Psychometric Assessment, Statistics and Report Writing

An introduction for psychologists, teachers and health professionals

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Published by
Pearson
Assessment
80 Strand
London WC2R 0RL

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Printed in the United Kingdom

978 0 749163 77 8

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Introduction

This book is designed primarily to support users of psychometric tests. It provides specialist teachers, psychologists and other health professionals with a practical reference book on basic statistical methods to aid them in their diagnostic interpretation of psychometric test scores when assessing children, young people and adults with special educational needs and specific learning difficulties. It offers a complementary resource to published test scoring and reporting software. It acknowledges that assessors often need to have available practical guidance and references on a number of statistical matters, particularly as the range of available tests is now extremely wide.

The level of statistical information provided is suitable for those UK teachers who are either training for their practising certificate in special education or seeking renewal of their certificate in order to be deemed as appropriately trained and safe to practice. It will also be helpful to experienced specialist teachers and psychologists who are practising as diagnosticians but who feel that they need additional help with their understanding and efficient application of a range of statistical concepts and approaches. Trainee and newly qualified educational and clinical psychologists in the UK will also find the book useful as an aid to their induction to fieldwork assessment practices and their CPD requirements for maintaining their HCPC professional registration. The book will be particularly relevant for those professionals involved in providing reports for clients who require assessments for consideration of eligibility for access arrangements for formal examinations such as GCSE/GCE and Disabled Students' Allowance (DSA).

The book includes references to a range of contemporary psychometric tests. The examples are selected predominantly from tests published or distributed by Pearson Assessment. The book draws on the tests' standardisation data and encourages users to adopt a critical stance when selecting tests for diagnostic purposes. It focuses on common mistakes and misunderstandings made by assessors when they attempt to interpret psychometric information for the purposes of providing diagnostic reports for their clients. In doing so, it is likely to be of significant help by ensuring that these professionals can be confident that their conclusions reflect sound principles of statistical interpretation and hypothesis-testing. Case examples and scenarios are given which are of the type commonly experienced by professionals, thereby making it relatively easy for them to be applied within their own contexts of need. Relatively simple *Excel* formulae and table creations are introduced to encourage professionals to establish incrementally a repertoire of reference sources, statistical tools and personal overview data relating to their assessment inputs. Tips are given on how to merge statistical data into reports and how to insert charts directly from data sources, thus making more efficient the report writing process and the gathering of overview data across assessments.

The book's early chapters are arranged to give case examples with related summaries of the statistical issues relevant to the cases being investigated. As the case examples continue, the statistical issues are expanded and gradually covered in more depth, enabling the reader to evolve their understanding and learning in a controlled way, yet still anchoring their acquired knowledge to the practical examples given. Later chapters give information on more complex means of interrogating psychometric information and are suitable for the more advanced and knowledgeable diagnostician.

Above all, it is hoped that the book encourages those involved in the diagnostic process of assessing clients' needs to adopt an inductive stance to their assessment framework. Assessment is not testing and testing is not assessment. The assessor needs to be continuously introducing and refining hypotheses, carefully selecting from a wide range of suitable tests. Each assessment needs to be fit for purpose, individualistic in style, and not pre-determined in such a way that the assessor goes into automatic pilot by administering the same core tests to all clients. Hence having the knowledge and confidence to compare and interpret scores across tests is an essential requirement for today's diagnostic assessor.

It is important to note that as new editions appear of the tests used for illustrative purposes, it is likely that the quoted reference tables and page numbers will not remain accurate. However, it is anticipated that similar tables/formulae will be found in different editions to aid one's understanding of each concept introduced. Where references to older tests occur, this is to illustrate particular concepts with tests that are currently accepted by professional organisations. Similarly, Microsoft Office *Excel* 2010 is used in this book, which is

likely to be updated. Examples may differ from the procedures needed in other versions. Current legislation will also change, for example, the statement of special educational needs will be replaced by an Education, Health and Care plan in 2014 (Petersen, 2012).

It should be noted that throughout the book the following convention has been adopted: the feminine personal pronoun is used to denote the assessor and the masculine personal pronoun is used to denote the person being assessed.

Dr. Barry Johnson is Principal Educational Psychologist and Head of Assessment Services for Dyslexia Action, formerly known as The Dyslexia Institute. He is a member of the UK's Specific Learning Difficulties Assessment Standards Committee (SASC) and its sub-committee, the Specific Learning Difficulties Test Evaluation Committee (STEC). Barry has worked as an educational psychologist for 39 years in many settings in the UK and is an approved assessor for the British Psychological Society's qualification 'Test User: Educational Ability/Attainment (CCET)'. He has significant experience in the teaching of psychometrics to teachers and other professionals as well as advising on quality assurance parameters for psychologists' and teachers' diagnostic assessment and report writing needs across a wide area of educational and clinical settings. Barry provides assessment reports for the legal arena, including UK SENDIST hearings, and gives second opinions on borderline and complex cases involving the psychometric assessment of clients with special educational needs.

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Acknowledgement

The authors would like to thank Rick Portsmouth, educational psychologist and Director of Dyslexia North, for his comments and advice on draft sections of this book.

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