# THE IMPACT OF AI IN TRAINING & DEVELOPMENT FOR THE PROFESSORS IN PRIVATE COLLEGES WITH SPECIAL REFERENCES TO COIMBATORE DISTRICT

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## ABSTRACT

The Study focus on the impact of Artificial Intelligence (AI) in the training and development of faculty members in private colleges, with a special focus on the Coimbatore district. With the growing integration of AI tools in education, faculty development programs are evolving through personalized learning platforms, virtual training modules, and performance analytics. The study aims to assess the level of AI adoption, identify its benefits, and understand the challenges faced by educators in adapting to AI-based training. Primary data was collected through questionnaires distributed among faculty members from various private institutions in Coimbatore. The findings indicate that while there is a positive attitude towards AI adoption, limitations such as lack of technical skills and infrastructure hinder its full implementation. The study concludes with recommendations to enhance AI-based training programs for faculty, ensuring improved teaching quality and professional growth in the higher education sector.

**KEY WORDS:**

Artificial Intelligence, Training & Development, AI Adoption

## 1. INTRODUCTION:

Artificial Intelligence (AI) has become a revolutionary force across various industries, and the field of education is no exception. As educational institutions adapt to technological changes, AI is playing a crucial role in transforming traditional methods of teaching, learning, and faculty development. Faculty members are expected to stay updated with evolving educational tools and pedagogies, and AI offers solutions such as personalized learning modules, automated feedback systems, and performance analytics that support continuous professional growth. In higher education, faculty training and development are vital to ensure quality instruction and student success. Traditional training methods often face limitations such as uniform content delivery and lack of real-time assessment. AI addresses these gaps by offering customized learning experiences, tracking individual progress, and enabling flexible learning environments. These capabilities not

only improve the efficiency of training programs but also empower faculty to adopt modern teaching strategies that align with current academic demands. Coimbatore, known as a growing educational hub in Tamil Nadu, hosts a large number of private colleges where the adoption of AI in faculty development is gaining attention. However, the extent of its usage, the preparedness of faculty, and the challenges in implementation vary across institutions. This study aims to assess the impact of AI on training and development for faculty in private colleges in Coimbatore. The integration of AI in faculty development is not merely a technological shift but a strategic initiative that requires institutional support, adequate infrastructure, and continuous digital upskilling. This research is especially significant in today's context, where remote and hybrid learning models have become common, and faculty are expected to adapt swiftly to digital teaching environments.

### 1.1 Objective of the study:

- To examine the level of awareness about AI tools among faculty in private colleges.
- To identify the types of AI technologies being used for faculty training and development.
- To assess the perceived effectiveness of AI-based training in enhancing teaching capabilities.
- To identify the key challenges faced by faculty in adopting AI for professional development.
- To provide strategic recommendations for better integration of AI in faculty development initiatives.

### 1.2 Scope of the Study:

This study focuses on understanding the impact of Artificial Intelligence (AI) in the training and development of faculty members working in private colleges within the Coimbatore district. It aims to assess the level of awareness, adoption, and effectiveness of AI tools in enhancing professional competencies among educators. The research is limited to private institutions across various disciplines including arts, science, engineering, and management, ensuring a comprehensive perspective across academic streams. The study also covers commonly used AI-based platforms and applications such as learning management systems (LMS), virtual teaching assistants, adaptive learning modules, and AI-driven analytics used in faculty development. The findings will help identify institutional challenges, faculty perceptions, and the overall readiness of educational institutions in embracing AI for professional growth. The time frame of the research spans the academic year 2024–2025, offering a current and relevant insight into technological integration in faculty development initiatives.

### 1.3 Problem Identification:

- Limited Awareness and Training on AI Tools: Most faculty members in private colleges are either unaware of or inadequately trained in using AI-driven tools for their professional development, which hinders the adoption of modern teaching methods.
- Lack of Institutional Support and Infrastructure**:** Many private institutions lack a structured framework or policy for integrating AI into faculty training programs, resulting in inconsistent or ineffective implementation.
- Resistance to Change and Technological Hesitancy: A significant number of educators show reluctance or discomfort in shifting from traditional training models to AI-based systems, often due to fear of job displacement or lack of technical confidence.

