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VISION VIKSIT BHARAT 2047

EDUCATION 4.0

Enhancing India's Workforce for the AI-Powered Future

Editor in Chief

Dr.M.AKILANAYAKI

Editors

Ms.V.POORNIMA | Ms.M.SHANMUGAPRIYA | Dr.P.GURUSAMY | Dr.R.SIVARAJAN

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VOLUME - II

Editor In Chief

Dr. M. Akilanayaki

Assistant Professor & Head

Department of Commerce with Business Process Services

Nallamuthu Gounder Mahalingam College

Pollachi, Tamil Nadu

Editors

Ms. V. Poornima

Assistant Professor,

Department of Commerce with Business Process Services

Ms. M. Shanmugapriya

Assistant Professor,

Department of Commerce with Business Process Services

Dr. P. Gurusamy

Assistant Professor,

Department of Commerce with Business Process Services

Dr. R. Sivarajan

Assistant Professor,

Department of Commerce with Business Process Services

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© Dr. M. Akilanayaki
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Ms. M. Shanmugapriya
Dr. P. Gurusamy
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PREFACE

The 21st century has heralded a transformative shift in global dynamics, driven by rapid advancements in technology and the emergence of Industry 4.0. At its heart lies artificial intelligence (AI), robotics, big data, and automation, redefining the way we live, work, and learn. India, standing at the cusp of this technological revolution, has an unprecedented opportunity to align its aspirations with global progress through the visionary framework of “Vision Viksit Bharat 2047.” As the nation envisions becoming a developed and self-reliant power by its centenary year of independence, the role of education in nurturing a future-ready workforce becomes paramount. Education 4.0, a forward-thinking approach to learning, seeks to bridge the gap between traditional education and the demands of an AI-powered economy, ensuring that India’s vast demographic dividend is effectively utilized to achieve this ambitious goal.

The concept of Education 4.0 emphasizes an adaptive, personalized, and technology-driven learning ecosystem. It integrates cutting-edge tools like AI, machine learning, and immersive technologies to foster creativity, critical thinking, and problem-solving skills among learners. By reimagining education as a dynamic and continuous process, it aims to prepare individuals to excel in roles that demand not only technical expertise but also emotional intelligence, cultural sensitivity, and ethical judgment. This transformation is essential for India to stay competitive in a global market increasingly shaped by digital innovation. Moreover, as the world turns toward sustainable and inclusive development, Education 4.0 also promotes equity by democratizing access to quality learning resources. This preface underscores the significance of aligning education reforms with national and global priorities, setting the stage for India to emerge as a leader in the AI-driven future while ensuring social and economic prosperity for all.

The book is the outcome of the papers presented in the one Day National Level Seminar on “VISION VIKSIT BHARAT 2047 EDUCATION 4.0 ENHANCING INDIA'S WORKFORCE FOR THE AI-POWERED FUTURE-” sponsored by Indian Council of Social Science Research- Southern Regional Centre, Hyderabad held on 24th January 2025 organised by the Department of Commerce with Business Process Services, Nallamuthu Gounder Mahalingam College, Pollachi . A spectrum of different subjects covered at the seminar are included in this book. In chapters that are contextualized in contemporary Education 4.0, a number of authors have provided reliable and meaningful chapters. Beyond educators and students, there are other national policymakers who could benefit from this initiative. We express our gratitude to the Indian Council of Social Science Research-- Southern Regional Centre, Hyderabad for their Sponsorship to organize the national level seminar. We also thank the authors who whole heartedly contributed chapters to the book.

