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The Learning Disability Research Unit

The University of Huddersfield

Floor effects on the WISC-IV and WAIS-III

By

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and

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IQ tests

Wechsler Adult Intelligence Scale (WAIS)

Wechsler Intelligence Scale for Children (WISC)

Raw score and scaled scores

Raw score on subtests are converted to normalised scaled scores with a mean of 10, a standard deviation of 3 and a range between 1 and 19.

Sum of scaled scores

The IQ figure is calculated from the sum of scaled scores of all the subtests that measure IQ.

Floor effect 1: Scaled score of 1 for low raw scores

WISC-IV Digit Span

Age group 16:00 to 16:30

Raw Score:	18	17	16	15	14	13	12	11	10	0-9
Scaled Score:	10	9	8	7	6	5	4	3	2	1

Age group 6:00 to 6:30

Raw Score:	11	10	8-9	7	6	5	-	4	3	0-2
Scaled Score:	10	9	8	7	6	5	4	3	2	1

Floor effect 2:

Scaled score of 1 for raw scores of zero

Where there is a raw score of zero there is no indication what abilities, if any, the client has on the subtest.

The current manuals for the WISC-IV and WAIS-III suggest that if a client gets too many raw scores of zero, IQ scores should not be reported. For example on the WAIS-III a FS IQ should not be given unless the client has raw scores above zero on at least three Verbal and three Performance subtests.

Floor effect 3:

Allocating based IQs or Index scores to low sums of scaled score.

WISC-IV FS IQ

SSS:	22	21	20	19	18	17	16	15	14-10
FSIQ:	45	44	44	43	42	42	41	41	40

WAIS-III FS IQ

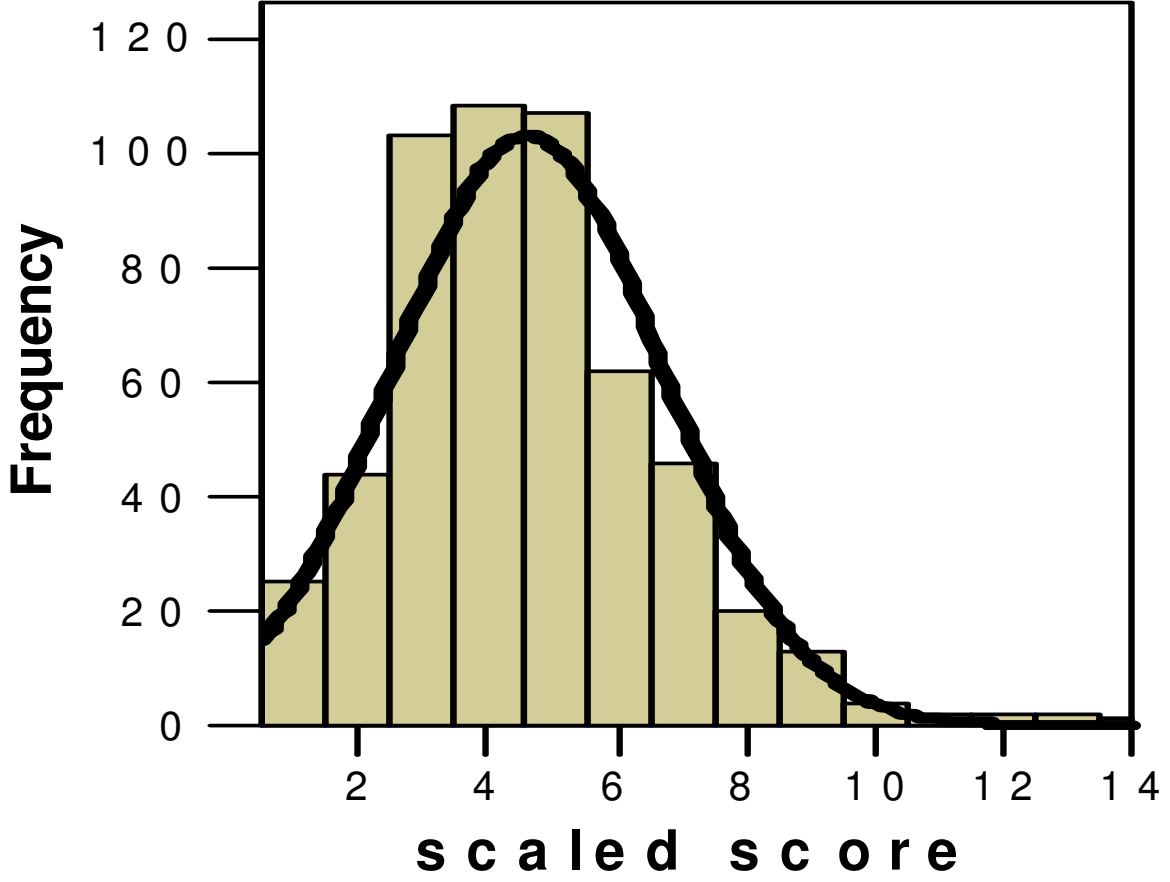
SSS:	25	24	23	22	21	20	19	18	17	16-11
FSIQ:	50	50	49	49	48	48	47	46	46	45

Whitaker and Wood (2008)