### 1.4 Importance of the Study:

As education continues to evolve with the help of technology, it's crucial to understand how tools like Artificial Intelligence can support those at the heart of learning—our educators. Faculty members play a key role in shaping student success, and ensuring they are well-equipped with modern teaching methods is essential. In private colleges, especially in growing academic hubs like Coimbatore, there is a pressing need to keep pace with global standards while managing limited resources. This study is important because it sheds light on how AI can be effectively used to enhance faculty training and development. By exploring the realworld benefits and challenges of AI integration, the research aims to offer valuable insights that can help educational institutions improve teaching quality, promote continuous learning, and stay competitive in a rapidly changing landscape.

## 2. REVIEW OF LITRATURE

**Gonzalez, C. (2019) –** Gonzalez points out the rising importance of lifelong learning and upskilling in all professions, including teaching. The study introduces the concept of microlearning—AI-driven short learning modules that can be integrated into daily faculty routines for ongoing skill enhancement.

**Chou, P.-N. (2020) –** The study focuses on smart learning environments enhanced by AI and IoT technologies. The author finds that teachers trained in such environments show increased adaptability, datadriven decision-making, and improved classroom management. The research emphasizes the need for colleges to simulate smart environments during faculty training programs.

**Kumar, A. & Sharma, R. (2020) –** This article identifies both systemic and individual-level barriers to AI adoption in Indian education. For faculty, the lack of digital skills and fear of job redundancy are major concerns. The study calls for institutional strategies to build digital confidence through structured, hands-on training.

**Panigrahi, R. et al. (2020) –** This meta-analysis of faculty perceptions in online learning environments highlights AI as a major enabler of adaptive learning and assessment.

**Paul, J. & Criado, A. R. (2020) –** This work emphasizes the importance of methodological rigor in reviewing interdisciplinary topics. It supports the inclusion of diverse AI application areas (education, business, psychology) to understand how faculty development can benefit from varied approaches.

**Mishra, S. & Panda, S. (2021)** – This paper explores the Indian higher education landscape and finds that most institutions lack structured AI-based faculty development programs. The study recommends the incorporation of AI into teacher training policy and suggests partnerships between academia and tech providers to develop custom training modules.

**Bessenyei, I. (2021) –** This research defines a digital competency framework for faculty, including AI literacy, ethical AI use, data privacy awareness, and digital content curation. The study found that institutions with formal digital competency frameworks saw better faculty engagement with AI tools.

**Dwivedi, Y. K. et al. (2021) –** This multidisciplinary review recommends that AI in education must be explored not only from a technological lens but also from behavioral and organizational perspectives. Faculty development must focus on behavioral change and digital adaptation, not just tool use.

**Almalki, A., Almazroi, A., & Mohammed, R. (2022) –** The study finds that while faculty generally acknowledge the benefits of AI in automating and enhancing teaching practices, a lack of familiarity with specific tools prevents deeper engagement. Institutional training and peer support are vital for AI adoption.

**Thomas, M. & Vincent, A. (2023) –** A region-specific study conducted across Tamil Nadu (including Coimbatore) that surveyed over 200 faculty members. It found that only 28% had received formal training on AI tools, yet over 70% expressed interest if structured programs were provided. The study concludes that AI readiness depends largely on institutional leadership and training infrastructure.

## 3. RESEACH METHODOLOGY:

The research methodology is a crucial aspect of any academic investigation, providing a structured and scientific approach to gathering, analyzing, and interpreting data. In this study, the methodology has been carefully designed to explore the impact of Artificial Intelligence (AI) in the training and development of faculty members in private colleges, with a special reference to the Coimbatore district. The following sections

explain the research design, approach, sampling strategy, sample size, and tools used for data collection and analysis.

**Sampling Techniques:**

The study used stratified random sampling to ensure fair representation of faculty members across different academic disciplines in private colleges in Coimbatore. Institutions were grouped into categories like arts, science, commerce, engineering, and management, and participants were randomly selected from each group. This method helped reduce bias and ensured diverse, reliable responses.