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STUDENTS' PREFERENCE AND ISSUES TOWARDS ARTIFICIAL INTELLIGENCE IN EDUCATION

Dr. S.Poongodi

Assistant Professor, PG Department of Commerce-CA
Nallamuthu Gounder Mahalingam College
Pollachi, Tamil Nadu, India

Abstract

Artificial Intelligence in education has transformed the learning landscape, offering personalized learning experiences, automating administrative tasks and providing real-time feedback. Accordingly, it becomes essential to study students' preference and challenges towards Artificial Intelligence in education in Pollachi Taluk. Data for study have been collected from 124 students through questionnaire by adopting convenience sampling method. Simple Percentage, Weighted Average Ranking and Chi-Square have been used to analyze the data. The study reveals that majority of the students belong to the age group of 17-20 years residing in rural area and studying under graduate whereas most of the students family income is above Rs.50000. It is observed that among the various reasons available for preferring AI, the respondents prefer content creation as the highest reason for preferring AI in education followed by 24/7 support, ideas generation, large volume of data, video creation, increased productivity and coding. It is also found that age, educational qualification, type of family and family income are found to be significant with level of preference towards AI in education.

Keywords: Preference – Students -Artificial Intelligence– Education.

Introduction

The recent evolution of artificial intelligence (AI) technology makes the integration of AI in to the educational sector promising. Gorriz et al (2020) AI (Artificial intelligence) has become pervasive in the lives of twenty- first century citizens and being proclaimed as a tool that can be used to enhance and advance all sectors of our lives. Education is a field where the presence of teachers is mandatory, which is the best educational practice, the emergence of artificial intelligence is changing the work of teachers who are indispensable in the education system. AI mainly uses deep learning and machine learning, advanced analytics to examine the speed of a particular individual among others. AI helps us understand the mood or ease of the student during lectures by using gesture recognition technology. As artificial intelligence becomes more sophisticated, the machine reads the student's facial expressions or gestures and uses them to understand if the student is having trouble understanding the lecture and modify the lesson so that the student can continue easily. So, in this study an attempt has been made to explore the students' preference and issues towards AI in education.

Review of Literature

Madhuri Hooda and Chandan (2023) found that equity in learning is given through the use of ICT tools and AI- based learning. New AI based applications are constantly changing the ways of learning in education system but they are several challenges like lack

of proper network, lack of competency of teachers and lack of monetary resources. **Panda (2021)** in their study entitled “Artificial Intelligence in Indian Education System: Challenges and Way Forward”, It is observed that India has a diverse population, and there are disparities in terms of internet connectivity, availability of devices, and infrastructure. Many rural areas and economically disadvantaged communities lack access to reliable internet connections and appropriate devices, hindering their ability to leverage AI-based learning resources effectively. Addressing these challenges requires collaboration among educational institutions, policymakers, technology providers, and other stakeholders to ensure that AI-based learning in India is equitable, effective, and aligned with the unique needs and context of the country.

Statement of the Problem

In recent years technology plays significant role in education system through development of Artificial Intelligence (AI). Generative AI models, such as Chat GPT, offer both opportunities and challenges when integrated into educational system. **Anna AyuHerawati et al (2024)** found that most of the students have a positive view of the use of AI in learning, seeing it as a tool that can enrich their learning experience and increase access to educational resources. **Kandula Neha (2021)** observes that AI is the backbone of all information science enabled intelligent tutor systems. This helps in responsive deep queries, partitioning conflict statements and choice-making skills. In this backdrop, it is essential to know the preference level and issues faced while using AI. To find solution for the said questions, the following objective has been framed and tested.

Objectives of the Study

- To know the socio-economic profile of sample students.
- To identify the reason for preferring AI
- To examine issues faced by students towards AI
- To ascertain the variables that associate with level of preference towards AI in education.

Research Methodology

The study is based on primary data collected through questionnaire. It contains questions relating to the socio-economic profile and preference of AI in education and issues faced by students. A sample of 124 students residing in Pollachi Taluk has been selected by adopting convenience sampling method. Simple Percentage, Weighted Average Ranking and Chi-Square test have been used to analyse the data.

Findings

The findings of the study are divided into four sections namely, Socio-economic profile, reasons for preferring AI in education, issues and variables associated with level of preference towards AI in education.

(i) Socio-Economic Profile of Students

Socio-economic profile of students like age, area of residence, marital status, educational qualification, type of family, Number of members in the family and family income are disclosed in the following table.