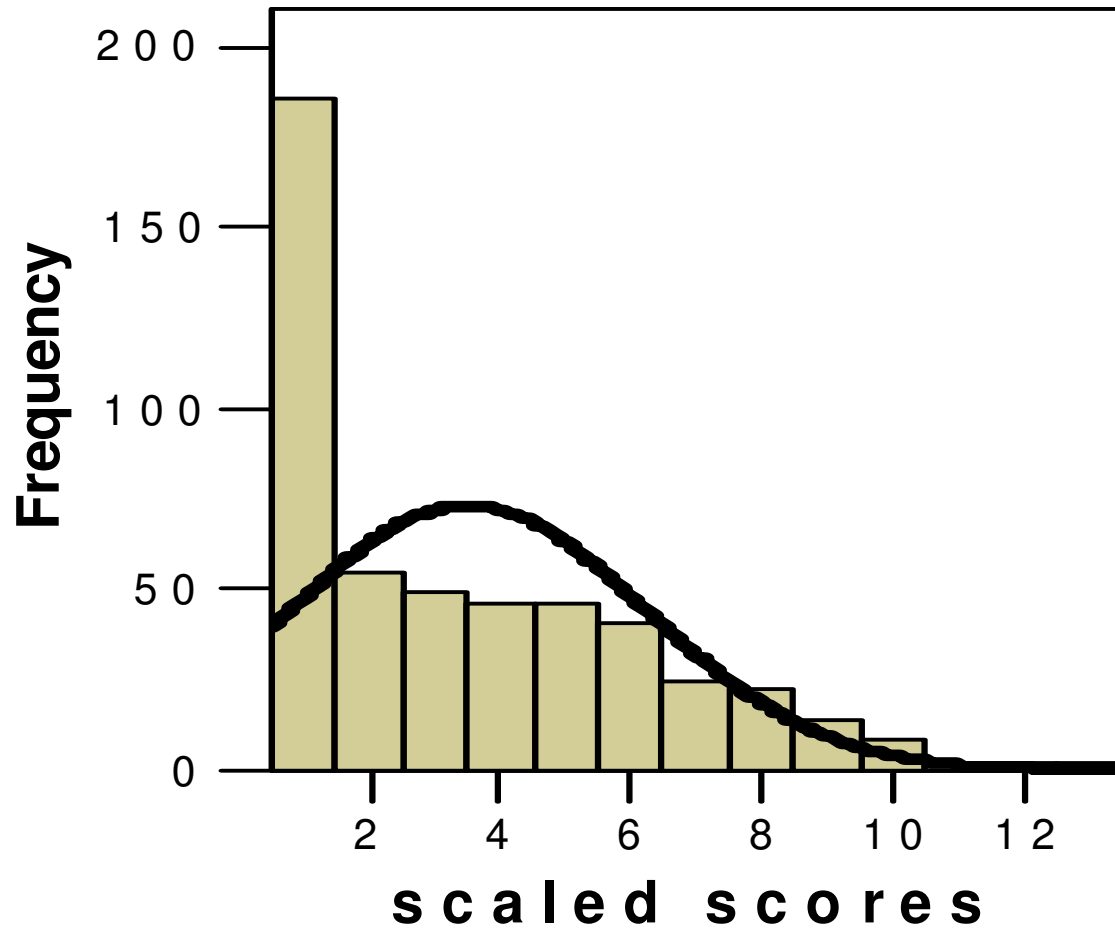
50 WISC-III: Mean FSIQ 58.04; SD 9.92

49 WAIS-III: Mean FSIQ 65.20; SD 7.03

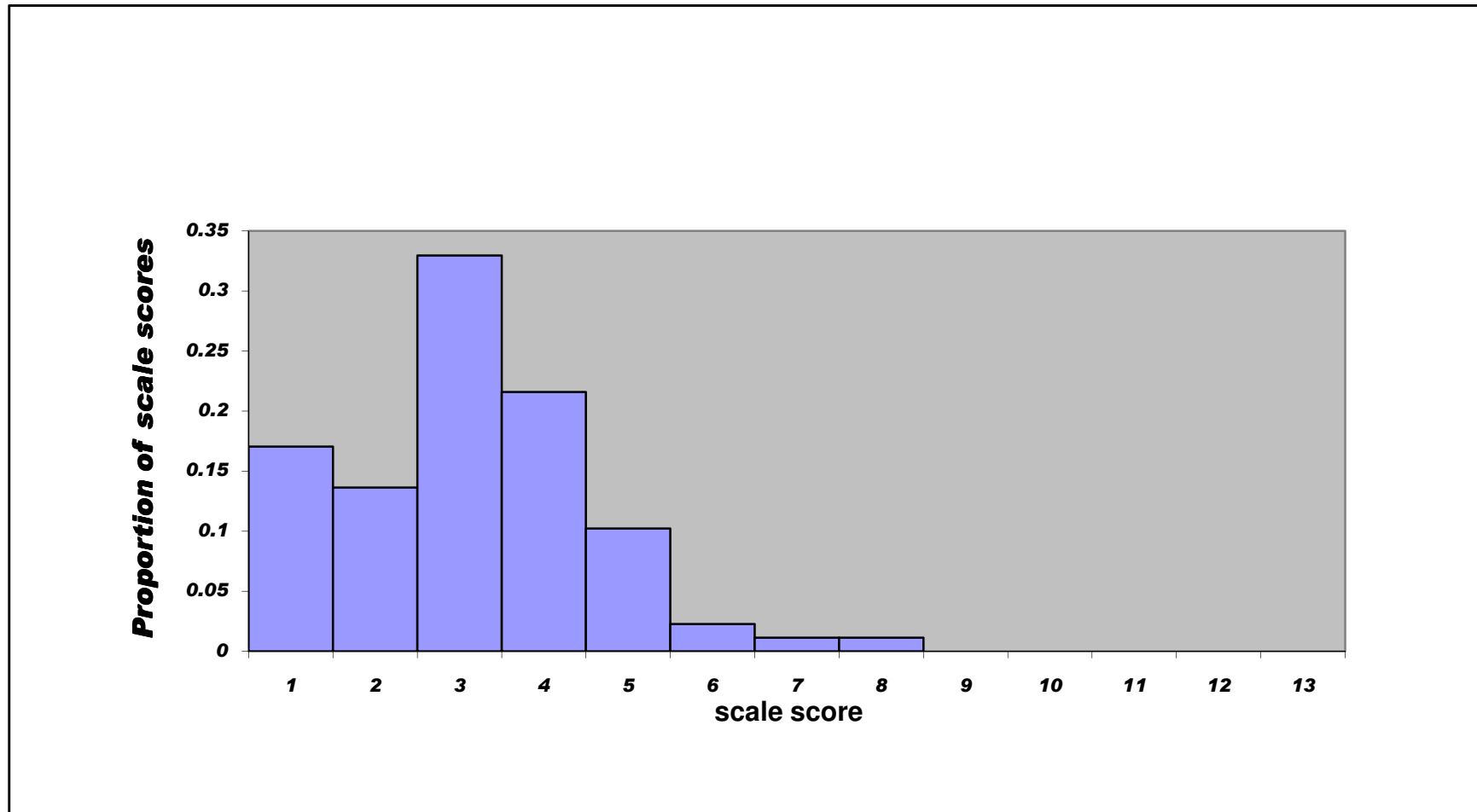
Frequency of WAIS-III scaled scores



