

PEDAGOGY OF BIOLOGICAL SCIENCE

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PREFACE

Because biology has been associated with humans since the beginning of time, it is ranked first in terms of research importance among all scientific disciplines. Man has been curious about many aspects of life processes, including birth, growth, and death, as well as health and illness, since the beginning of time. However, because of biology, humans rely on plants and animals for clothing, food, and shelter—all of which are necessities for survival. Maybe it was man's basic need to understand living things in order to extract the most benefits possible from them. Even though biology is the study of life, it is now primarily focused on the study of agriculture, animal husbandry, microbiology, health, and related fields. Any scientific field can no longer be studied in isolation because it incorporates concepts from physics, chemistry, and other fields.

The nature and scope of biology, including the study of living things and their structure, function, evolution, etc., are covered in Pedagogy of Biological Science. It outlines some of the main objectives of biology education, including assisting students in comprehending health, agriculture, life processes, and more. The foundational values of science, such as curiosity, open-mindedness, and the use of evidence-based inquiry, are also covered in the document. Teaching students not only facts but also responsible science application is one of the primary goals of biology education. This helps students become responsible, democratic citizens.

Objectives:

- To learn about the characteristics and application of biological science.
- To comprehend the goals and purposes of biological science education.
- To investigate the importance and necessity of biological science education.
- To investigate the benefits of biological science education

Abbreviations

American Ornithologists' Union (AOU)

Augmented Reality (AR)

Biological Sciences Curriculum Study (BSCS)

British Trust for Ornithology (BTO)

Coarse Woody Debris (CWD)

Computer Aided Instruction (CAI)

Computer Assisted Instruction (CAI)

Computer Assisted Learning (CAL)

Computer Based Education (CBE)

Computer Based Instruction (CBI)

Computer Enriched Instruction (CEI)

Computer Managed Instruction (CMI)

Field-Based Experiential Learning (FBEL)

Gas Chromatography (GC)

High-Performance Liquid Chromatography (HPLC)

Human Resources (HR)

Indian Institute of Sciences (IISc)

Indian National Junior Science Olympiad (INJSO)

Information and Communication Technology (ICT)

Kishore Vaigyanik Protsahan Yojana (KVPY)

Learner-Centered Pedagogy (LCP)

MeSH (Medical Subject Headings)

Mixed Reality (MR)

National Council for Teacher Education (NCTE)

National Council of Science Museums (NCSM)

National Curriculum Framework (NCF)

National Education Policy (NEP)

National Open University of Nigeria (NOUN)

National Teachers' Institute (NTI)

Natural Learning Environments (NLE)

Personal Protective Equipment (PPE)

Polymerase chain reaction (PCR)

Professional Development (PD)

Royal Society for the Protection of Birds (RSPB)

Schools and Colleges Affiliation Scheme (SCAS)

Science Teachers Association of Nigeria (STAN)

Standard Operating Procedures (SOPs)

Teaching, Learning and technology (TLT)

The National Council of Educational Research and Training (NCERT)

Virtual Reality (VR)

Volatile Organic Compounds (VOCs)

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ABOUT THE AUTHOR



Dr. Somashekhara M stands out as a highly accomplished academic professional, deeply committed to education and continuous learning. With a robust educational foundation, including an M.Sc. in Botany and Psychology, an M.Ed., a Ph.D. in Education, and a Post Graduate Diploma in Computer Applications (PGDCA). His qualifications reflect diverse interests and expertise across multiple fields. His academic journey is complemented by his success in examinations, including NET (National Eligibility Test), KSET (Karnataka State Eligibility Test), and TET (Teacher Eligibility Test), underscoring his mastery of subjects relevant to teaching and educational leadership.

Dr. Somashekhara M's career trajectory is marked by his extensive teaching experience. His tenure includes roles as a lecturer and an Assistant Professor, where he contributed to shaping the academic and professional paths of numerous students. His current position as the Principal of Al-Mahmood B.Ed. College in Shivamogga places him in a leadership role where he influences teacher education, shaping the next generation of educators. Under his leadership, the college has likely benefited from his strategic insights and dedication to enhancing the quality of education.

Beyond his administrative and teaching roles, Dr. Somashekhara M has been a prominent voice in educational research and innovation. He has authored numerous publications and delivered presentations on topics that sit at the intersection of educational technology and pedagogical innovation. His research interests emphasize the application of educational psychology and the critical integration of technology in the education sector. This reflects his recognition of the evolving needs of modern education, where educational psychology and technological competence are key components of effective learning.

His academic involvement extends to his active participation in national and international seminars, workshops, and conferences. These platforms allow him to engage in discussions about the latest trends in education and the role that technology plays in shaping contemporary teaching methodologies. His contributions to these forums reflect not only his expertise but also his dedication to keeping pace with the ever-changing landscape of education.

Dr. Somashekhara M has participated in orientation programs and panel discussions on the National Education Policy (NEP) 2020. His insights into the policy highlight his commitment to educational reform and his efforts to contribute meaningfully to shaping educational practices at the national level. Through these activities, he emphasizes the importance of aligning teaching practices with evolving educational frameworks to provide students with the best possible learning experiences.

In addition to his academic pursuits, Dr. Somashekhara M's career demonstrates a strong inclination towards leadership and mentoring. He is not only shaping the educational environment at his college but also mentoring educators, ensuring that teaching practices evolve to meet the needs of both students and the broader academic community.

Dr. Somashekhara M is a visionary academic leader whose contributions span across teaching, research, discussions, and educational leadership. His work in integrating educational psychology, and technology into the learning process ensures that his influence will continue to shape the educational landscape for years to come.



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