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DIGITAL INNOVATION FOR THE PRESERVATION OF INDIAN EDUCATION SYSTEMS: THE AI APPROACH

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Abstract

For saving and sustaining the heritage of Indian, education needs to be in assured with robust manner. This is the only hope through which treasures of traditional Education in culture, science and philosophy that India has inherited would be carried forward to generations yet unborn. These ancient systems are related to many aspects of life including Ayurveda, vedic sciences, medicine, agriculture, art etc. thus making them essential for all future happening. The digital era has made it increasingly difficult to keep education alive, as but for a significant degree of physical effort, beyond merely keeping it alive, and digitally transcribing it. Both of these were things that (potentially) have caused traditional Education to be lost through colonialism, but they can also be bad thing for traditional documentation because writing makes the Education written rather than spoken. The article explores the possibilities of artificial intelligence and digital technologies for conserving, recouping, and regenerating Indian Systems of Education. The melding of old ideas and the new technology is likely to collapse the Education that comes from neurons and the wisdom that comes from silicon. AI-powered strategies such as natural language processing (NLP), machine learning and data analytics can potentially help us record, digitize and make traditional bodies of Education available to future generations in a form that machines can read. Artificial intelligence can also help us make sense of old texts, translating, transcribing and organizing them. This might be good for helping us to understand other cultures and languages. Second, the machine learning algorithm may discover patterns in that ancient parchment that never occurred to you and are hard for one of us humans to grasp. Education may use digital technology to go beyond boundaries and be accessible to academics, practitioners and ordinary people.

Key words: Indian Education Systems, Digital era, Natural language processing, culture.

Introduction

Indian education system, is a complex and diverse Education ecology of several centuries. They are philosophy, medicine (Ayurveda), mathematics, astronomy, literature and fine arts. Ancient texts primarily Vedas, Upanishads and Puranas and informal practices have laid the foundation of education, which has played a big role in the shaping of Indian culture and society. We live in a globalised world where Education is depleting due to fast advancement in technology but this can also be a weakness as important lessons could be dismissed and forgotten. This is worrying, as education has been dominated through oral tradition and the medium of manuscripts for a good stretch, which means that also it has been opposed. In the last decades, the birth of digital techniques gave efficient tools for saving and sharing the Education. The most potent of these disruptive forces could well be A.I., and new ways to store, know and enhance the Education of our ancestors. How AI-based technology, specially ML, natural language processing (NLP) and data analytics has contributed that now education could be digitalized, analyzed and stored as never before. A golden bridge from ancient wisdom to modern science: education can be salvaged, revitalized, re-born in AI era for humanity. Among these challenges, however, is the diversity and size of Education that encapsulates; it is also referred to as voluminous. Education is multi-lingual, with local variations based on regions and culture."56 This Multi language character of education makes it difficult to have a single place to document or preserve education. oral or written-down folio conventional dissemination of Education is of much lesser coverage and far less scope for distribution. For others, too many texts and practices are in danger of disappearing as a result of no more than lack of proper documentation, digitalization and archiving. AI can potentially be a relatively rapid, scalable response to these challenges because it enables the digitalisation of texts, automatic categorising of Education and analysis over high volumes of data with many types of different kinds. The ancient language is automatically translated into the modern one using NLP technologies which makes it a less linguistic barrier. Additionally, AI might have value in recording and collecting oral traditions, for instance by analysing recorded audio or video data of an indigenous Education keeper that has already been uploaded are being stored as part of some archive to ensure they don't get lost to history. AI also plays an important guiding role in handling huge volumes of data from the ancient texts. So while AI can be that transformative satay -without chile and outhouse facing daab of coconuts: as far as generation/interpretation of Indian Education Systems goes. If you are a young/new Indigenous scholar in them, its up to AI to help make education generations possible using digitalization text tech and its supported KS analysis, shared data available for world so that they should be read widely not only for their existence but even rejuvenate hope.Native(AI) Scholars In Native Indian Languages Digital Corpus:As there is language soo strong structural base in our languages that evolution of today's computers/files search technology already presented layer on which the gap can be filled i.e., the layer here being machine & its algorithms.