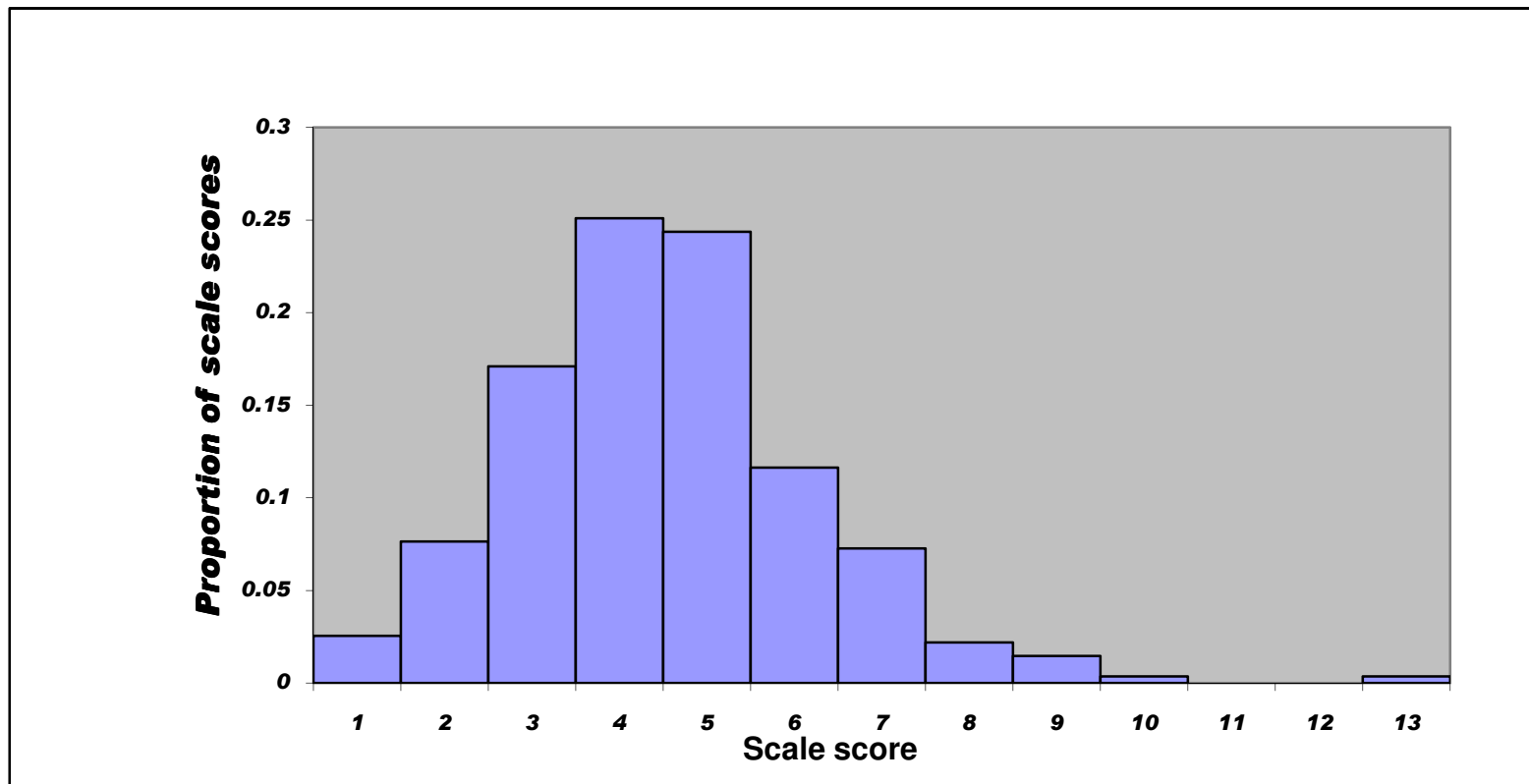
Frequency of WISC-III scaled scores



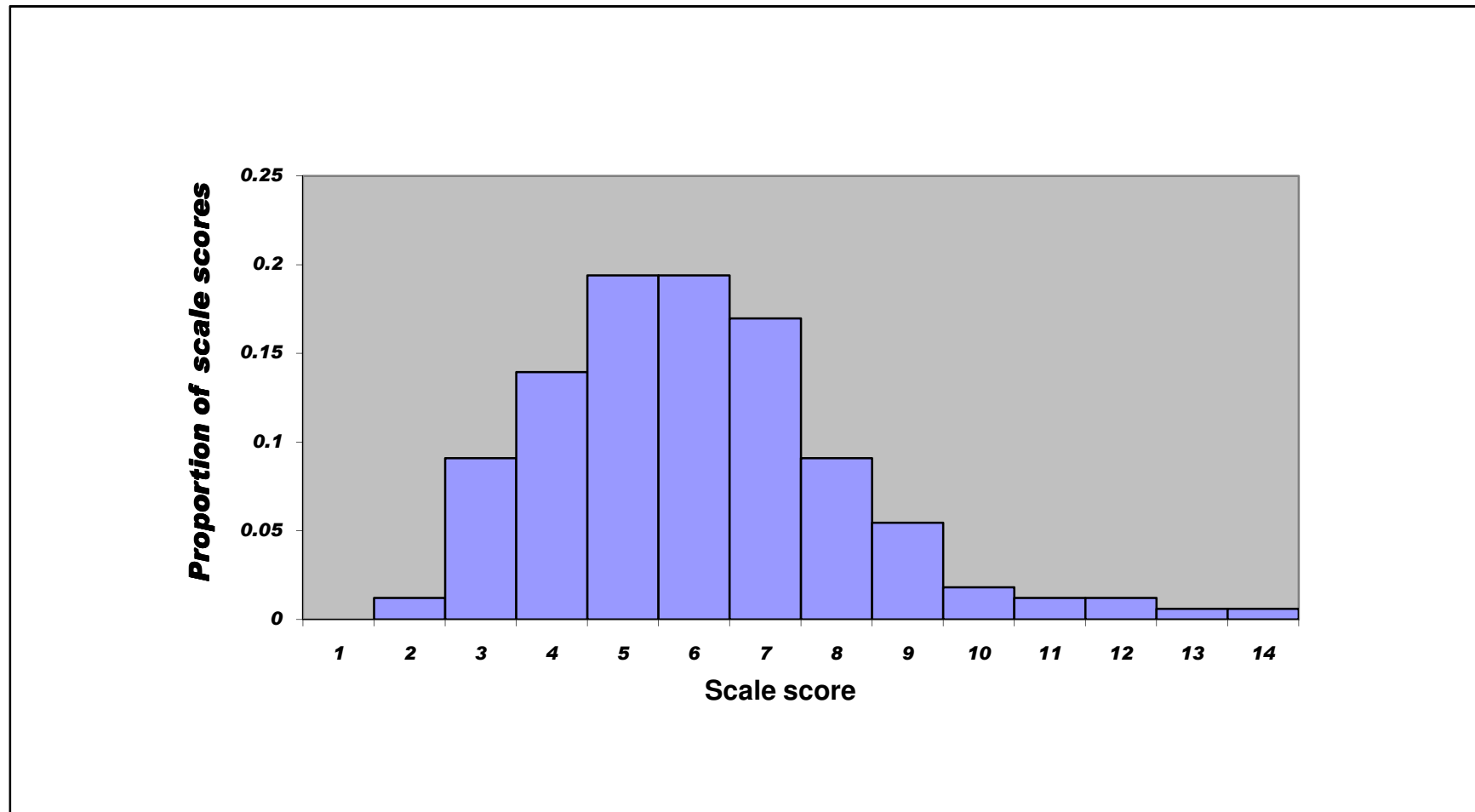
Proportion of scaled scores on WAIS-III for IQs in 50s



