The Psychology of Abilities, Competencies, and Expertise

The goal of this book is to characterize the nature of abilities, competencies, and expertise and to understand the relations among them. The book therefore seeks to integrate into a coherent discipline what formerly have been, to a large extent, three separate disciplines. Such integration makes both theoretical and practical sense because abilities represent potentials to achieve competencies and, ultimately, expertise. Chapter authors (a) present their views on the nature of abilities, competencies, and expertise; (b) present their views on the interrelationships among these three constructs; (c) state their views on how these three constructs can be assessed and developed; (d) present empirical data supporting their positions; (e) compare and contrast their positions to alternative positions, showing why they believe their positions to be preferred; and (f) speculate on the implications of their viewpoints for science, education, and society.

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Preface

Some people study abilities, some study expertise, but few study both. Traditionally, the study of abilities has been seen as relatively distinct from the study of expertise, and the literatures that have developed in these two areas are largely distinct as well.

Ability theorists have argued about alternative factorial, process, biological, contextual, or other models of expertise, but, with few exceptions (such as Howard Gardner), have drawn only sparse links between their studies and studies of expert performance. Individuals with high levels of expertise are simply assumed to have developed these high levels of expertise as a function of their high levels of abilities.

Expertise theorists have argued about what it is that makes someone an expert, such as outstanding information processing or a highly organized knowledge base, or they have argued about how expertise is acquired, for example, through deliberate practice or skilled apprenticeship. They have failed to consider fully the role of expertise in the development and maintenance of expertise, and indeed, few expertise theorists have used any tests of abilities in their research.

Competencies often have been viewed as an endpoint in the study of abilities (for example, as providing criteria against which measures of abilities are validated) or as a beginning point in the study of expertise (for example, as providing a baseline for novices, or at least, nonexperts, against which expertise performance can be compared). Competency theorists have sometimes linked their work to abilities, and sometimes to expertise, but rarely to both.

The result of this separation among the studies of abilities, competencies, and expertise is that the field of psychology lacks relatively
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comprehensive accounts of how abilities, competencies, and expertise relate, for example, through the development of abilities into competencies and later into varying levels of expertise.

The mission of this book is to present alternative viewpoints of the relationships among abilities, competencies, and expertise. The book therefore seeks to integrate into a coherent discipline what formerly have been, to a large extent, separate disciplines. Such an integration makes both theoretical and practical sense, because abilities are of interest because they represent potentials to achieve competencies and, ultimately, expertise.

Psychology students often wonder how there can exist within the field of psychology widely discrepant theories of the same phenomenon. They also wonder how theories can be so well able to account for certain kinds of facts pertaining to a given phenomenon, but not for other kinds of facts. One of the reasons that such puzzles arise is that investigators tend to limit their research to particular paradigms, to particular aspects of phenomena, or both.

For example, one might argue that \( g \) (general intelligence) theorists tend to rely on studies showing the internal and external validities of measures of the so-called general factor of intelligence, but largely discount many studies that show discriminant validity for other, non-\( g \)-based measures. At the same time, multiple-intelligence theorists largely discount the voluminous evidence that seems to favor a general factor. More generally, abilities theorists largely ignore the literature on expertise that shows the importance of deliberate practice in the development of expertise, whereas expertise theorists largely ignore the literature on abilities showing how much difference abilities can make to the attainment of expert levels of performances of diverse kinds. This book integrates both paradigms and multiple facets of what we believe to be three highly interrelated phenomena that force psychological researchers as well as consumers of such research to confront other paradigms and aspects of phenomena that they may not have fully confronted in their past thinking.

The book may be of interest to differential, cognitive, educational, school, industrial/organizational, counseling, and biological psychologists who wish to learn about the relations among abilities, competencies, and expertise. It may also be of interest to educators, cognitive scientists, and cognitive neuroscientists interested in questions related to these constructs. The book has been written at a level comprehensible to advanced undergraduate students.
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Authors of chapters have been asked to do six things in their individual chapters:

1. To present their views on the nature of abilities, competencies, and expertise (including its nature and development)
2. To present their views on the interrelationships among these three constructs
3. To state their views on how these three constructs can be assessed and developed
4. To present empirical data supporting their position
5. To compare and contrast their position to alternative positions, showing why they believe their position to be preferred
6. To speculate on the implications of their viewpoint for science, education, and society

This book is dedicated to the memory of our contributor, colleague, and friend, Michael Howe.

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