Table-1 :Socio-Economic Profile of Students

Variables	Number of Students (N=124)	Percentage (%)
Age(Years)		
17 -20	68	54.84
21-23	45	36.29
Above 23	11	8.87
Area of Residence		
Urban	55	44.35
Rural	69	55.65
Marital Status		
Married	10	8.06
Unmarried	114	91.94
Educational Qualification		
Under Graduate	76	61.29
Post Graduate	48	38.70
Type of Family		
Joint	68	54.84
Nuclear	56	45.16
Number of Members in the family		
1-3 members	55	44.35
Above 3 members	69	55.65
Family Income (per month)		
Up to Rs.25000	22	17.74
Rs.25001-50000	48	38.71
Above Rs.50000	54	43.55

- Majority of the students, 68 (54.84%) belong to the age group 17-20 years.
- Majority of the students, 69 (55.65%) are residing in rural area.
- Majority of the students, 114(91.94%) are unmarried.
- Majority of the students, 76(61.29) are under graduate.
- Majority of the students, 68 (54.84%) belong to joint family.

- Majority of students 69(55.65%) have above 3 members in their family
- Most of 54(43.55%) students family income is above Rs.50,000.

(ii) Reason for Preferring Artificial Intelligence in Education

An attempt has been made to know the various reasons for preferring AI in education by students. Weighted Average Ranking has been used to know the reason for using AI.

Table-2 :Reasons for Preferring AI- Weighted Average Ranking

Reasons	Ranking
Content Creation	I
Ideas Generation	III
Video Creation	IV
Coding	VI
24/7 Support	II
Large volume of Information	III
Increased productivity	V

It is identified from the above analysis that among the various reasons available for preferring AI, the respondents prefer content creation as the highest reason for preferring AI in education followed by ideas generation, 24/7 support, large volume of information, video creation, increased productivity and coding.

(iii) Issues faced by Students towards Artificial Intelligence in Education

An attempt has been made to know the various issues faced while using AI in education by students. Weighted Average Ranking has been used to know the issues faced in AI.

Table-3 :Issues Faced while using AI in Education- Weighted Average Ranking

Issues	Rank
Slow Speed of Internet Connectivity	I
Biased Information and Hallucinations	IV
Data Privacy and Ethics	V
Lack of Human Interactions	III
Lack of Monetary Resources	VI
Employment(job displacement for institutions)	VII
Lack of Collaboration with Industry	II
Lack of Research and Innovation	VIII

It is observed from the above analysis that among the various issues faced by students while using AI, the students faced slow speed internet connectivity as the highest

challenges faced in using AI in education followed by lack of collaboration with industry, lack of human interactions, biased information and hallucinations, data privacy and ethics, lack of monetary resources, employment and lack of research and innovation.

(iv) Variables Associated with Level of Preference towards Artificial Intelligence in Education

In order to find out the association between the selected variables namely age, area of residence, marital status, educational qualification, type of family, and family income and students level of Preference towards AI in education. Chi-square test has been made use of. Level of significance is five percent.

Table-4 :Variables Associated with Level of Preference towards Artificial Intelligence in Education

Variables	Calculated Chi-Square Value	D.f	Table Value @ 5% Level
Age	11.569*	4	9.488
Area of residence	4.681	2	5.991
Marital Status	3.177	2	5.991
Educational Qualification	6.822*	2	5.991
Type of Family	5.479*	2	5.991
Family Income	9.868*	4	9.488

The above discloses that out of six variables selected, four factors namely age, educational qualification, type of family and family income are found to be significant with level of preference towards AI in education at five percent level.

Suggestions

- Teachers may be given training for updating with recent AI tools and pedagogical approach.
- College may be provide speed internet connectivity to students to access AI based learning
- Educational institutions may have collaborations with technology companies who may provide AI-based learning solutions to students.

Conclusion

It is found that Age, Educational Qualification, Type of Family and Family Income have significantly associated with the preference level of AI in education. AI use in education is set grow fast as technology integration is developing. AI has vital role in enhancing learning experiences and classroom engagement by creating interactive and dynamic content. AI creates inclusive and flexibility to both faculties and students. Education institutions have to plan how to use AI for students to encourage learning, increase efficiency, drive innovation and encourage creativity.

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