REVIEW: An Adventure in Statistics: The Reality Enigma

Prism: Casting New Light on Learning, Theory and Practice
http://prism-journal.blackburn.ac.uk/
ISSN 2514-5347
Vol. I (1): pp. 195-199

VAL TODD
University Centre at Blackburn College
valerie.todd@blackburn.ac.uk

Field, A. and Iles, J. (2016). An Adventure in Statistics: The Reality Enigma. London: Sage Edge. pp.768.

Having relied upon Field's award winning book *Discovering Statistics Using IBM SPSS Statistics* (4th edition) as a research methods key text for some years, I was excited to find that he had written a new quantitative research methods text in the form of a fictional novel. With *An Adventure in Statistics: The Reality Enigma,* Field has created a quantitative research methods text book aimed at undergraduate students with limited knowledge of mathematics and who would prefer to avoid the subject, but who are required to use statistics for research projects. Anxiety about statistics is reported by up to 80% of undergraduates in the social and behavioural sciences (Williams, 2010) and this can lead to fear of engaging with quantitative research methods. To overcome this anxiety, the premise of the book is to wrap the statistical procedures in a futuristic action novel based around the central character, musician Zachary Slade, a non-mathematician who reluctantly gets involved with the research process in a bid to find his missing girlfriend Alice. The story is devised as the motivator for reading the book, with the statistical content being picked up on the way, and to this end, the book is designed to be read from cover to cover like a traditional novel.

Novice statisticians can relate to the central character, who also has little mathematical understanding at the beginning of the saga and therefore requires concepts to be explained in simple terms. Each chapter begins with Zach embarking on the next step of his journey, which provides the context for the statistical procedures covered in the chapter, and ends with a glossary of key terms and puzzles to apply the learning. The book is thorough in its approach and systematically builds mathematical understanding throughout and learning is well supported by a plethora of online materials for both lecturers and students.

The book achieves its primary goal of providing a consistent narrative as a context for understanding abstract mathematical concepts, thus making the fundamental statistical

content more accessible for the intended audience. Moreover, because the author assumes no prior knowledge of statistics and explains all mathematical principles and notation in simplistic terms, it is well suited to students from arts based disciplines who may have low mathematical self-efficacy. The quirky approach to the storytelling, involving many statistical principles being explained by a character called Professor Milton Grey (a cat), the use of humour, and the regular inclusion of short comic strips, allows the reader to meander through the statistical concepts on the wave of the story to develop mathematical understanding without being paralysed by fear.

The book is comprehensive in its approach and systematically covers topics from the fundamental assumptions of the research process and understanding research journal articles, through to a range of descriptive and inferential statistics as far as factorial designs. It is therefore a resource that can be used throughout an undergraduate degree programme and as far as some postgraduate study.

From a teaching and learning perspective, the book is thorough and fosters a deep approach to learning by developing a conceptual understanding of the statistics used because readers are required to work out the statistical procedures using a calculator, rather than simply following a few steps on a statistical computer package that will provide the correct answer, but no understanding of what the answer means. The book is also a good resource for applying and reinforcing understanding because after each small step, learners are invited to 'check your brain' with a small task to apply the learning before moving on to the next step, and this is reinforced at the end of each chapter with a series of larger tasks where the skills learned are combined. There are also a range of online resources including multiple choice tests, which can be used to consolidate learning and to promote independent learning.

Although the novel is engaging and the statistical content is set at an appropriate level, at 17 chapters long it could be overwhelming for students who already have an aversion to quantitative research methods, particularly if the book was being used independently. In some ways the book has been too ambitious, with the attempt to be thorough making the content too broad, and it would possibly work better as a series of short books. If the book was used as a key text for a research methods module, it would need to be a yearlong module to cover all of the chapters. The book could however, be used in the same way as a traditional research methods text with readers dipping in and out of each statistical concept and reading the chapters independently of each other, but this would detract from the premise of the book and render the fictional story aspect redundant.

The book refers to the standard statistical computer packages R and SPSS, and explains output tables. However, there is no detailed guidance on how to use the statistical packages, and in the real world, these computer packages would be used instead of a calculator, so more savvy students would possibly struggle to see the point of learning how to calculate the statistics by hand when they are also expected to learn how to operate the computer packages. This is also an area where an attempt at thoroughness may lead to redundancy or confusion, as students are likely to be using either R or SPSS, but not both.

I thoroughly enjoyed reading *An Adventure in Statistics: The Reality Enigma* and I would recommend it for students who genuinely wanted to understand the research process and develop their own skills, and who were prepared to invest the time in reading the book. The book may be less appropriate for the time-poor student who just wants to pass the module and get it out of the way without really getting to grips with the statistics. The bold premise of this book is sound and the fictional narrative distinguishes it from the traditional dry quantitative research methods texts, and if the story can motivate reluctant or fearful students to engage with the subject, this has to be a clear strength of the book. As with many things in life, what you will get from this book will depend largely on what you are prepared to invest.

References

Field, A. (2013). *Discovering Statistics Using IBM SPSS Statistics, 4th Edition.* London: Sage Publications Ltd.

Williams, A.S. (2010). Statistics Anxiety and Instructor Immediacy. *Journal of Statistics Education, 18(2)*, pp. 1-18.