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Address for correspondence:
Ashwini Deepak Kohok
Research Scholar, MET Bhujbal
Knowledge City, Nashik
Email:
ashwinikohok30@gmail.com

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Need of AI-Integrated Supplementary Courses in Management Institutes of Nashik District

Ashwini Deepak Kohok¹ Dr.D.T. Khairnar²

¹Research Scholar, MET Bhujbal Knowledge City, Nashik

²H.O.D, M.B.A, Maratha Vidya Prasarak Samaj's Karmaveer Adv. Baburao Ganpatrao Thakare College of Engineering, Nashik

Abstract

In today's digital age, Artificial Intelligence (AI) has become a core driver of business transformation. Traditional management programs alone are insufficient to prepare graduates for the data-driven and technology-rich demands of current workplaces. Artificial Intelligence (AI) continues to transform education worldwide, with significant potential for enhancing management education. The rapid evolution of Artificial Intelligence (AI) has reshaped industry expectations and workplace competencies. Traditional management curricula, while strong in foundational theories, are still lagging in equipping graduates with practical digital skills. This paper explores the role and need of AI-integrated supplementary courses in enhancing the employability of management graduates.

Keywords: Artificial Intelligence, supplementary courses, up skilling, management education, digital competencies, employability.

Introduction

Artificial Intelligence (AI) is reshaping education globally, including professional management programs. Global business environments are increasingly driven by digital technologies. As firms automate processes and adopt data-driven strategies, management graduates must leverage AI tools to remain relevant. While core management programs provide theoretical foundations, they often lack experiential learning in AI applications. Management education prepares future business leaders with skills in strategy, analytics, and innovation. AI, as a transformative technology, offers new pathways to enhance supplementary learning beyond traditional lectures and case studies. Supplementary courses refer to add-on modules, certifications, and skill development initiatives that support mainstream management programs. AI-integrated supplementary courses are educational programs designed to augment foundational domain knowledge with AI-related skills such as machine learning, data analytics, automation, and intelligent systems without replacing core domain curricula. Supplementary courses designed around AI bridge the gap, enabling students to integrate technology with business strategy. This paper examines need of AI-integrated supplementary courses in upskilling management graduates by enhancing digital literacy, analytical competence, strategic decision-making, and employability.

Research Objectives:

1. To analyze current state of AI-integrated supplementary courses in management institutes of Nashik District.
2. To assess Student, Faculty and Recruiter perspectives regarding the importance of AI integrated supplementary courses in management institutes.
3. To explore best practices for implementing AI-integrated supplementary courses.

Literature Review:

Value-added models can be used to evaluate, monitor, and improve an institution and other aspects of an education system. The concept of 'value-added' in an education system relates to student achievement as growth in knowledge, skills, abilities, and other attributes that students have gained as a result of their experiences in an education system over time. The integration of Artificial Intelligence (AI) into Bachelor of Business Administration (BBA) and Master of Business Administration (MBA) programs is increasingly recognized as essential for preparing future business leaders. AI technologies, such as machine learning and natural language processing, are transforming industries by improving efficiency and decision-making. Reports indicate a growing demand for AI skills in the workforce, necessitating the adaptation of BBA and MBA

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curricula to better equip graduates for a technology-driven job market (World Economic Forum, 2025). The Impact of Artificial Intelligence on Higher Education: An Empirical Study: by Zouhaier Slimi Deusto University-Spain National University of Sciences and technology Oman-This research paper investigated the impact of AI on higher education. It stressed AI's human, ethical and cognitive impacts on the future of humanity in general and students and their future careers. Consequently, AI affects the learning and teaching process.

Integrating artificial intelligence in higher education: perceptions, challenges, and strategies for academic innovation: **Dusana Alshatti Schmidt, Bedour Alboloushi, Anisha Thomas, Rodrigo Magalhaes**: this study examined the perceptions and usage of AI in higher education from the viewpoints of both faculty and students through the lens of social constructivism, focusing on perceptual, technological, and contextual dimensions. From a perceptual perspective, the research offers a comprehensive understanding of how both faculty and students perceive AI integration in their academic environments highlighting their differing attitudes, concerns, and varying degrees of AI literacy. The technological perspective captures how AI tools are practically applied in higher education and also addresses technical challenges associated with AI use. While rooted in a single national context, the study identifies institutional challenges that resonate across borders including shifts in pedagogical relationships, academic integrity concerns, and the evolving culture of learning. Overall, the findings of this study uncover how the integration of AI is shaped by individual perceptions, experiences, and broader educational context.