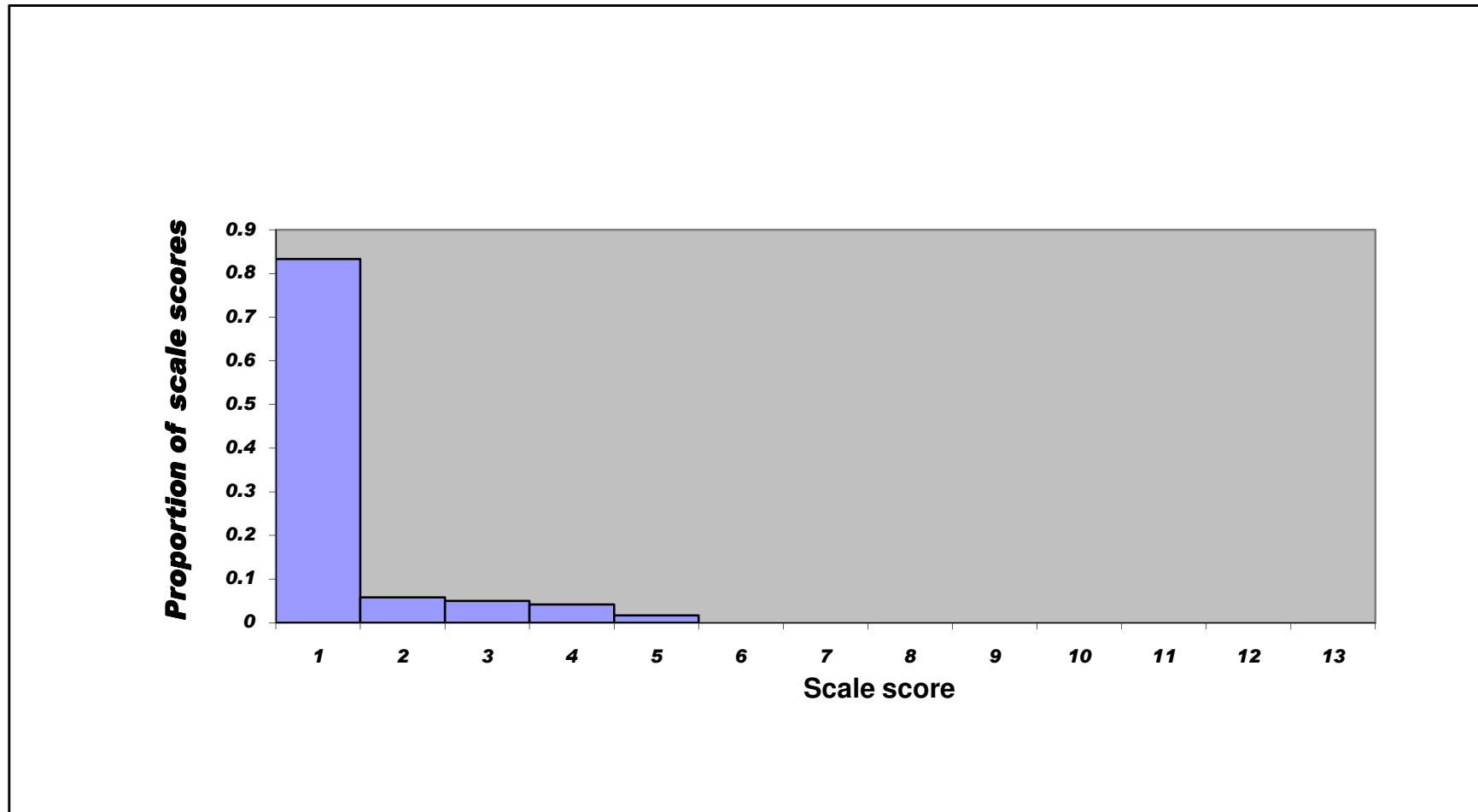
Proportion of scaled scores on WAIS-III for IQs in 60s



