

BRIDGING DISCIPLINES

INTERDISCIPLINARY APPROACHES
FOR TRANSFORMING EDUCATION

Editors:
Tahmeena Khan
Manisha Singh
Saman Raza

Bentham Books

Bridging Disciplines: Interdisciplinary Approaches for Transforming Education

Edited by

Tahmeena Khan

*Department of Chemistry, Integral University
Lucknow, Uttar Pradesh 226026, India*

Manisha Singh

*Department of Education, Integral University
Lucknow, Uttar Pradesh 226026, India*

&

Saman Raza

*Department of Chemistry, Isabella Thoburn College,
Lucknow, Uttar Pradesh 226007, India*

Bridging Disciplines: Interdisciplinary Approaches for Transforming Education

Editors: Tahmeena Khan, Manisha Singh & Saman Raza

ISBN (Online): 979-8-89881-648-3

ISBN (Print): 979-8-89881-649-0

ISBN (Paperback): 979-8-89881-650-6

© 2026, Bentham Books imprint.

Published by Bentham Science Publishers Pte. Ltd. Singapore, in collaboration with Eureka Conferences, USA. All Rights Reserved.

First published in 2026.

Interdisciplinary Learning	63
Critical and Creative Thinking	64
Practical and Problem-Solving Approaches	64
Personalized and Inclusive Approach	66
Collaborative and Project-Based Learning	67
Flexibility for Real-World Challenges	68
Implementation and Impact	69
TRAINING OF TEACHERS TO ADOPT THE STEAM MODEL: KNOW-HOW	73
CHALLENGES AND PROSPECTS	74
CONCLUDING REMARKS	77
ACKNOWLEDGEMENT	77
REFERENCES	78
CHAPTER 5 INTERRELATIONSHIP OF COMMERCE, MANAGEMENT, AND ICT	84
<i>Martha Sharma and Ekta Pal</i>	
INTRODUCTION	84
INTERCONNECTED ASPECTS OF MODERN BUSINESS AND SOCIETY	85
Commerce	85
Management	86
ICT (Information and Communications Technology)	86
ICT in E-Commerce	87
ICT: The Technological Backbone of Modern Business	87
<i>ICT in Commerce and Management Education</i>	87
<i>Understanding Commerce Management</i>	88
The Role of Commerce and Management in the Global Economy	89
<i>Effective management</i>	89
Commerce Management: A Framework for Prosperity	89
KEY FUNCTIONS OF ICT IN BUSINESS	91
Automation	91
Communication	91
Data Management	92
E-commerce Enablement	92
Decision Support	92
Remote Work Capabilities	92
SOME REAL-WORLD EXAMPLES:	93
COMMERCE AS A CATALYST FOR ECONOMIC ACTIVITY	93
Management: The Strategic Engine behind Commerce	94
The Synergy between Commerce and Management	94
Impact on National and Global Prosperity through Commerce, Management, and	
Information and Communication Technology (ICT)	95
Core Functions of Management in Modern Commerce	97
Key functions of commerce management include:	97
Inventory Control	98
<i>Key Benefits:</i>	98
Marketing and Sales Management	98
<i>Key Benefits:</i>	99
Financial Planning and Analysis	99
<i>Key Benefits:</i>	99
Customer Relationship Management (CRM)	99
<i>Key Benefits:</i>	99
Supply Chain and Logistics Management	99

CHAPTER 8

Biology as an Interdisciplinary Subject: Bridging Disciplines for a Deeper Understanding of Life

Shifa Suhail¹, Kashifa Khatoon¹, Arpita Tripathi², Pallavi Awasthi¹, Reena Vishvakarma¹ and Swati Sharma^{1*}

¹ Department of Biosciences, Integral University, Lucknow, Uttar Pradesh 226026, India

² Colvin Talukedar College, Lucknow, Uttar Pradesh 226007, India

Abstract: Biological science has always been portrayed as an interdisciplinary subject. Essentially, botany, zoology, and microbiology deal with all the life forms, while biochemistry relates to all the chemical reactions in living beings. Biophysics and biostatistics have always been a part of biological assays and investigations. From school education to higher studies, currently, biology is a part of the STEM (Science, technology, engineering, and mathematics) education system and curriculum. Although they are distinct, these are related technical disciplines. The term is typically used in the context of education policy or curriculum choices in schools and colleges. The STEM curriculum with experiential learning and appropriate content surely increases students' competency levels. Nowadays, the relation of biological sciences with social, behavioural or neurosciences has also been well established and studied. With the advent of technology, biology was redefined, and new areas of computational biology emerged. Moreover, AI has further elevated the levels and created a lot more sub-branches. Though all these areas of interdisciplinary research were growing in specific research fields, the interdisciplinary nature of the subject is yet to be established in the education system. With the advent of new educational policies such as NEP 2020 in India, these gaps might be filled, and this can lead to a change in students' overall learning and research experience for lifelong learning.

Keywords: AI, Biological science, Interdisciplinary, Lifelong learning, STEM, Teaching-learning.

INTRODUCTION

Biology, defined as 'A branch of science that deals with living organisms and their vital processes' (Webster Dictionary), incorporates the study of plants, animals, and microbes, *i.e.*, Botany, Zoology, Microbiology, along with biochemistry, physiology, genetics, and ecology. It includes the structure and

* Corresponding authors Swati Sharma: Department of Biosciences, Integral University, Lucknow, Uttar Pradesh 226026, India; E-mail: sw_sh@rediffmail.com