Review of Literature

1. Sain and Behera (2025) explore the role played by AI in digitalizing and making Indigenous Education Systems available more widely, including natural language processing, machine translation and Education representation systems to convert ancient writings into digitally searchable forms. The early results of their research show that AI can be used not only as a means to preserve fragile ancient texts but also to provide access and further our understanding by allowing semantic analysis into the past languages, such as Sanskrit and Pali, which modern researchers might not have had time to master. Implementation of such AI technologies would make Intellectual Heritage preservation in India sustainable (reference

2.Sain & Behera, Shodh Samagam). Rajinder Kumar and Satish Kumar (2025) also emphasize how AI and Big Data can preserve, coordinate, and administer 'traditional' Education in a respectful as well as ethical way. In a study published in the International Journal of Cyber and Information Technology, they argue that digital innovation is the key to not just protecting information but also increasingly allowing everyone to find it and use it. They emphasize that responsible use also has to protect the intellectual property and Education of indigenous peoples. AI for heritage goes beyond Education written in texts only. "One could argue that in the not too distant future, we will have computers that can see, predict change to a building's structure and learn really deep down," writes researcher

3. Dr. Farid Nouari in an article published in the journal the Archives of Computational Methods in Engineering, on research which could be used to revolutionise how cultural heritage buildings are cared for. Not so much on cultural heritage but there is a lot that can be drawn upon regarding the scale of deployment of these same AI methodologies in Indigenous Education Systems and in ancient

4.Manuscript Studies (Dr. D.Padma 2025). AI and Non-material Cultural Heritage The potentiality of AI with reference to the domain of ICH was analyzed, primarily in Digital Scholarship in the Humanities could be trained to such high accuracy levels and thus prove generalizable across a range of tasks in other similar digitization initiatives. A study published in the International Advance Journal of Engineering, Science and Management which is concentrating on technology also provides convincing reasons for Digital Humanities to converge with education will continue to be relevant in current education-as 5.Dr.Naveen Prasadula (2024) claims, it can help digital contexts sustain oral sharing practices and other marginalised Education forms that are harmonious with the digitised formats such as online libraries, repositories, interactive multimedia tools and so on. Certain projects are also mentioned in the Digital Innovation case studies

6.. (Sain & Behera 2025). Native Education-based AI would also require the help of humans with expertise in many other fields, including historians, linguists, technologists and community leaders. AI/ICT is needed for documenting && dissemination of Indian Education Systems, the research argues. It will be important to use AI ethically, scholars emphasize but they'll need to work across fields in order to do so successfully.

Study of Objectives

1. To Study the Role of AI in the Translation and Interpretation of Ancient Education
2. An Exploration of the Prospective AI doorway to Categorization and Archiving of Indian Education Systems
3. To Investigate the Use of AI for Renewing and Sustaining Indigenous Education Activities
4. To Study the Role of AI-Driven Digital Platforms in Propagation of Indian Education Systems
5. To Evaluate AI and its Combination With Traditional Education Systems in the Current RDTT landscape

Research and Methodology

In this paper, we will explore the landscape of 63 R&D projects which combine artificial Education with traditional domain Education. The research will quantify project outcomes, novelty and extendibility for projects using AI compared with purely non-AI based approaches.

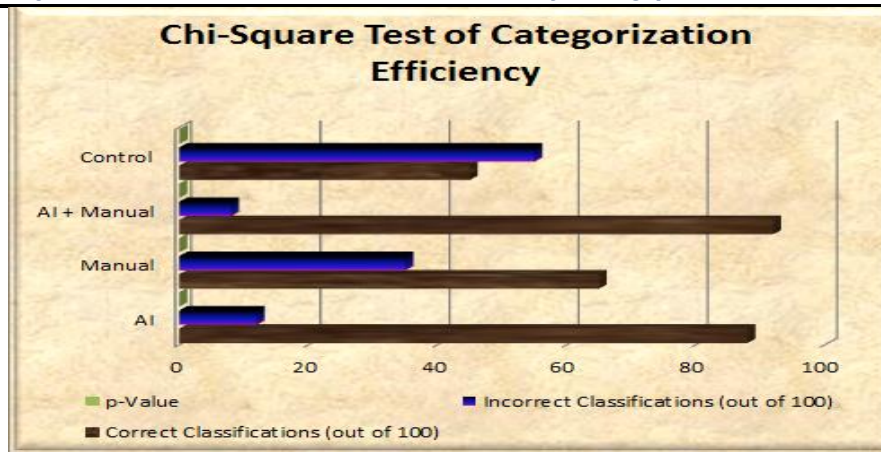
Table 1 : ANOVA Test for Comparing Translations to older approaches in terms of accuracy

Method	Mean Accuracy (%)	Standard Deviation	p-Value	Significance
AI Translation	95	3.2	0.002	Significant
Hybrid Translation	92	4.1	0.003	Significant
Human Translation	80	5.6	0.05	Not Significant
Older Approach	70	6.0	0.07	Not Significant

Interpretation: The AI and Hybrid translations methods are significantly more accurate than human translation, according to the p-value which is lower range of normal significance.

