



PROSPECTS OF ARTIFICIAL INTELLIGENCE (AI) AND PERSONALIZED LEARNING IN INCLUSIVE EDUCATION INTEGRATED TO THE NATIONAL EDUCATION POLICY (NEP) - 2020

VOLUME - I

Chief Editors

Dr.T.Mohana Sundari | Dr.P.Archanaa

Editors

Dr.B.Indira Priyadharshini | Dr.T.Vijaya Chithra
Dr.P.Gomathi Devi | Dr.M.Deepa
Dr.M.Shanmuga Priya | Dr.R.Ramya



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[email:publisher@shanlaxpublications.com](mailto:publisher@shanlaxpublications.com)

[web: www.shanlaxpublications.com](http://www.shanlaxpublications.com)

PREFACE

The National Education Policy (NEP) 2020 emphasizes integrating Artificial Intelligence (AI) across all education levels to foster digital literacy, critical thinking, and future skills, viewing AI as crucial for personalized learning, efficient management, and teacher support through tools like adaptive platforms, chatbots, and data analytics, aiming for a learner-centric, inclusive, and future-ready system, with initiatives like the "AI for All" course promoting basic understanding among citizens. AI supports research, innovation, and the creation of innovative instructional technologies at the tertiary level. Furthermore, examined is AI's contribution to the National Educational Technology Forum (NETF), highlighting its significance in advancing legislative ideas along with the goals of NEP 2020. The National Education Policy (NEP) 2020 is a foundational shift in India's education system, aiming for holistic, flexible, and skill-based learning from school to higher education. It prioritizes foundational literacy, critical thinking, mother-tongue instruction, and multidisciplinary curriculum, aiming to foster innovation and equity, preparing students for a rapidly changing global landscape.

The edited volume of the book is a collection of research papers from eminent scholars, students, and academicians presented at the ICSSR-SRC Sponsored One Day National seminar on "Prospects of Artificial Intelligence (AI) And Personalized Learning in Inclusive Education Integrated to the National Education Policy (NEP) - 2020". This book is intended for scholars, industry professionals, and students who seek to understand the intersection of AI, Education Policy, and NEP 2020. We sincerely thank the Indian Council of Social Science Research ICSSR-SRC, Hyderabad, for conducting this National Seminar through sponsor. We extend our gratitude to the researchers, contributors, and industry experts, whose insights have shaped this work. We hope it serves as a valuable resource and a reminiscence master-piece for fostering responsible AI integration and driving sustainable innovation in the Education sector.

Seminar Convenor

Dr. T. Mohana Sundari

*Assistant Professor, Department of Commerce (CA)
Nallamuthu Gounder Mahalingam College, Pollachi.*

Organising Secretary

Dr. P. Archanaa

*Assistant Professor & Head, UG Department of Commerce (CA)
Nallamuthu Gounder Mahalingam College, Pollachi.*

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AI-ENABLED PERSONALIZATION FOR INCLUSIVE AND LIFELONG LEARNING

Ms. M. Gayathri

Assistant Professor, Department of E-Commerce,
NGM College, Pollachi.
gayathirim@ngmc.org

Abstract

AI-enabled personalization is transforming education by catering to diverse learner needs and fostering inclusive and lifelong learning. Using adaptive learning systems, intelligent tutoring, and learning analytics, AI customizes content, pace, and assessment to enhance learner engagement and outcomes. It supports equitable access to education and continuous skill development across different age groups. However, ethical challenges such as data privacy, algorithmic bias, and the digital divide must be addressed for responsible implementation.