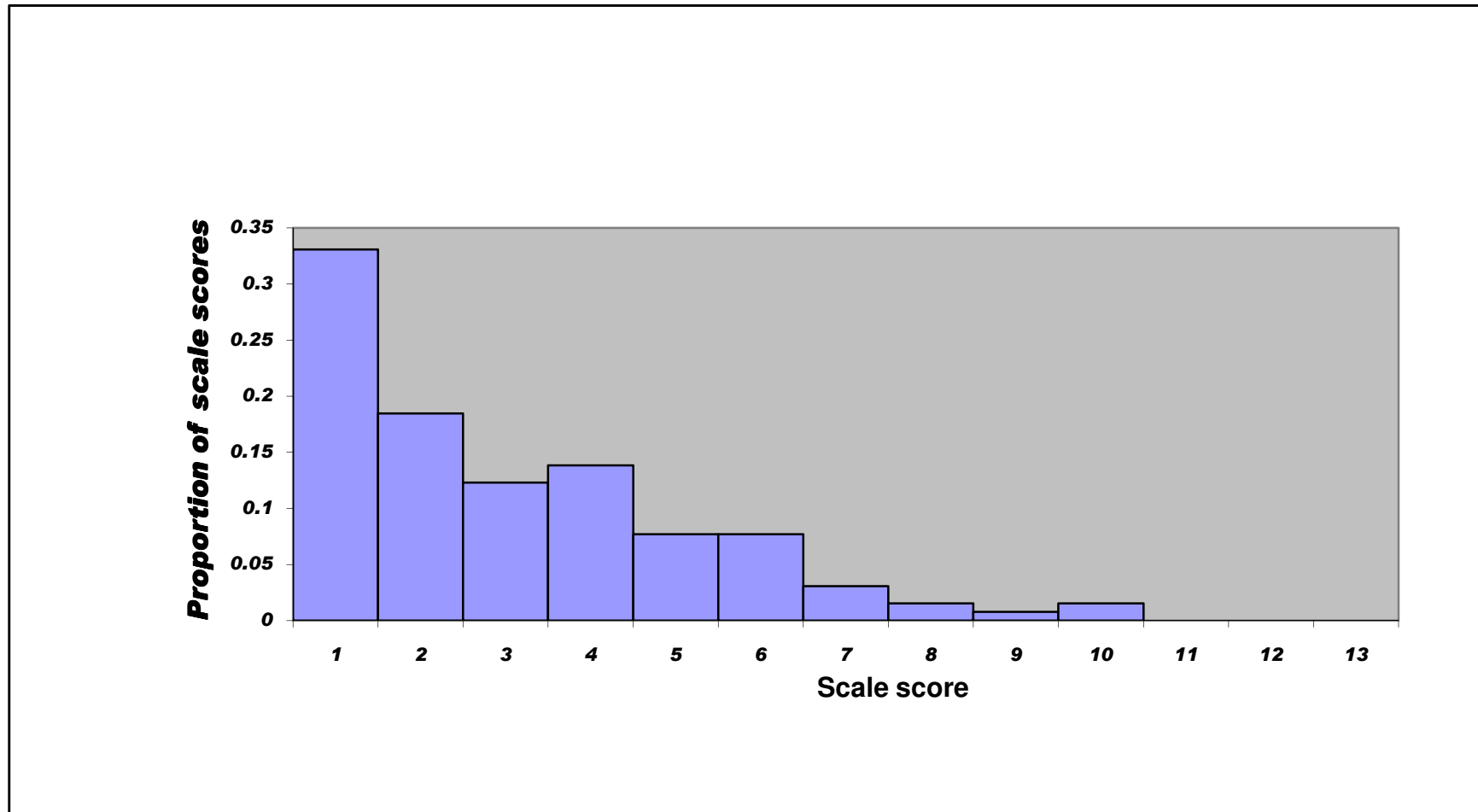
Proportion of scale scores on WAIS-III for IQs in 70s



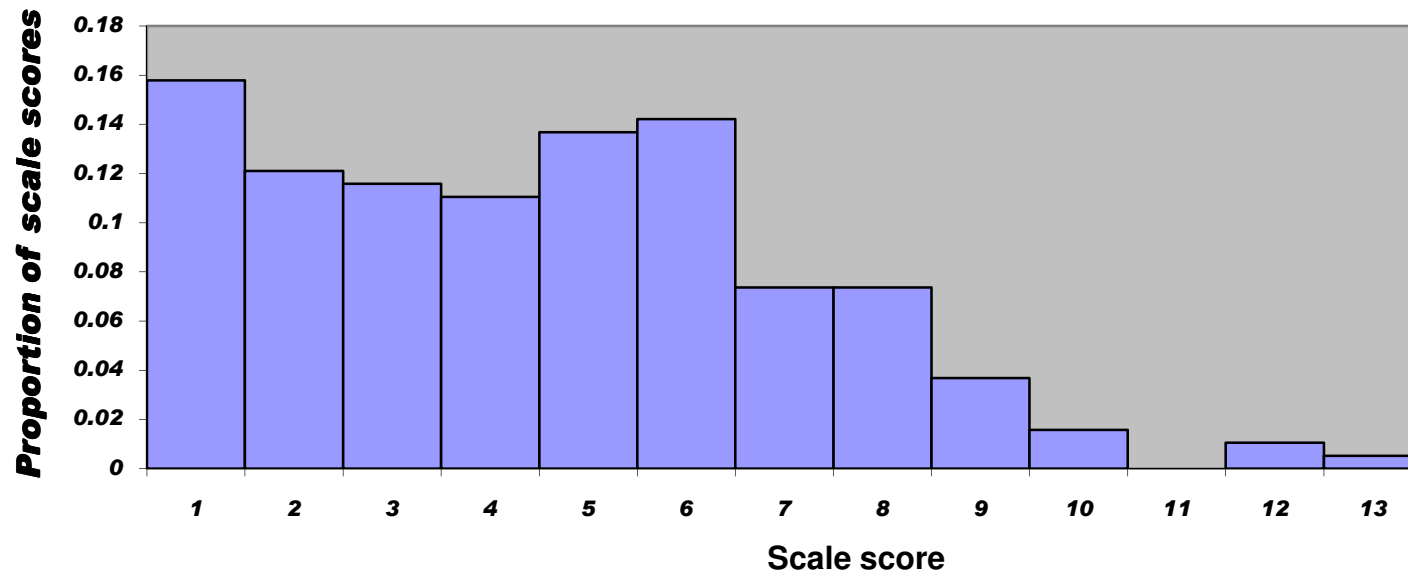
Percentage of scaled scores on WISC-III for IQs in 40s



