A Comparative Study between Foreign Higher Educational Institutions' versus Indian Higher Educational Institutions' ICT/AI usage

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ABSTRACT

Context: *The main aim of this research study is to understand the importance of AI(ICT) for creating future ready professionals with future ready competencies The purpose of this study is also to compare the foreign Higher Education system versus Indian Education system.*

Objectives: *The researcher has done the research study to Analyse the 60 YouTube Video Data and find out the differences of approach in Foreign Instructors versus Indian Instructors while using ICT/AI(mainly Web 3.0, IoT and Robotics) for Higher Education scenarios [for Secondary data findings].*

Methodology: *For findings, the 60 video-data was collected from YouTube.com platform /website which aligns with ICT/AI in Education. AI technologies considered here were only web 3.0, IoT and Robotics. 47 YouTube videos from Foreign professionals of Academics background and Industry background and 13 YouTube videos from Indian Academic and Industry professionals are taken as secondary data for analysis. These 60 videos have been analysed using software to derive some findings for paper.*

Results: *Foreign educators score higher in visionary frameworks, future-readiness (AI/Robotics), and pedagogical transformation. Indian educators score higher in practical implementation, administrative efficiency, and addressing digital divide. Both contexts show complementary strengths: theory-driven innovation vs. applied resilience and adaptability. The data was collected from secondary source that is a YouTube. So the paper lacks primary data findings.*

Conclusion: *Contribution of the study is to very well understand the effect of arrival of AI in education sector and its pros and cons upon usage. To understand the differences in approach of the foreign institutions and Indian institutions of Higher Education, the study shows or highlights pitfalls in Indian Higher Education system vis-à-vis foreign education system in connections to AI or ICT usage in Academics.*

Paper Type: *It is an Analysis paper.*

Keywords: ICT, AI, Experiential learning, YouTube video, web 3.0, IoT, Robotics

1.INTRODUCTION :

(Cronin, C., 2017). and (Hug, T., 2017). explains that Education's foundation rests on the principle of openness, facilitated by knowledge sharing and collaborative creation. Open education builds upon this by employing accessible resources and practices to drive global educational improvement. This includes: removing entry barriers through open admissions, providing free access to information, utilizing adaptable open educational resources (OER), and promoting collaborative learning through open educational practices (OEP). The concept of "open" in this field is multifaceted, encompassing free access, critical thinking, flexible regulations, community building, and open licensing models. Research works (Hunt, E. B., 2014)., (Warwick, K., 2012)., (Berente, N. et al., 2021)., (Brynjolfsson, E. et al., 2017)., (Amisha, Malik et al., 2019). stresses how Educators are exploring the integration of advanced technologies,

beyond Web 2.0, into university teaching. Specifically, Artificial Intelligence (AI), encompassing machine learning, IoT, Web 3.0, and robotics, is being considered to enhance teaching competence. AI, defined as the ability of machines to mimic human intelligence, is rapidly evolving. Notable advancements include improved perception through voice recognition technologies and enhanced cognition and problem-solving through machine learning, demonstrated by applications in data centre optimization, fraud prevention, and cybersecurity. The concept of distributed intelligence, viewing networked computers as a collective brain, further underscores AI's potential. AI is also making significant strides in medicine, with applications ranging from virtual health data management to robotic surgery and prosthetics. The ongoing development of AI, particularly in areas like the Turing Test, reflects a drive towards achieving human-level cognitive performance in machines.

2. LITERATURE REVIEW :

(Johnson, Kawana W., 2018). Illustrious Work-based learning integrates practical experience into education by addressing workplace challenges through collaborations between institutions and employers. These programs, characterized by partnerships, employee-learners, curriculum-aligned tasks, competency assessments, on-site projects, and a shared evaluation framework, provide structured learning within a professional setting.

The Experiential Learning Model as discussed in (Shaketange, L.,Kanyimba, A. T., & Brown, E., 2017). posits that knowledge is developed through the transformation of experience. Its rising popularity in university education is attributed to:

> * Advances in training and learning technologies.

> * The preference of young learners for experiential approaches.

> * The value of innovative ideas generated through practical experience.

AI-aided education includes prediction, intelligent education, data analysis and innovative virtual learning. Emerging technologies like Embedded computers and sensors have facilitated the transfer of artificial intelligence to machines, buildings and robots according to (Chen, L. et al., 2020). AI can match 53% of adult competence level and are closing in on another 36% competence level as in the OECD survey.
First implementing AI-based tools to aid learning and the second employing AI tools to help in learning are the two complementary strands in AI in Education (AIEd) (Holmes, W. et al., 2020). Learning issues are solved using AI techniques in three different paradigms. In Paradigm One, to describe knowledge models and direct cognitive learning AI is employed where the beneficiaries of AI service are learners. In Paradigm Two, learners act as co-workers with AI to support learning. AI allows learners take the help of agency to learn in Paradigm Three (Ouyang, F. et al., 2021). Both AIEd and educational technology are computer applications, that challenge the teacher's role, change the idea of class strength, and pedagogy (Schiff, D., 2021).

