(Book Review)

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Textbook Details:
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Research Methods is unique. It exacts deeper insights from researchers resulting in validated proofs using rigorous scientific methods while being flexible about the selection and compatibility of the methods, interpretation of the results, and scope of the research. The extent of research methods is emergent in nature. Every significant piece of research not only contributes to the evolution of the human knowledge frontier, the ‘what’, but also enriches the process mechanisms underlying research, the ‘how’. There are hundreds of books, articles, notes, tutorials, guidelines, sites, blogs, cases, and clips on research methods. Many of them attempt to generalise the applicability of methods. That is, a single set of methods could be applied over a wide range of research questions across multiple subject domains. Some of them attempt to specialise, such as ‘research methods in education’, where the methods are grounded and tuned specifically to the domain of Education. This book belongs to the later. Further, it takes a rather extreme approach to customise research methods by outlining specific research processes that researchers in a particular academic institution are expected to adhere to. It still serves as an excellent reference manual for general readers to have an all-encompassing view on research methods in addition to associating institution-specific (Technical University of Graz) processes to methods.

The book outlines 17 key topics including ‘how to find a research topic’, ‘systematic literature review’, ‘English as a language of science’, ‘research methods in HCI’, ‘data analysis’, ‘presenting your work – talk’, ‘target: conferences’, and ‘target: research grants’. Roughly, the first half of the book presents material that seemingly corresponds with workflow processes that a researcher at the Technical University of Graz is expected to follow. The second half introduces research skills such as presenting a piece of research in forms such as poster, talk, and writing, targeting publication avenues such as journals and conferences, and finally securing research grants.

Introduction to the background of research is crisp, quickly enabling the reader to want to read more. This immediately follows a timely introduction to abbreviation and acronyms, which could use some additional entries to cover context-specific abbreviations (for example, LV ?06.117 in page 18). The third section is about processes that are meant for researchers at the Technical University. Each step of the process has been outlined, rather than described, and comes with pointers for further reading in sections that follow or elsewhere. This section needs a review for language and formatting.

One of the highlights is the words of wisdom from the author planted throughout the book. For instance, the author asks the readers to seek ‘future outlook’ sections of relevant papers in conference proceedings. Section 4, in particular, has many such practical and strategic points of view borne out of the author’s experience.

Some material could use a revision as in Bloom’s revised taxonomy. Section 5 is a wealth of information on systematic literature review. It categorises the types of literature and exemplifies relevant computational access to securing these literature. The pictures that exemplify could use a higher resolution printing to be able to read what exactly they portray. This section also introduces researchers to popular reference software, reference styles, patents, and citation metrics – important topics for new researchers.
Section 6 on English as the language of science is sympathetic to researchers at the Technical University who might require additional guidance in writing in English. Section 7 is about the format of the thesis, again specific to the University’s requirements. There is some coverage on plagiarism but a discussion on research ethics is surprisingly missing. Sections 8, 9, and 10 introduce research designs and techniques in clear terms with detailed explanations that differentiate multiple designs. Importantly, these designs have been selected for specific use in the domains of computer science and informatics, particularly in the area of human-computer interaction.

Section 11 minimally introduces statistics and their interpretations. Still, these outlines are terse and offer exactly what a new researcher is looking for. Sections 12, 13, and 14 discuss effective ways of presenting posters, giving a talk, and writing a document. Again, these sections are customised for the researchers at the Technical University while offering some guidelines for general readers. Section 14 is particularly impressive with its portrayal of a big-picture approach to writing.

Sections 15, 16, and 17 introduce resources for conference publications, journal publications, and funding avenues, respectively. A brief on prioritising and selecting conferences and journals is missing from these sections. The section on ‘writing project proposals’ is written brilliantly. Undoubtedly, it will be of immense use to all new researchers. The glossary, index and bibliography are expectedly concise.

This book is all about personalised instruction to research methods. It includes highly personal opinions such as ‘avoid wikipedia’ or ‘I require my research students to…’. At the same time, it offers generic introduction to research designs. Those researchers who look for a rather quick introduction to research methods will benefit immensely from this book. Advanced researchers are better served with further readings. This down-to-earth introduction to research methods and research processes will be a revelation to many computing schools. This reviewer highly recommends that schools develop such custom material and offer custom courses on research methods with specific extensions to underlying research processes.