as indicated by the high loading on the Holborn Reading Test.

It is interesting to note that the Phonic Inventories appear to present themselves as their own factor within the pre-test battery of tests. This would appear to indicate that the Phonic Inventories are measuring something that is distinct from the other scholastic tests. Use of the Phonic Inventories therefore adds to the value of any test battery that is conducted on reading, writing and spelling. Further research into the Phonic Inventories will provide further information as to whether or not this is indeed the case.

Appendix 8h: Research Question 8

Step One – Hypothesis

Step Two – Assumptions

Step Three - Test Statistic Results

Step Four - Results Evaluation

Step Five - Interpretation

Research Question 8

What trends are evident from the cumulative results of Level 1, 2 and 3 of the Phonic Inventories for those children who received high imagery instruction and those that received structured phonic instruction?

Hypothesis	Variables	Analysis Type
8) There will be a significant difference between the results of children who received high imagery instruction as opposed to those who received structured phonic instruction.	Independent Variables - High imagery/phonic. Visualise/non-visualise. N = 49/28 Dependant Variables - Phonic Inventories	t-Test

Q8 - Group Description Data

Table 76: Q8 - Aggregated Treatment versus Contrast group Results – 2001 to 2005

Test	Structured Phonic Instruction N = 28		High Imagery Instruction N = 49	
Level One – Phonic Inventories	Average Gains	3.93	Average Gains	5.47
Level Two - Phonic Inventories	Average Gains	6.39	Average Gains	7.44
Level Three - Phonic Inventories	Average Gains	6.71	Average Gains	6.29

Q8 - Statistical Analysis Results – t-Test: Independent Samples t-Test

1) Step One – Hypothesis

H_0 : There is no significant difference ($m_1 = m_2$)

H_A : There is a significant difference ($m_1 \neq m_2$)

The alpha level is set at $\alpha = 0.05$ and the test is a two tailed test (α of 0.025 on either tale)

2) Step Two – Assumptions

- All observations are independent of each other

- All dependant variables are measured on an interval or ratio scale
- Normality is assumed.
- Levene's Test for Equality of Variances

$H_0: \sigma_1 = \sigma_2 = \dots \sigma_j$ / all variances are equal

$H_A: \sigma_i \neq \sigma_j$ for at least one pair (i, j) / at least one pair of variances are not equal

$\alpha = 0.5$

Table 77: Q8 - Independent Samples t-test - Levene's Test for Equality of Variances

		F	Sig.
Level One – Phonic Inventories	Equal variances assumed	0.546	0.462
Level Two – Phonic Inventories	Equal variances assumed	2.442	0.122
Level Three – Phonic Inventories	Equal variances assumed	0.000	0.991

- Equality of Variance can be assumed. All the p-values for independent variables are greater than 0.05 ($p > \alpha$). The appropriate test statistics will therefore have to be used in the interpretation of the Independent Sample t-Test results. Where equal variance can be assumed for a variable, the corresponding t-stat “Equal variances assumed” will be used to determine significance.

3) Step Three – Test Statistic Results

Table 78: Q8 - Independent Samples t-test - Levene's Test for Equality of Variances

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Upper	Lower
Level One	Equal	-.971	75	.335	-1.54082	1.58661	-4.7015	1.61987

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	variances assumed							
	<i>Equal variances not assumed</i>	-1.072	72.221	.287	-1.54082	1.43786	-4.4070	1.32536
Level Two	Equal variances assumed	-.433	75	.667	-1.05612	2.44163	-5.9201	3.80785
	<i>Equal variances not assumed</i>	-.484	73.606	.630	-1.05612	2.18283	-5.4058	3.29365
Level Three	Equal variances assumed	.173	75	.863	.42857	2.47374	-4.4993	5.35651
	<i>Equal variances not assumed</i>	.170	53.057	.866	.42857	2.52291	-4.6316	5.48876

Note: the t-Test results used for interpretation have been italicized for easy identification

4) Step Four – Results Evaluation

- a) Level One – Phonic Inventories – the results indicate that the observed mean difference (-1.54) is not significant $t(75) = -0.971$, $p = 0.335$ ($p > \alpha$). We therefore fail to reject H_0 .
- b) Level Two – Phonic Inventories – the results indicate that the observed mean difference (-1.056) is not significant $t(75) = -0.433$, $p = 0.667$ ($p > \alpha$). We therefore fail to reject H_0 .
- c) Level Three – Phonic Inventories – the results indicate that the observed mean difference (1.429) is not significant $t(75) = 0.173$, $p = 0.863$ ($p > \alpha$). We therefore fail to reject H_0 .

5) Step Five - Interpretation

Based on the results from the Independent Samples t-Test there is not visible trend that can be concluded from the cumulative results of the Phonic Inventories based on the type of remedial intervention received. Hypothesis tests that sought to determine a significant difference in Levels 1, 2 and 3 of the Phonic Inventories, for those who received high imagery instruction as opposed to structured phonic instruction, for cumulative results for 2001 to 2005 (including 2004 participants that received standard TRP remediation) were as follows:

- No significant difference for Level 1 – Phonic Inventories was recorded;
- No significant difference for Level 2 – Phonic Inventories was recorded; and
- No significant difference for Level 3 – Phonic Inventories was recorded.

The two remedial instruction types are therefore equally effective in the manner in which they build the child's word rule knowledge. The greater gains indicated by the greater aggregate mean gains for Level 1, 2 and 3 is therefore not significant in nature.