3. RESEARCH GAPS IDENTIFIED :

The research gap identified is that how different AI technologies like Web 3.0,IoT and Robotics would transform the education scenario in the classroom and in the campuses of Education institutions especially Indian ones. A comparative analysis of foreign educationists and Industry versus Indian counterparts is surely missed.

4. OBJECTIVES OF THE STUDY :

For the research study researcher has put forward the below-mentioned objectives that are to be fulfilled for:

1. To Analyse the 60 YouTube Video Data and find out the differences of approach in Foreign Instructors versus Indian Instructors while using ICT/AI(mainly Web 3.0, IoT and Robotics) for Higher Education scenarios. [for Secondary data findings].

5. METHODOLOGY :

For objective 1 findings, the 60 video data was collected from YouTube.com platform /website which aligns with ICT/AI in Education. AI technologies considered here were only web 3.0, IoT and Robotics. 47 YouTube videos from Foreign professionals of Academics background and Industry background and 13 YouTube videos from Indian Academic and Industry professionals are taken as secondary data for analysis. These 60 videos have been analysed using software to derive some findings for paper.

6. DATA ANALYSIS AND INTERPRETATIONS :

Figure 1 below has analysis of 60 YouTube video data from foreign and Indian instructors from around the globe.

Dimension	Metric Type	Foreign Educators (F)	Indian Educators (I)
Pedagogical Integration	5-point Likert Scale	5 = Transformational (Education 4.0, TPACK, learner-centered)	3 = Practical (Tool-based integration, emerging learner-centered shifts)
Use of Global Frameworks	Count of frameworks cited	6 (e.g., TPACK, UNESCO, CCTI, OER, SDG 4, EdInformatization)	3 (e.g., SWAYAM, NPTEL, MHRD-NMEICT)
Tech Application Breadth	Number of ICT tools/concepts	18+ (AI, Robotics, LMS, VR, AR, MOOCs, Gamification, Assistive Tech, OER, etc.)	11 (Google Classroom, Moodle, SWAYAM, Web 3.0, Forms, Online Exams, etc.)
Teacher Role Shift (Facilitator)	5-point Likert Scale	5 = Fully emphasized as facilitator, innovator	3 = Moderately emphasized, still transitioning
Training/Professional Dev Focus	Mentions of training themes	7 (MOOCs, CPD, CDELTA, digital leadership, etc.)	5 (Webinars, LMS workshops, university sessions, local development programs)
Digital Divide/Access Discussion	Depth Score (1–5)	3 = General acknowledgment with high-level policy suggestions	5 = Deep focus on rural/institutional challenges and adaptation
Future Readiness (AI, Robotics)	Presence/Depth (1–5)	5 = Strong presence (AI-based learning, robotics, adaptive tech use)	2 = Mostly conceptual or aspirational discussion
Administrative ICT Use	Number of functions cited	5 (Analytics, grading, LMS use, feedback loops, smart classrooms)	6 (Exams, fee collection, attendance, LMS, records, content sharing)
Assessment Innovation	Presence of modern tools	4 = Emphasized (formative tech-based, gamified, analytics)	3 = Mentioned (Google Forms, quizzes)
Policy & Leadership Integration	Mentions of systemic policy	5 (UNESCO, Huawei-EduTech, EdTech 7, AI ethics)	2 (MHRD policies, university admin-led initiatives)
OER/Sharing Culture	Count of related terms	4 (OER, open access, MOOCs, sharing pedagogy)	2 (SWAYAM, MOOCs mentioned with limited sharing focus)
Blended/Hybrid Approach Use	Frequency Mention	5+ direct mentions	6+ mentions, especially in post-COVID Indian context
Equity and Inclusion in ICT	Equity Mentions Score (1–5)	4 = Inclusivity via design, assistive tech, policy vision	5 = Equity driven by access, infrastructure, student readiness

7. FINDINGS :

Qualitative Summary Insights/Findings from Research after analysing the above table

- **Foreign educators** score higher in **visionary frameworks, future-readiness (AI/Robotics), and pedagogical transformation**.

- **Indian educators** score higher in **practical implementation, administrative efficiency, and addressing digital divide**.

- Both contexts show **complementary strengths**: theory-driven innovation vs. applied resilience and adaptability.

8. LIMITATION:

Primary data was not utilized during analysis. That is only one limitation in the study.

9. CONCLUSION AND CONTRIBUTION OF THE STUDY :

Contribution of the study is to very well understand the effect of arrival of AI in education sector and its pros and cons upon usage. To understand the differences in approach of the foreign institutions and Indian institutions of Higher Education, the study shows or highlights pitfalls in Indian Higher Education system vis-à-vis foreign education system in connections to AI or ICT usage in Academics. Now its clear from the results that what Indian institutions has to change in its process with respect to AI/ICT. It must have visionary frameworks, future-readiness (AI/Robotics), and pedagogical transformation.

10. FUNDING INFORMATION:

11. GENERATIVE AI USED:

OPENAI CHATGPT was used for analysis of YouTube videos in this article text.

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