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Interdisciplinary Education as a Catalyst for Sustainable Innovation in Management: A Conceptual Perspective in the Context of NEP 2020

Bhavna Kaura Ohri [1*], Kiranpreet Kaur [2]
[1] Associate Professor, University School of Business Studies, Rayat Bahra Professional University Hoshiarpur, Punjab, India
[2] Student, Rayat Bahra Institute of Management, Hoshiarpur, Punjab, India

Corresponding Author: *Bhavna Kaura Ohri

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Abstract

In an era characterised by rapid technological advancements and complex global challenges, interdisciplinary education has emerged as a transformative approach in management studies. This conceptual paper explores the role of interdisciplinary learning in fostering sustainable innovation within management education. Drawing upon recent literature (2020–2025), the study critically examines how the integration of diverse knowledge domains, supported by digital technologies and active pedagogical practices, enhances managerial competencies. The paper is grounded in multiple theoretical perspectives, including Human Capital Theory, the Resource-Based View (RBV), Knowledge-Based View (KBV), and Experiential Learning Theory. It highlights that interdisciplinary education promotes critical thinking, collaborative problem-solving, and sustainability-oriented decision-making. Despite its advantages, challenges such as institutional rigidity, inadequate faculty preparedness, and technological disparities continue to hinder its effective implementation. The paper contributes to the management literature by offering a comprehensive conceptual understanding of interdisciplinary education as a strategic driver of innovation and sustainability in management education.

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1. INTRODUCTION

The landscape of management education is undergoing a paradigm shift driven by globalisation, digital transformation, and sustainability imperatives. Traditional discipline-specific approaches are increasingly insufficient to address multifaceted business challenges that require integrated and holistic thinking. Interdisciplinary education has gained recognition as a critical pedagogical approach that enables the integration of knowledge across functional and conceptual domains. It facilitates the development of managerial competencies that are essential for navigating complexity, uncertainty, and dynamic business environments. Recent studies emphasise that interdisciplinary approaches not only enhance academic learning but also improve the practical applicability of knowledge in real-world contexts. Moreover, the increasing emphasis on sustainability and ethical decision-making in business has reinforced the need for educational models that transcend disciplinary boundaries. Management education must, therefore, evolve to incorporate interdisciplinary frameworks that align with contemporary organisational and societal needs. Management education is increasingly influenced by digital transformation and sustainability concerns. Traditional models fail to address complex decision-making (Mintzberg, 2004). Interdisciplinary education enables integration across domains (Repko & Szostak, 2020), aligning with NEP 2020 (Government of India, 2020).

2. Conceptual Foundations of Interdisciplinary Education

Interdisciplinary education refers to the integration and synthesis of knowledge, methods, and perspectives from multiple disciplines to address complex problems. Unlike multidisciplinary approaches, which merely juxtapose disciplines, interdisciplinary fosters deeper collaboration and knowledge integration. In management education, interdisciplinary enables the convergence of domains such as finance, marketing, human resources, technology, and sustainability. This integration enhances students' ability to develop comprehensive solutions that consider economic, social, and environmental dimensions. The literature suggests that interdisciplinary learning promotes higher-order cognitive skills, including analytical thinking, creativity, and systems thinking. It also encourages students to engage with real-world challenges, thereby bridging the gap between theoretical knowledge and practical application.

3. Theoretical Perspectives

A strong theoretical grounding enhances the conceptual rigour of interdisciplinary education in management.

3.1 Human Capital Theory

Human Capital Theory posits that education and skill development are critical investments that enhance individual productivity and organisational performance. Interdisciplinary education enriches human capital by equipping learners with diverse competencies, making them adaptable and innovative in complex business environments.

3.2 Resource-Based View (RBV)

The Resource-Based View emphasises that unique and inimitable resources contribute to sustained competitive advantage. Interdisciplinary knowledge and skills can be considered strategic resources that enhance an organisation's capacity for innovation and problem-solving.

3.3 Knowledge-Based View (KBV)

An extension of RBV, the Knowledge-Based View highlights knowledge as the most critical organisational resource. Interdisciplinary education facilitates knowledge integration and creation, enabling organisations to leverage diverse expertise for innovation.

3.4 Experiential Learning Theory

Experiential Learning Theory underscores the importance of learning through experience, reflection, and application. Interdisciplinary approaches often incorporate experiential methods such as project-based learning and real-world problem-solving, enhancing the depth and retention of learning.

