CONCEPTS IN PHYSICS
A Comparative Cognitive Analysis of Arabic and French Terminologies

This book offers substantial insight into students' conceptualization of scientific terminology. The current book explores the commonalities and distinctions between Arabic and French physics terms, and the impact of the language disparities on students' understanding of physics terms. This book adopts a new approach to the problem of scientific terminology by exploring physics terms' polysemy, prototypical meanings, and conceptual metaphor and metonymy, which motivates the extension of their meanings. The book also investigates how the linguistic discrepancies and other variables affect the learning of physics by Arab students (particularly Moroccan students). *Concepts in Physics: A Comparative Cognitive Analysis of Arabic and French Terminologies*, whether you are a student of science, a science teacher or lecturer, a translator, or a linguist, is the reference you need. The book will help you comprehend the linguistic and cultural differences between western and non-western physics terminologies (in this book, French and Arabic physics terminologies) and the factors influencing the learning of physics concepts, and thus address the multiple challenges in learning scientific terms and concepts.

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CONTENTS

PREFACE

The present book addresses the problem of scientific terminology in Arab countries in general and Morocco in particular. This issue is of great concern in the fields of science education, language policy and translation. Previous studies on the conceptualisation of scientific terminology centred on the differences in non-western settings between western and non-western languages and cultures, or on the differences in western contexts between ordinary speech and scientific language. In contrast, this book is the first attempt to bridge the divide between studies addressing the differences between ordinary speech and scientific language, and studies addressing the differences between western and non-western languages and cultures. In other words, the book covers the issue in its both manifestations – the difference between non-western scientific terminology and western scientific terminology on the one hand and everyday speech and scientific language on the other. The book draws upon a multidisciplinary background in cognitive linguistics, particularly theories of metaphor and metonymy, and corpus linguistics.

Throughout the author's primary and secondary school experience, his schoolmates and he faced various issues in comprehending scientific concepts though the medium of instruction was French. The reasons for such problems were complex, from the packed curriculum to the lack of practical work in science classes. Changing the medium of education into

Arabic at the primary and secondary school levels in the 1980s emphasised the low progress in students' learning of science.

To date, investigations into the issue of scientific terminology in the Arab world in general and Morocco in particular are still ongoing despite the considerable literature published on it. Previous research centred on some of the problem's external factors: language policy, system and attitude. Despite the prominence of the sociopolitical aspects, it is essential to investigate the other external factors like pedagogical factors and internal factors such as the conceptual structure of science' language to gain a revealing insight into students' *misconceptualisation* of scientific concepts.

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Hicham Lahlou

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