Contents

EDITORS' PREFACE	
1 Introduction ALAN DAVIES	I
2 Basic Concepts in Testing ELISABETH INGRAM	11
1 Testing and language learning	11
2 Measurement	12
3 Test requirements	15
3.1 Reliability	15
3.1.1 Stability reliability	16
3.1.2 Equivalence reliability	16
3.2 Validity	18
3.3 Correlations	22
4 Norm-referenced versus criterion-referenced testing	26
5 Tests and experiments	32
6 Practical work	35
3 The Construction of Language Tests ALAN DAVIES	38
1 Introduction	38
2 Aims and purposes of testing	41
2.1 Research	41
2.2 Progress	42
2.3 Guide to curriculum	42
2.4 Representing terminal behaviour	43
3 The influence of programmed instruction	43
4 Types of test	44
4.1 Uses of tests	44
4.1.1 The four uses	45
4.1.2 Summary	48

4.2 Examinations and tests	49
4.2.1 Examination/test levels	49
4.2.2 Standardized tests	50
4.2.3 Ad hoc tests	51
4.2.4 Traditional examinations	52
4.2.5 New types of examination	52
4.3 Types of test levels and skills	54
5 Demands on language tests	55
5.1 Test criteria	55
5.2 Test virtues	57
5.2.1 Reliability	57
5.2.2 Validity	58
5.2.3 Types of validity	58
5.2.4 Schema for education	63
6 Language test analysis	65
7 Teacher made tests	69
7.1 Proficiency and achievement tests	69
7.2 Selection of language areas for testing	70
7.3 Language analysis	71
7.4 Work sample analysis	71
8 Item writing	76
8.1 The framework of a test	, 76
8.2 Examples of items	78
8.3 Conclusion	100
9 Practical work	100
10 Further reading	104
	,
The Design and Interpretation of Experiments	
RUTH CLARK	105
I Introduction	105
2 Measurement	107
2.1 The choice of an adequate measure	107
2.2 Measurement: further sources of bias	109
3 Control	112
3.1 The natural experiment	112
3.2 The controlled experiment	113
4 Interpretation of results	116
4.1 Spanish-teaching experiment: nominal data	117
4.2 Training in the use of pronouns: ordinal data from	,
independent groups	118

	4.3 Understanding of logical connectives: ordinal data from	
	related groups	122
	4.4 Birth weight of normal and speech-retarded children: interval data from independent groups—subject variable	126
	4.5 Summary of the four studies	130
	4.6 Dispersion	131
	5 The advantages and limitations of certain research designs	133
	5.1 Related subject designs and the restriction of variation	133
	5.2 Designs with a subject variable	137
	6 Sampling	138
	7 Randomization	138
	8 Conclusion	139
	9 Practical work	141
	10 Acknowledgements	I 44
5	Procedures and Computations in the Analysis of Experiments	;
Ĭ	RUTH CLARK	140
	1 Introduction	146
	2 Analysing the contingency table	147
	2.1 Calculating expected frequencies	14
	2.2 The chi-squared test—calculating χ ²	148
	3 Frequencies, the median and ranking procedures	149
	3.1 Frequency tables	140
	3.2 Cumulative frequency distributions and the median	150
	3.3 Assigning a rank to each score	15
	3.4 Sums of ranks and sums of ranks of differences	152
	3.5 The calculation of U	15
	4 Conclusion	156
	5 Practical work	150
6	Statistical Inference RUTH CLARK	158
	1 Introduction	158
	2 The binomial distribution—probability and significance	150
	3 The normal distribution and standard scores	16
	4 The final steps in the analysis	172
	4.1 Mann-Whitney U test—for comparing independent groups	
	by means of the sum of ranks	173
	4.2 Sign test—for comparing related groups using number of	•
	positive and negative differences	173
	4.3 Wilcoxon matched pairs signed ranks—for comparing related	
	groups using the sum of ranks of differences	174

4.4 Test of difference between means—for independent samples	
where the variable is on an interval scale and normally	
distributed in the population	175
4.5 Chi squared and median tests for analysing contingency	
tables	176
4.6 Summary	179
5 Increasing the sensitivity of an experiment	179
5.1 Sample size	180
5.2 The control of variability	180
6 One-tailed and two-tailed hypotheses	181
7 Factors affecting the choice of tests	182
7.1 Level of measurement	182
7.2 Parametric tests	184
7.3 Power	184
7.4 Normalization of scales	184
8 Conclusion	185
9 Practical work	185
10 Further reading	186
Appendix I: Some Statistics used in Language Tests	187
	-
Method for working rank order (Spearmen) correlations	187
 Method for working rank order (Spearman) correlations Formula and method for working product moment correlations 	189
4 Formula and method for establishing equivalence reliability	190
Kuder-Richardson (21)	194
5 Method for finding square roots by using logarithms	198
Appendix II: Statistical Tables	200
A Table of probabilities associated with values as extreme as observed	200
values of z in the normal distribution	200
B Table of critical values of chi square	200 202
C Table of probabilities associated with values as small as observed	202
values of x in the binomial test	203
	-
ANSWERS TO PRACTICAL WORK	204
GLOSSARY OF SYMBOLS	222
REFERENCES	224
INDEX OF NAMES	227
SUBJECT INDEX	229