3.5 Systems Theory

Systems Theory provides a holistic perspective, emphasising the interdependence of various components within a system. Interdisciplinary education aligns with this theory by encouraging students to understand complex organisational and environmental systems in an integrated manner.

4. Interdisciplinary Pedagogies in Management Education

The effectiveness of interdisciplinary education largely depends on the pedagogical approaches adopted.

4.1 Problem-Based and Project-Based Learning

Problem-based learning (PBL) and project-based learning encourage students to engage with real-world challenges, promoting critical thinking and collaborative problem-solving. These approaches enable learners to apply interdisciplinary knowledge in practical contexts.

4.2 Integration of Digital Technologies

The use of Information and Communication Technologies (ICT), artificial intelligence, and virtual learning environments has transformed educational practices. These tools facilitate interactive and adaptive learning, allowing students to explore interdisciplinary concepts more effectively.

4.3 Collaborative Learning and Teamwork

Interdisciplinary education fosters teamwork by bringing together diverse perspectives. Collaborative learning environments simulate real organisational settings, preparing students for cross-functional collaboration.

4.4 Sustainability-Oriented Curriculum

The integration of sustainability concepts into management education aligns with global development agendas. Interdisciplinary approaches enable students to address

sustainability challenges by combining insights from economics, environmental science, and social studies.

5. Interdisciplinary Education and Sustainable Innovation

Sustainable innovation refers to the development of products, services, and processes that create value while minimising environmental and social impacts. Interdisciplinary education plays a crucial role in fostering such innovation by integrating diverse knowledge domains. Through interdisciplinary learning, students develop competencies such as systems thinking, creativity, and ethical reasoning. These competencies are essential for designing innovative solutions that address complex challenges such as climate change, resource scarcity, and social inequality. The literature highlights that interdisciplinary approaches enhance students' ability to connect theory with practice, thereby promoting innovation and sustainability. Moreover, the integration of digital technologies further enhances the capacity for innovation by enabling access to diverse knowledge sources and collaborative platforms.

6. Challenges in Implementing Interdisciplinary Education

Despite the growing recognition of interdisciplinary education as a transformative approach in management studies, its effective implementation remains constrained by several structural, institutional, and pedagogical challenges. These challenges are deeply embedded in traditional higher education systems and require systemic reforms. One of the most significant barriers is the rigidity of traditional curricula, which are often designed around discipline-specific silos. Management programs typically follow compartmentalised structures where subjects such as finance, marketing, and human resources are taught independently, limiting opportunities for integration. This rigidity restricts the flexibility required to design interdisciplinary courses that cut across domains. Furthermore, accreditation frameworks and university regulations often emphasise standardised curricula, thereby discouraging experimentation and innovation in course design. The successful implementation of interdisciplinary education depends heavily on faculty capabilities. However, many educators are trained within specific disciplinary boundaries and may lack the expertise or confidence to teach interdisciplinary content. The absence of structured faculty development programs focusing on interdisciplinary pedagogy further exacerbates this issue. Additionally, resistance to change among faculty members, due to comfort with traditional teaching methods, can hinder the adoption of innovative approaches such as problem-based and experiential learning. While digital technologies play a crucial role in facilitating interdisciplinary learning, unequal access to technological resources remains a significant challenge. Students from diverse socio-economic backgrounds may face disparities in access to digital tools, internet connectivity, and online learning platforms. This digital divide not only affects learning outcomes but also limits the inclusivity of interdisciplinary education initiatives. Institutions in developing regions often struggle with inadequate infrastructure, further constraining the integration of advanced technologies.

Interdisciplinary education requires collaboration across departments and faculties. However, higher education institutions are often characterised by departmental silos, where each discipline operates independently. This lack of coordination restricts the development of interdisciplinary programs and collaborative teaching initiatives. Administrative barriers, such as budget allocation and departmental autonomy, further complicate efforts to integrate disciplines. Evaluating interdisciplinary learning outcomes presents a unique challenge, as traditional assessment methods may not adequately capture the breadth and depth of integrated knowledge. Interdisciplinary learning emphasises skills such as critical thinking, creativity, and collaboration, which are difficult to measure through conventional examinations. The absence of standardised assessment frameworks for interdisciplinary education creates inconsistencies in evaluation and limits its effectiveness. Beyond structural issues, there are cultural barriers within academic institutions that resist interdisciplinary approaches. Students and educators alike may be accustomed to discipline-specific thinking and may find it challenging to adapt to integrative learning environments. Overcoming these mindset barriers requires a shift in institutional culture toward openness, collaboration, and innovation.