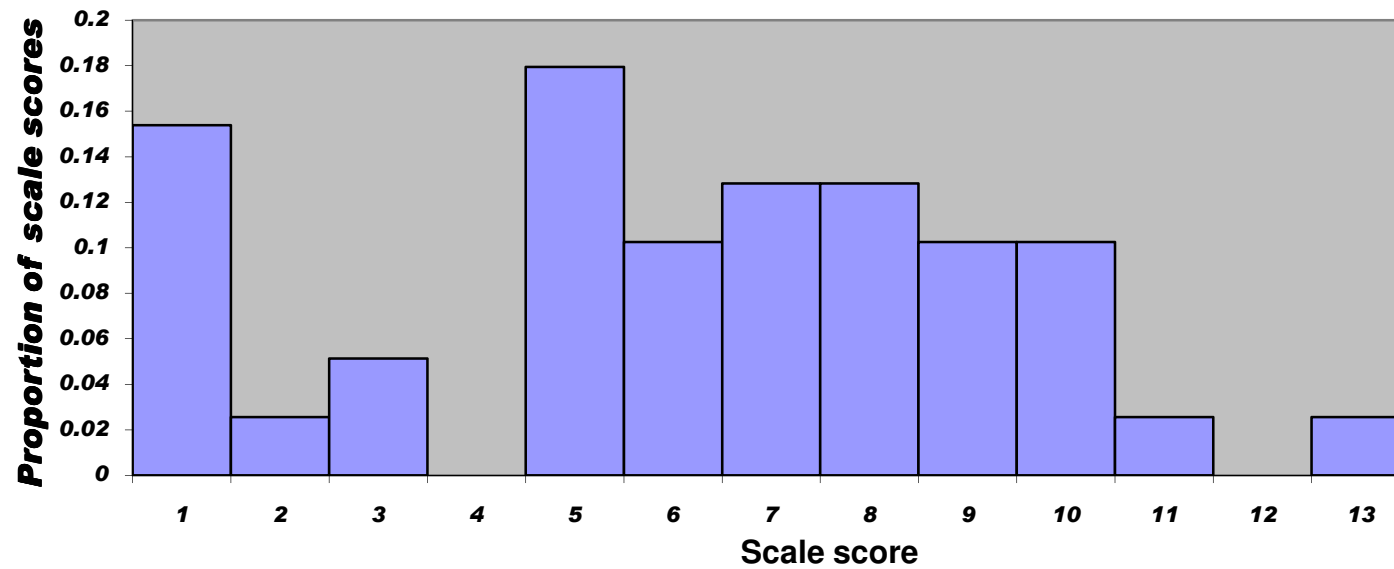
Percentage of scale scores on WISC-III for IQs in 50s



Percentage of scale scores on WISC-III for IQs in 60s



Percentage of scale scores on WISC-III for IQs in 70s



Criteria for Scaled Score 2 on WISC-III and WAIS-III

Coding

WISC-III

WAIS-III

raw score 39

raw score 14

Criteria for Scaled Score 2 on WISC-III and WAIS-III

WISC –III Block Design

Raw score 29

Completion of one 2-block model and six 4-block models gaining full bonus points for time on three of the models.

WAIS-III Block Design

Raw score 3

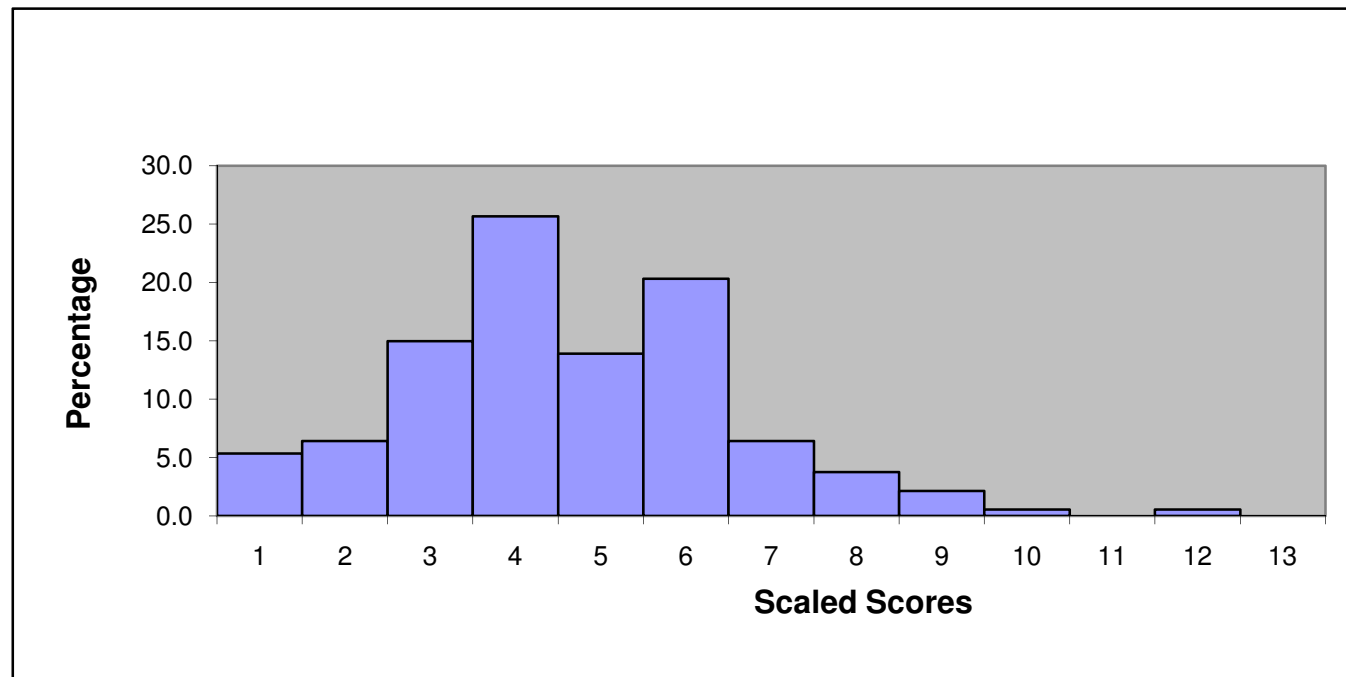
Completion of two 2-block models, being given a second trial on one model if an error occurred on the first trial.