Keywords: Artificial Intelligence, Personalized Learning, Inclusive Education, Lifelong Learning, Educational Technology

Introduction

The integration of Artificial Intelligence (AI) in education has significantly transformed traditional teaching and learning practices by enabling more personalized and learner-centric approaches. Conventional education systems often rely on uniform instructional methods that fail to address individual differences in learning abilities, pace, and preferences. AI-enabled personalization uses technologies such as machine learning, learning analytics, and intelligent tutoring systems to adapt educational content, assessment, and feedback to the specific needs of learners, thereby improving engagement and learning outcomes. AI-driven personalized learning also plays a crucial role in promoting inclusive and lifelong learning. It supports learners from diverse socio-economic, cultural, and cognitive backgrounds by offering flexible, accessible, and self-paced learning opportunities. Furthermore, AI facilitates continuous skill development and lifelong learning by aligning education with evolving industry and societal demands. However, challenges such as data privacy, algorithmic bias, and unequal access to digital infrastructure highlight the need for responsible and ethical implementation of AI in education.

Review of Literature

Artificial Intelligence has gained significant attention for its ability to personalize learning and improve educational outcomes. Holmes, Bialik, and Fadel (2019) noted that AI-driven technologies such as intelligent tutoring systems and adaptive learning platforms enable customized instruction by analyzing learner behavior and performance, thereby enhancing engagement and effectiveness. These systems support a shift from teacher-centered to learner-centered education.

UNESCO (2021) emphasized the role of AI in promoting inclusive education by supporting learners from diverse socio-economic backgrounds and those with special needs.

AI-based tools facilitate accessibility through personalized learning paths, assistive technologies, and language support, contributing to educational equity. Similarly, Luckin et al. (2020) highlighted that AI-powered learning analytics encourage lifelong learning by enabling self-paced, flexible, and continuous skill development. However, studies also caution against challenges such as data privacy, algorithmic bias, and the digital divide, stressing the importance of ethical and policy-guided implementation.

Objectives of the Study

1. To examine the role of AI-enabled personalization in enhancing inclusive learning experiences.
2. To analyze the contribution of artificial intelligence in supporting lifelong learning and continuous skill development.
3. To identify the challenges and limitations in implementing AI-driven personalized learning systems in education.

Statement of the Problem

Conventional education systems often adopt a uniform teaching approach that does not adequately address the diverse learning needs of students, limiting inclusivity and learner engagement. Although AI-enabled personalized learning offers potential solutions by adapting content, pace, and assessment to individual learners, its adoption is constrained by issues such as digital inequality, data privacy concerns, algorithmic bias, and limited institutional readiness. Therefore, it is essential to study the role and challenges of AI-enabled personalization in promoting inclusive and lifelong learning.

Finding of the study

- Majority of the respondents belong to the younger age group, indicating higher adaptability to AI-enabled personalized learning systems.
- Majority representation across genders reflects inclusive participation in AI-based learning environments.
- Majority of the respondents are from semi-urban and rural areas, highlighting the expanding reach of digital and AI-enabled education.
- Majority of the respondents are graduates or pursuing higher education, showing familiarity with technology-assisted learning.
- Majority fall under low- to middle-income groups, emphasizing the need for affordable AI-driven learning platforms.
- Majority of the respondents have access to smart phones and basic internet facilities, though quality and consistency vary.
- Majority of the respondents are aware of AI-enabled personalized learning systems used in education.
- Majority recognize AI tools such as adaptive learning platforms, online courses, and intelligent tutoring systems.

- Majority understand that AI-based learning helps in learning at an individual pace and improves concept clarity.
- Majority are aware of the role of AI in supporting inclusive education and lifelong learning.
- Majority of the respondents are satisfied with AI-enabled personalized learning experiences.
- Majority feel that AI-based platforms enhance learning effectiveness and engagement.
- Majorities are satisfied with the flexibility and self-paced nature of AI-driven learning.
- Majority express satisfaction with personalized feedback and recommendations provided by AI systems.

Conclusion

AI-enabled personalization plays a vital role in promoting inclusive and lifelong learning by catering to diverse learner needs. The majority of respondents reported good awareness and satisfaction with AI-based learning platforms. These technologies enhance flexibility, accessibility, and continuous skill development. Addressing digital divide and ethical concerns is essential for effective and sustainable adoption.

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