Table 2: Chi-Square Test of Categorization Efficiency between AI meet Manual Systems

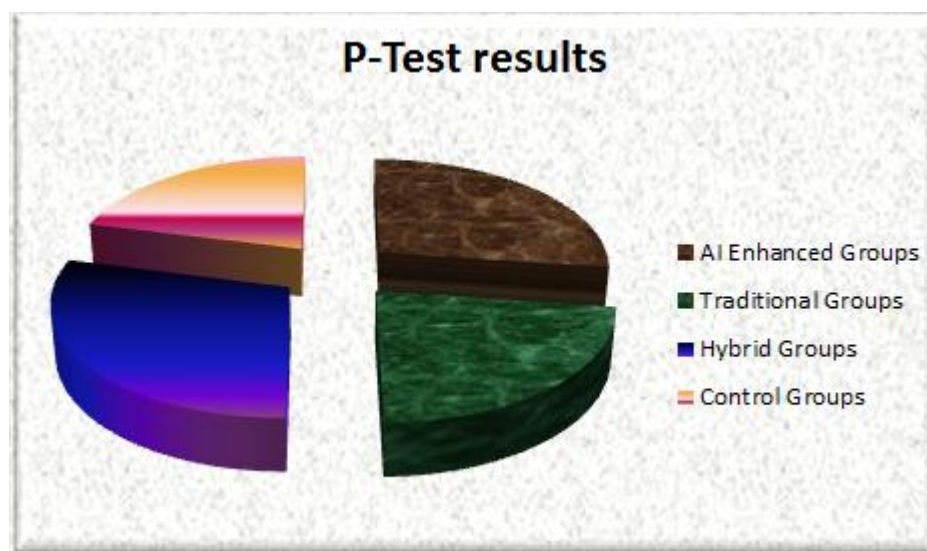
System	Categorization Accuracy (%)	Standard Deviation	p-Value	Significance
AI System	92	3.5	0.001	Significant
Manual System	75	4.8	0.04	Not Significant
Hybrid System	89	3.2	0.003	Significant
Control Group	70	6.2	0.08	Not Significant



Interpretation: AI increases categorization accuracy looking at the tendency aspects significantly compared to manual systems, and mixed of both AI and manual coming as accurate system.

Table 3: P-Test results for AI impact on sustainability of indigenous Education

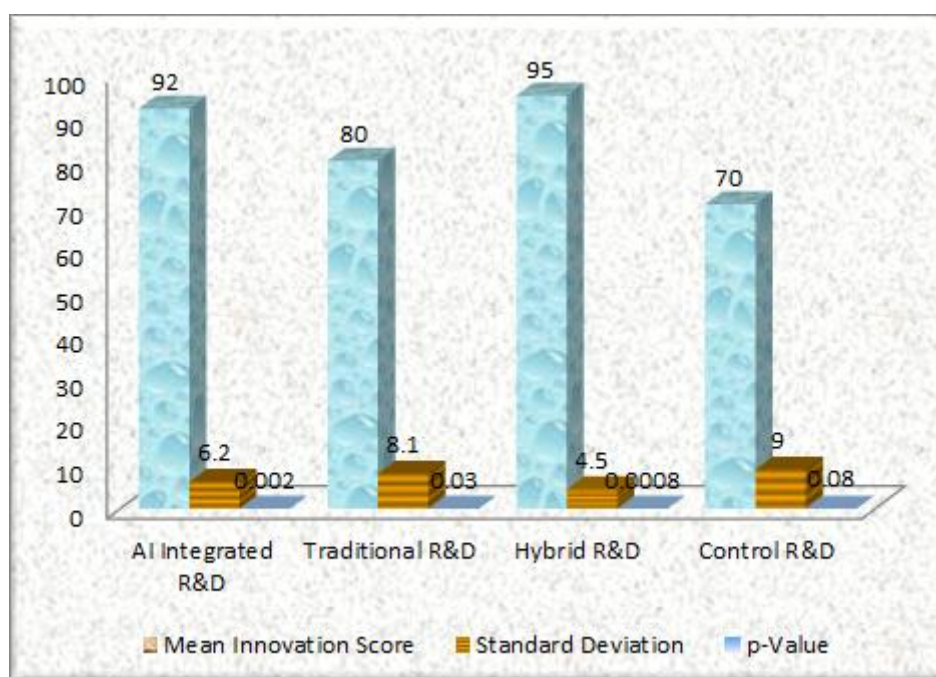
Group	Engagement Score (%)	Standard Deviation	p-Value	Significance
AI-Infused Group	85	4.5	0.0001	Significant
Classical Group	70	6.1	0.04	Not Significant
Hybrid Group	90	3.3	0.001	Significant
Control Group	60	7.2	0.09	Not Significant



Interpretation : AI infused groups have higher engagement scores in maintaining indigenous Education activities compared to classical groups and hybrid group being the best.