Gordon et al (2010)

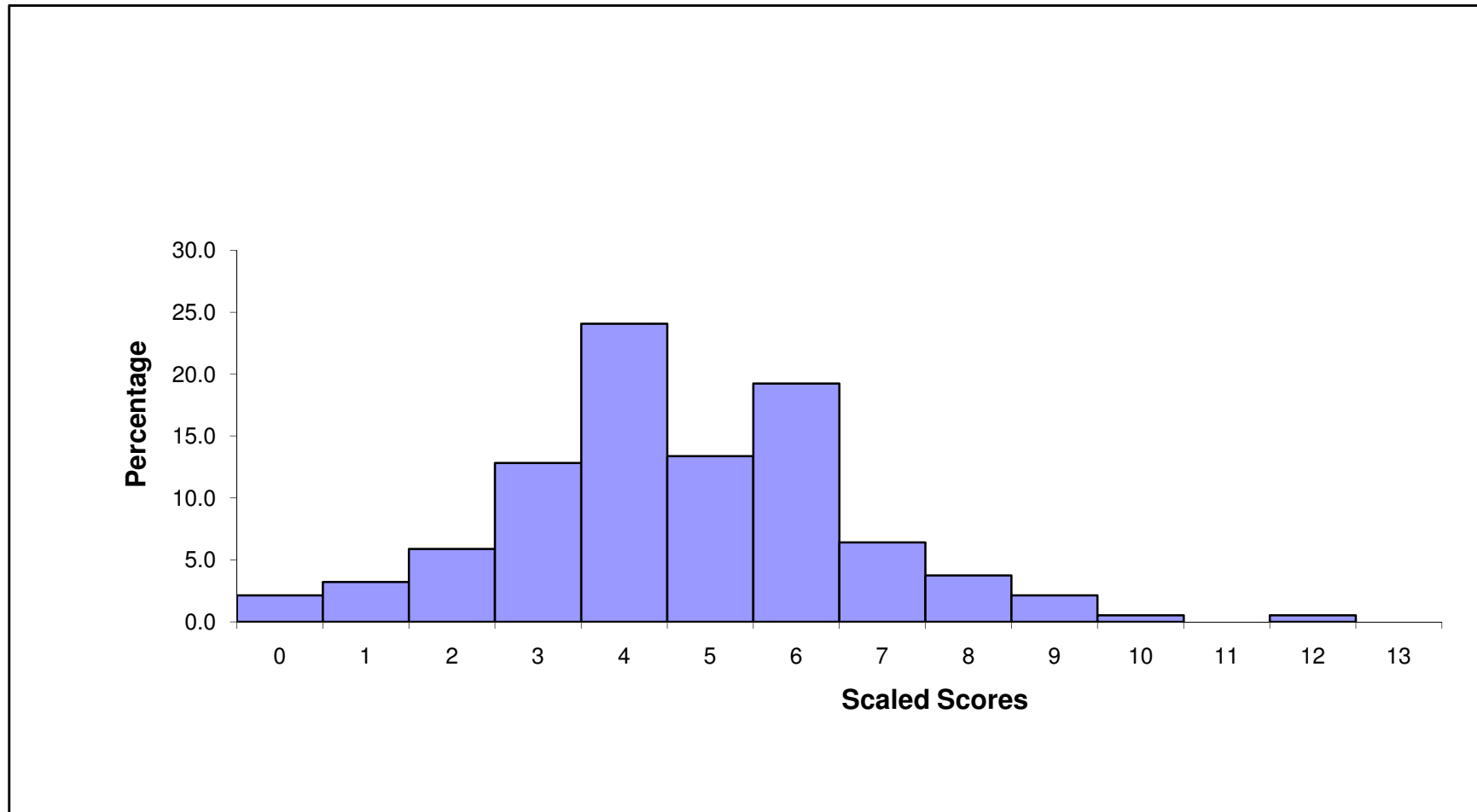
Gave the WISC-IV and WAIS-III to seventeen 16-year-olds in special education.