7. Implications in the Context of NEP 2020

The National Education Policy (NEP) 2020 represents a paradigm shift in the Indian education system, emphasising multidisciplinary and holistic learning. Its vision aligns closely with the principles of interdisciplinary education and provides a strategic framework for transforming management education in India. NEP 2020 advocates for a flexible curriculum structure that allows students to choose courses across disciplines. This flexibility enables management students to integrate knowledge from fields such as data analytics, environmental studies, psychology, and public policy. Such integration enhances their ability to address complex business challenges and fosters innovation. A key focus of NEP 2020 is the development of holistic competencies, including critical thinking, creativity, communication, and problem-solving. Interdisciplinary education supports this objective by exposing students to diverse perspectives and encouraging them to synthesise knowledge. In management education, this approach prepares students to become well-rounded professionals capable of navigating dynamic business environments.NEP 2020 emphasises the use of technology to enhance learning outcomes and expand access to education. Digital platforms, online courses, and virtual learning environments facilitate interdisciplinary collaboration and knowledge sharing. For management education, this integration enables students to engage with global perspectives and emerging technologies such as artificial intelligence and data analytics. The policy encourages stronger linkages between academia and industry to enhance employability and practical relevance. Interdisciplinary education plays a critical role in this context by aligning

academic curricula with industry requirements. Collaborative projects, internships, and experiential learning opportunities enable students to apply interdisciplinary knowledge in real-world settings.

NEP 2020 places significant emphasis on research and innovation through initiatives such as the establishment of the National Research Foundation (NRF). Interdisciplinary research is central to addressing complex societal challenges, and management education can benefit from integrating research-driven learning approaches. The policy aims to promote inclusive education by addressing disparities in access and opportunities. Interdisciplinary approaches, supported by digital tools, can help bridge gaps by providing flexible and accessible learning pathways. However, achieving this objective requires addressing the digital divide and ensuring equitable access to resources. For management institutions, NEP 2020 necessitates a shift toward multidisciplinary program design, faculty development, and institutional collaboration. Business schools must adopt innovative pedagogies, integrate sustainability into curricula, and foster partnerships with other disciplines and industries.

8. Future Research Directions

While interdisciplinary education has gained significant attention in recent years, there remains considerable scope for further research, particularly in the context of management education. Future studies should focus on empirically testing the impact of interdisciplinary education on learning outcomes, innovation capabilities, and employability. Quantitative research methods, including regression analysis and structural equation modelling, can provide deeper insights into these relationships. There is a need for longitudinal research to examine the long-term impact of interdisciplinary education on career progression, managerial effectiveness, and organisational performance. Such studies can provide evidence of its sustained benefits. The integration of technologies such as artificial intelligence, machine learning, and big data analytics in interdisciplinary education presents a promising area for research. Future studies can explore how these technologies enhance learning experiences and innovation outcomes.

Comparative research across countries and educational systems can provide insights into best practices and contextual differences in implementing interdisciplinary education. Such studies are particularly relevant in understanding how policies like NEP 2020 compare with global frameworks. Further research is required to examine the relationship between interdisciplinary education and employability outcomes. Studies can explore how interdisciplinary competencies influence job readiness, career adaptability, and leadership effectiveness. Future research can investigate effective strategies for faculty training and institutional transformation to support interdisciplinary education. This includes exploring leadership roles, organisational culture, and policy interventions. Given the increasing importance of sustainability, research can focus on how interdisciplinary education contributes to ethical decision-making and sustainable business practices. This area holds significant relevance for management education in the context of global challenges.

9. CONCLUSION

Interdisciplinary education represents a paradigm shift in management education, enabling the development of competencies required for sustainable innovation. By integrating diverse knowledge domains and leveraging modern pedagogical approaches, it prepares future managers to address complex global challenges. In the context of NEP 2020, interdisciplinary education offers significant opportunities for transforming management education in India. However, its successful implementation requires institutional support, faculty development, and technological infrastructure. Ultimately, interdisciplinary education is not merely an academic innovation but a strategic necessity for fostering sustainable development and organisational excellence in the 21st century.

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About the corresponding author

Bhavna Kaura Ohri is an Associate Professor at the University School of Business Studies, Rayat Bahra Professional University, Hoshiarpur, Punjab. She has extensive experience in teaching and research, with a focus on management and finance. She actively contributes to academic development, research publications, and student learning in higher education.