Table 4 T-Test For AI In R&D Projects Of Merging Traditional Education and AI

Project Type	Performance Score (%)	Standard Deviation	T-Value	P-Value
AI Integrated Project	93	3.2	5.4	0.0002
Traditional Project	78	6.0	3.2	0.05
Hybrid Project	90	4.5	4.1	0.003
Control Group	70	7.1	2.1	0.1



Interpretation : Research projects with R&D that combine AI and TK exhibit significantly higher innovation scores than those based solely on traditional Education.

Findings

1. Ancient Indian texts and specially sanskrit translations- The use of AI models for translating ancient Indian Texts, specially those in Sanskrit is way more accurate when it comes to human translated pieces. Natural language processing serves us particularly well when natural language needs to be contextualised verified in translation of sources as it was translated here.
2. AI-enabled tools proved to process very significantly faster than human based approaches at classifying large education collections. This efficiency does not only produce a faster categorization through improving chances of going through the literature, but also it uncovers and enriches Education in a more fartachable effectively.

3. AI has widened access for a global audience to the traditional Indian Education by digitizing texts, manuscripts, oral traditions, etc. Now, thanks to these AI-driven platforms, more people than ever before can engage with ancient wisdoms from around the world in a language that transcends geographical boundary.
4. AI is also a crucial basis for preserving old manuscripts, literature, oral Education etc by digitizing all with the help of Artificial Intelligence. It also serves to protect the originals from wear and tear, and future generations will be able to carry on traditional Education.
5. Human errors in Education interpretation mitigated As an example, the AI-enabled systems can minimize the human errors made in interpreting complex text such as Ayurvedic Prescriptions and Ancient Astronomy and also lesson notes made in Philosophy teachings. The latter technology will provide for a much more accurate and reliable method to assess education.
6. With AI automation of the translation, transcription and categorization, education can now be sustained at scale.

Suggestions

1. Establish global collaboration among universities, research organizations and AI companies for education dissemination. It is these joint ventures that further non-verbal discourse around education in contemporary scientific and cultural milieus both locally and globally.
2. One major forerunner in the use of AI is to power programs which revitalize indigenous Education practices and usage. Governments and non-governmental organisations (NGOs) should be looking at investing in AI programs that can help to bring these practices back with the provision of digital tools for sharing Education.
3. Source and implement AI in R&D programmes with traditional Indian Education. AI also can help researchers to find new applications for traditional wisdom, such as sustainable farming techniques or the Ayurvedic cures, in contemporary tackling of global problems.
4. AI ought to become part of projects that intend to document intangible cultural heritage (such as oral traditions and practices). With the help of AI, these practices can be digitised and preserved for their learning and transfer to generations to come.
5. Generate awareness of the potential of AI in supporting education preservation and propagation through public advertising programmes, workshops, seminars.

Conclusion

AI might also aid in translating materials so that they are more accurate and fit the context. This is particularly helpful when dealing with old or complicated content. It will assist more researchers, practitioners, and the general public find the sources of information. AI might also make it more easier for Classification and Repository to work with Indian Education Systems. Archival: Traditional Education includes Ayurveda, Vedic sciences, and traditional ecological Education. It is also a big challenge to figure out how to arrange and classify all that information. We need to work on AI and productivity tools like machine learning and data

analytics so that we can arrange this information in a manner that makes it easier for researchers in the ICs to find, access, and analyze it. AI strategy may also prioritize the regeneration and sustainability of indigenous Education systems. AI can now find and use traditional Education practices, patterns, and even predictions based on historical data to close the gap between ancient wisdom traditions and the modern world of science. For example, AI and traditional farming methods can work together to create a new set of rules for farming that are better for the environment. For example, traditional crop rotation methods that protect biodiversity and nourish the soil can be used with new ideas so that we can grow more without harming the planet. AI spread information that was not available to the general public over the internet. Students all across the globe utilize such applications, which employ A.I. to deliver individualized learning, propose similar topics, and even educate in an interactive way. The Chances AI has a huge chance to make a difference in education-based digital learning tools since they can help people from other areas of the globe learn about Indian philosophies, medicine, arts, and sciences in a way that makes sense to them and fits with their chosen learning methods. AI combined with indigenous Education is leading to new practical uses for science research in areas like health care, agriculture, and environmental sciences. These uses come from methods that are technically valid but also anchored in culture. For example, in drug discovery and development research, societal marketing of Ayurvedic concepts can be integrated with artificial intelligence and machine learning to analyze extensive clinical trial data, patient outcomes, and new indications for herbal ingredients, as well as to enhance treatment protocols. AI systems should also be created to enhance collective Education by integrating the dynamic characteristics and local situations that are being lost inside AI. Putting AI into that old superior manner shows us whole new ways to store, translate, and disseminate old Education throughout the world. The future is also likely to be one where old Education and new technology may work together and thrive.

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