



NEELKAMAL

PEDAGOGY OF SCIENCE EDUCATION



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About the Book

This book '**Pedagogy of Science Education**' aims to encourage student teachers to revisit their own conceptual understanding of Science. It clarifies student teachers' misconceptions related to concepts in science and helps them to look at it from a fresh perspective. A detailed reading of this book will encourage student teachers to grapple with the nature of science and relate it with day to day life. Subsequently, it will enable them to freely express their ideas about various aspects of the nature of science based on their understanding. It will also help student teachers to speak their mind on issues of gender and inclusive practices in science education. This book is divided in 6 units. Each unit provides scope to student teachers to dive deep into the science concepts and issues.

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Dr. Farzana Shehla is a Post Doctoral Fellow (ICSSR) at Department of Education, Osmania University, Hyderabad. She published more than 25 research articles on Early Childhood Behavioural issues and Science related issues in National and International Journals. She has more than seven years of experience in teaching. She is also the author of the books entitled 'Children at Early Childhood' and 'Knowledge and Curriculum' and 'Inclusive Education'.

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Dr. Najma Unnisa is presently working as a Professor in Ghulam Ahmed College of Education. She has about 28 years of teaching experience. She has participated and published several research papers in National and International Journals. She also has the experience of teaching in America and did two projects there. She was awarded the Best Teacher Award in America. Her areas of interest are Curriculum, Research, Assessment and Science Methodology.

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Preface

Science is the concerted human effort to understand the functions of the natural world in a better way with observable physical evidence. Public policy decisions that affect every aspect of our lives are based on scientific evidences. And, of course, the immensely complex natural world that surrounds us, illustrates infinite scientific concepts. As our children are growing up in technologically and scientifically advanced world, they need to be well versed in science to succeed. And here begins the actual role of a science teacher.

A science teacher needs to be technologically sound and must have in-depth knowledge of the concerned subject. Apart from knowledge of methods of science teaching, use of appropriate strategies are some of the desirable characteristics of a science teacher without which it is difficult to achieve the goals of science education.

This book 'Pedagogy of Science Education' aims to encourage student teachers to revisit their own conceptual understanding of Science. It clarifies student teachers' misconceptions related to concepts in science and helps them to look at it from a fresh perspective. A detailed reading of this book will encourage student teachers to grapple with the nature of science and relate it with day to day life. Subsequently, it will enable them to freely express their ideas about various aspects of the nature of science based on their understanding. It will also help student teachers to speak their mind on issues of gender and inclusive practices in science education.

This book is divided in 6 units. Each unit provides scope to student teachers to dive deep into the science concepts and issues.

The first unit entitled 'Nature and Scope of Science and Children's Ideas in Science' enlightens the readers with the nature, characteristics, structure and development of science. It also discusses the basic aspects of science viz. subject matter in sciences and social sciences, nature of scientific method, values associated with science, children's ideas related to science concepts and ways of probing, documenting and analyzing those ideas. This unit also deals with the significance of science