**Sample Size:**

- **Target Population:** Faculty members in private colleges in Coimbatore District.
- **Survey Respondents**:122 Respondents from Faculty members in private colleges in Coimbatore District.

## 4. DATA ANALYSIS AND INTERPRETATION:

**TABLE -1 The table below shows the percentage: Are you aware of AI applications in education and faculty training?**

| Sl.no | Particulars | No. of Respondents | Percentage |
|---|---|---|---|
| 1 | Yes | 105 | 86.1% |
| 2 | No | 17 | 13.9% |
| | Total | 122 | 100% |

**INTERPRETATION:**

The data shows that 86.1% of respondents answered "Yes," indicating a strong positive response toward the particular statement or question asked. Only 13.9% responded "No," showing minimal opposition or disagreement.

**MAJORITY:**

The majority of respondents (86.1%) selected "Yes." This clearly reflects a favorable or supportive attitude among the participants.

**CHART- 1 The chart below shows the percentage:**

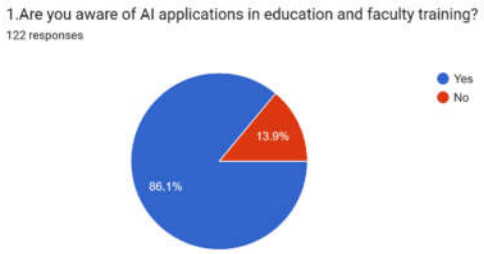



**TABLE -2 The table below shows the percentage:**

**Have you undergone any AI-based faculty training programs?**

| S.no | Particulars | No.of Respondents | Percentage |
|---|---|---|---|
| 1 | Yes | 91 | 75.2% |
| 2 | No | 30 | 24.8% |
| | Total | 121 | 100% |

**INTERPRETATION:**

The data shows that 75.2% of respondents answered "Yes," indicating a strong positive response toward the particular statement or question asked. Only 24.8% responded "No," reflecting a smaller group in disagreement.

**MAJORITY:**

The majority of respondents (75.2%) selected "Yes." This clearly reflects a favorable or supportive attitude among the participants.

**CHART -2 The chart below shows the percentage:**

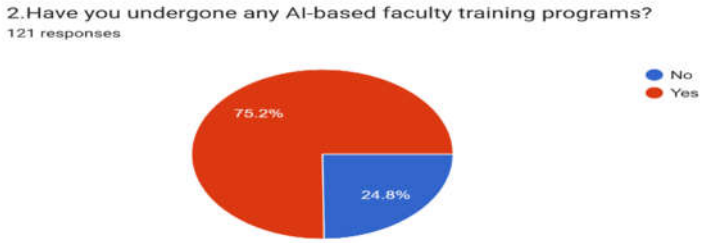


**TABLE -3 The table below shows the percentage: If yes, which AI-powered tools have you used?**

| S.no | Particulars | No.of Respondents | Percentage |
|---|---|---|---|
| 1 | Learning Management System(LMS) | 83 | 68.6% |
| 2 | AI Assessment Tools | 45 | 37.2% |
| 3 | Chatbots/Virtual Assistants | 48 | 39.7% |
| 4 | AI-powered Research Assistance | 43 | 35.5% |
| 5 | None of the above | 13 | 10.7% |

**INTERPRETATION:**

The data shows that Learning Management Systems (68.6%) are the most widely used AI tool. A smaller proportion uses other AI tools, and very few (10.7%) reported no usage.

**Majority:**

The majority of respondents (68.6%) selected Learning Management System (LMS). This shows LMS is the most commonly adopted AI technology in institutions.