	WISC-IV	WAIS-III	dif	r
FS IQ	53.00	64.82	11.82	.93

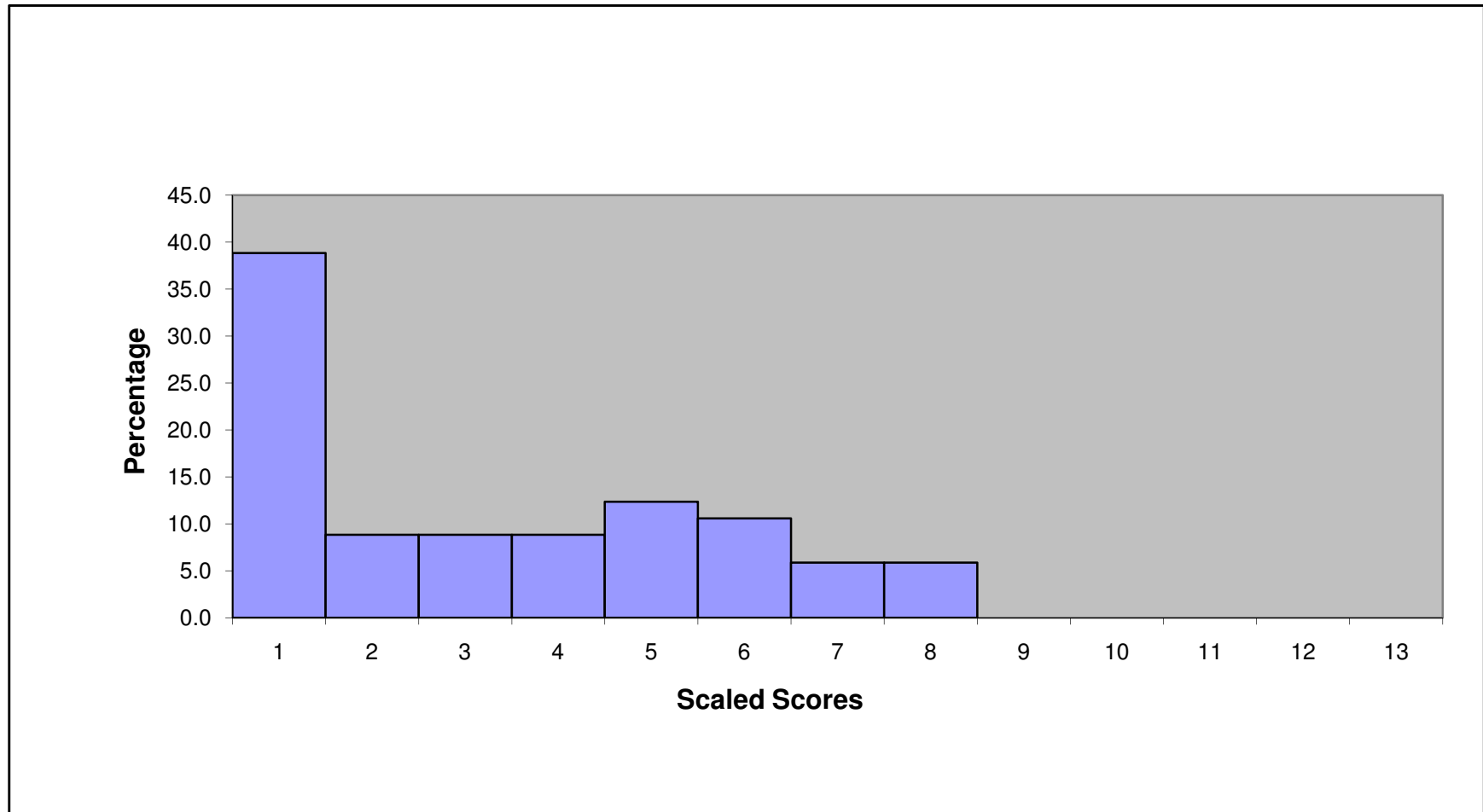
Distribution of Scaled Scores WAIS-III



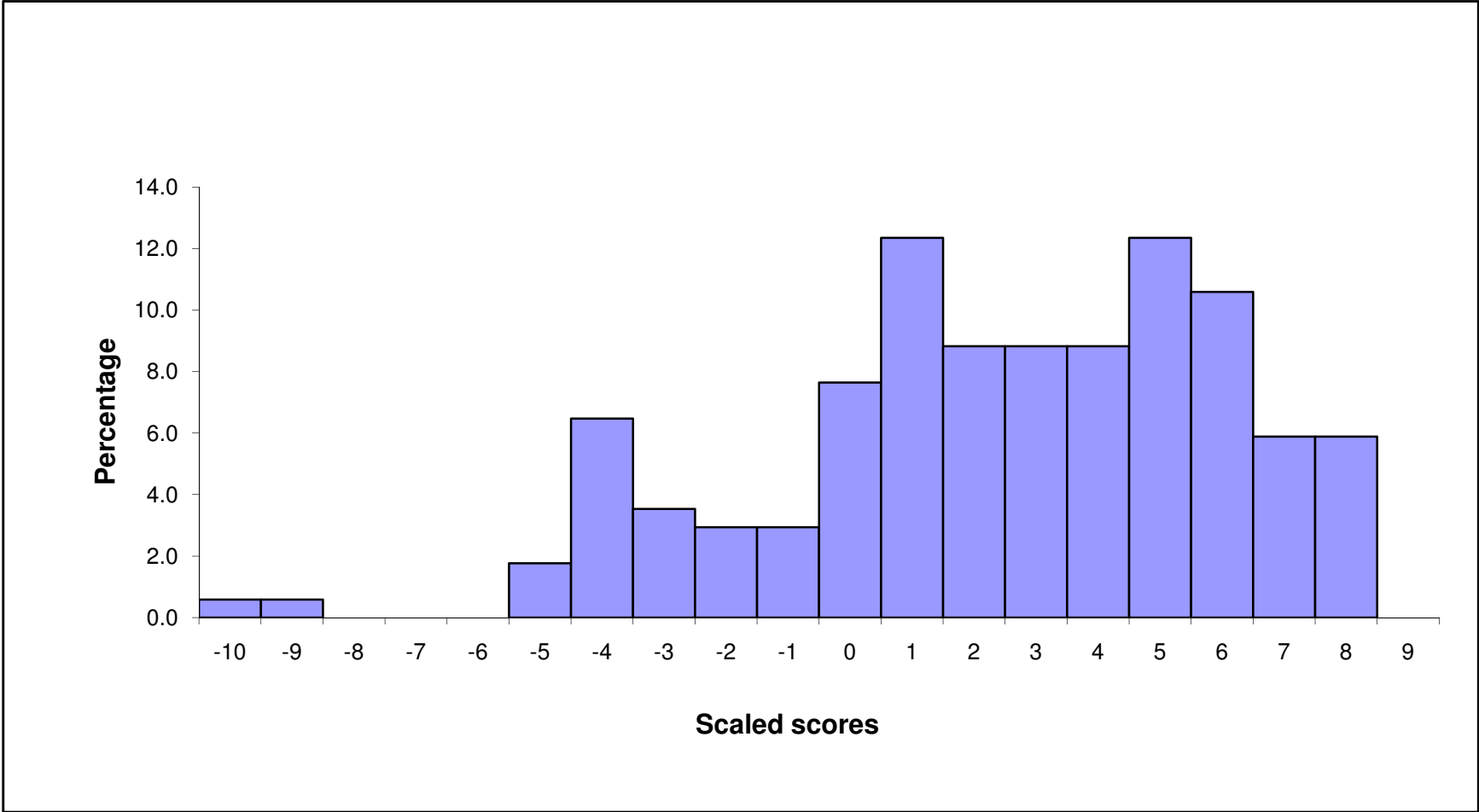
Distribution of Scaled Scores corrected for Floor Effect (WAIS-III)



Distribution of Scaled Scores (WISC-IV)



Distribution of Scaled Scores Corrected for Floor Effect (WISC-IV)



WISC-IV

	Subjects	Uncorrected	Corrected	Difference in
		WISC FS IQ	WISC FS IQ	FS IQs
	1	41	25	16
	2	58	56	2
	3	57	54	3
	4	40	13	27
	5	54	54	0
	6	60	60	0
	7	55	54	1
	8	40	26	14
	9	72	72	0
	10	60	60	0
	11	58	58	0
	12	52	52	0
	13	40	25	15
	14	40	9	31
	15	48	42	6
	16	58	58	0
	17	68	68	0
Mean		53.0	46.0	

Conclusions

- WAIS-III floor effect could be corrected.
- The accuracy of the WISC-IV must be severely compromised by floor effects.
- WISC-IV floor effect should be corrected but it is not clear by how much.