Research Methodology:

The research on the need of AI-integrated supplementary courses in BBA and MBA programs was conducted using a mixed methods approach, integrating both qualitative and quantitative methods to gather comprehensive insights. This methodology allowed for an in-depth analysis of supplementary courses in BBA & MBA curricula and its implications for student learning and career readiness. This approach combined qualitative interviews and focus groups with quantitative surveys.

1. Interviews:

Participants: Semi-structured interviews were conducted with 15 faculty members from various BBA and MBA institutes who specialize in AI, technology management, or data analytics. Also 10 recruiters from various reputed Companies were interviewed.

Focus: The interviews explored faculty and recruiters perceptions regarding the integration of AI supplementary courses into the curriculum, challenges faced in teaching AI-related content, and the perceived relevance of AI skills for BBA and MBA graduates.

2. Focus Groups:

Participants: Three focus groups comprising a total of 30 BBA and MBA students were

organized to discuss their awareness and experience of AI supplementary courses.

Discussion Topics: The focus groups addressed the importance of AI education, the effectiveness of current AI offerings, and students' recommendations for enhancing AI-related curriculum.

3. Surveys:

Sample: An online survey was distributed to 25 Recruiters, 20 teachers and over 200 BBA and MBA students and alumni from five different institutions, yielding a response rate of 65%.

Content: The survey included Likert-scale questions assessing participants' familiarity with AI technologies, perceived importance of AI skills in their careers, satisfaction with AI-related coursework, and the perceived impact of AI competencies on their employment outcomes.

Data Analysis

Thematic Analysis: The qualitative data from interviews and focus groups were analyzed using thematic analysis to identify key themes regarding integration of AI supplementary courses in BBA and MBA programs. The analysis focused on benefits, challenges, and suggestions for improvement in traditional education.

Statistical Analysis: The quantitative data from surveys were analyzed using descriptive statistics to summarize demographic information and perceptions of AI supplementary courses. Inferential statistics, including correlation and regression analysis, were used to explore the relationship between supplementary courses and employability.

Applications of AI-Integrated Supplementary Courses in Management Education

1. Enhancing Analytical Skills

AI courses strengthen analytical capabilities among management students by introducing tools and methods such as machine learning, predictive analytics, and business intelligence techniques. These skills prepare students for data-driven decision-making in areas like marketing analytics, financial forecasting, and operations planning.

2. Bridging Technical and Managerial Domains

Supplementary AI courses help management students to bridge the gap between technical AI understanding and business application. For example, combining AI modules with MBA subjects like strategic management or business analytics can cultivate tech-savvy managers capable of leading digital transformation initiatives.

3. Real-World Case Exposure and Projects

AI programs often include industry case studies, hands-on projects, and internships, allowing students to apply AI in solving practical business challenges.

4. Supporting Career Advancement

Supplementary AI certifications and training can enhance employability. Students can gain AI credentials that complement management degrees and make them competitive for roles such as

business analysts, data consultants, and innovation managers.

5. Promoting Local Industry Readiness

AI-skill training supports local business ecosystems.

Benefits of AI-Integrated Supplementary Courses

1. Personalized and Flexible Learning

AI courses often available in online or hybrid formats provide flexibility for management students to learn at their own pace. Modules can adapt to learner progress and focus on specific skill sets such as Advance AI courses in Marketing, HR and Finance.

2. Responding to Market Demand

The business sector increasingly values AI fluency. Supplementary AI training equips future managers to meet such expectations.

3. Cross-Functional Skill Development

AI training complements core management competencies by strengthening problem-solving, critical thinking, and digital literacy. Management graduates with AI exposure are often better prepared for leadership in data-intensive business environments.

Challenges and Limitations

1. Curriculum Integration and Recognition

Many AI courses are offered by external training providers or technical institutes rather than being integrated into formal management programs. This separation may limit student access and recognition within traditional curricula.

2. Quality and Standardization

There are concerns about the quality and consistency of AI courses marketed under attractive titles. Student groups may raise issues regarding AI/ML programs where practical skills and rigorous content may not match expectations.

3. Resource and Faculty Constraints

Effective AI instruction requires trained faculty, computational resources, and updated content resources that some local management institutes may lack.

Conclusion

AI-integrated supplementary courses increasingly support management education by enhancing analytical competencies, linking technical skills with business insights, and preparing students for digital business environments. While challenges persist such as curriculum alignment and quality assurance leveraging local training ecosystems and academic collaborations can broaden access and impact. Strategically integrating AI courses within management curricula will strengthen Nashik's capacity to produce business leaders adept in AI-driven decision-making and innovation.

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Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

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