**CHART -3 The chart below shows the percentage:**

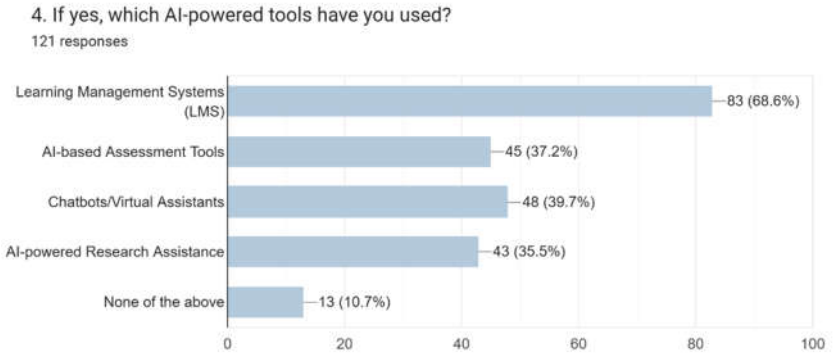



**TABLE -4 The table below shows the percentage: Do AI-based assessments improve faculty performance?**

| S.no | Particulars | No.of Respondents | Percentage |
|---|---|---|---|
| 1 | Yes | 92 | 75.4% |
| 2 | No | 11 | 9% |
| 3 | Not sure | 19 | 15.6% |
| | Total | 122 | 100% |

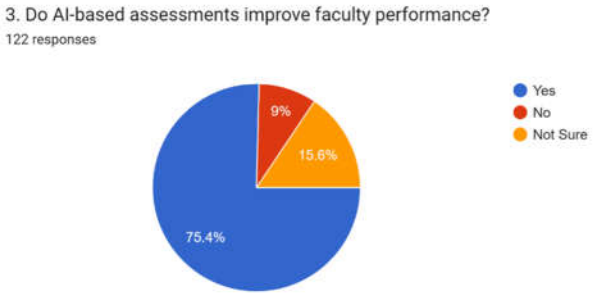
**INERPRETATION:**

Most respondents (75.4%) support the idea or initiative in question. A smaller group is uncertain (15.6%), while only 9% oppose it.

**MAJORITY:**

The majority (75.4%) responded with "Yes," indicating strong overall agreement or support.

**CHART -4 The chart below shows the percentage:**




**FINDINGS:**

1. The majority of the respondents in the survey have opted for "Yes" (86.1%), indicating support.
2. The majority of the respondents in the survey have opted for "Yes" (75.2%), reflecting a positive attitude**.**
3. The majority of the respondents in the survey have opted for Learning Management System (LMS) (68.6%) as the AI technology used.
4. The majority of the respondents in the survey have opted for "Yes" (75.4%), indicating strong overall agreement or support.

**SUGGESTIONS:**

1.Implement AI-powered feedback systems that give immediate suggestions during teaching simulations or video reviews. Utilize AI to adjust quiz difficulty based on the learner's performance to better gauge understanding. Offer AI tools that help faculty generate syllabi, lesson plans, or assessments based on curriculum goals. Provide visual dashboards with AI-powered insights into training progress and recommended next steps.

**CONCLUSION:**

Artificial Intelligence (AI) is emerging as a transformative tool in the field of faculty training and development, offering educators in private colleges innovative ways to enhance their teaching practices and professional growth. Through personalized learning resources, real-time research support, and automated assessment tools, AI empowers faculty to improve efficiency, stay updated with evolving academic trends, and deliver more engaging learning experiences. This data-driven approach not only strengthens instructional quality but also supports continuous skill development and informed decision-making. Furthermore, AI simplifies traditionally time-consuming tasks such as content delivery, evaluation, and feedback, allowing educators to focus more on mentorship and academic innovation. As AI technologies become more accessible and user-friendly, their adoption is steadily increasing among faculty members, particularly in institutions across Coimbatore. Overall, AI is reshaping faculty development by fostering a smarter, more efficient, and future-ready academic environment in private higher education.

**REFERENCES:**

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3.Abhijeet Thakur & Punamkumar Hinge (2023): This paper explores the implementation of AI in recruitment and selection, showcasing case studies that highlight its potential to enhance efficiency, widen candidate pools, and reduce subjective biases.

4.Madhuri (2023): The infusion of artificial intelligence into human resources has transformed traditional practices, optimizing organizational efficiency and elevating the employee experience.

5.Uma & Deepika (2023): The traditional reliance on CVs in recruitment is considered outdated and prone to hiring mismatches.