

Evaluating the Relevance of AI-Enhanced Learning in Developing Countries: The Case of Postgraduate Candidates at Pokhara University, Nepal.

**Advancing to Doctoral Research Stage
LCDB7012
Prof. Amare Desta**

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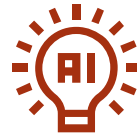
Introduction

- AI-enhanced learning uses technologies like machine learning and generative AI to personalize learning, automate feedback, and support academic tasks such as writing and research (Holmes et al., 2019).
- In developing countries, it helps expand access to quality education, though challenges like limited infrastructure and digital literacy affect its effectiveness (UNESCO, 2022).
- AI has become especially valuable for postgraduate students who require advanced academic and research skills (Williams, 2024).
- Pokhara University is increasingly using digital and AI-assisted learning tools, with postgraduate students relying on them for academic writing, research support, and managing complex assignments. This makes PU a key context for examining the relevance of AI-enhanced learning.

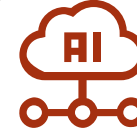
Problem Statement



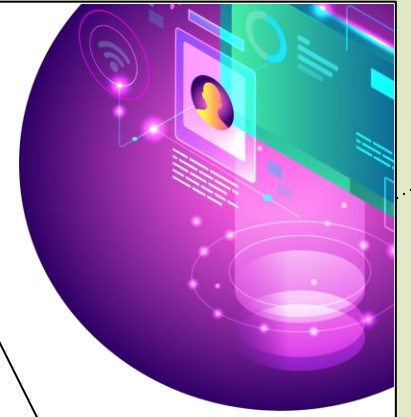
Despite growing recognition of AI-enhanced learning in higher education, research is predominantly focused on developed countries, with limited empirical studies in developing nations (Holmes, , 2019).



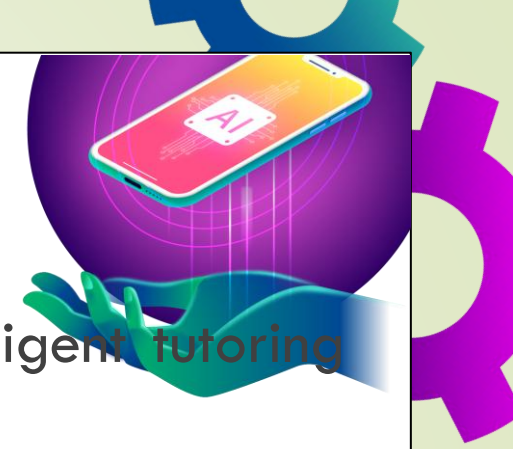
Nepal's universities are increasingly adopting AI tools to support teaching, learning, and research (Chapagai & Adhikari, 2024; Ojha, 2024). However, there is still limited research on postgraduate students' use, perceptions, and learning outcomes associated with AI-enhanced learning, especially at Pokhara University.



Limited evidence hinders understanding of AI's impact on learning, productivity, digital readiness, and ethics in Nepalese higher education, restricting informed strategies for its effective use.



Literature review

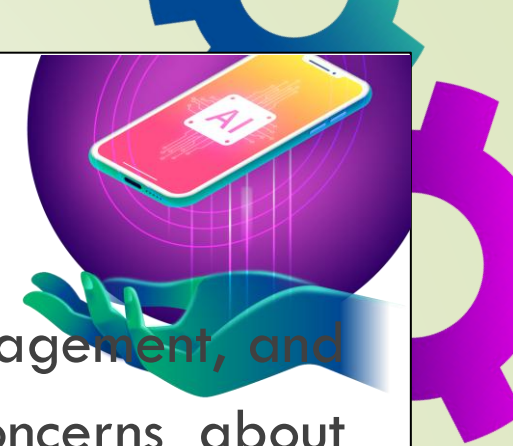


1 O'Neill et al. ,2021; Chhetri et al. ,2024 note that AI tools like intelligent tutoring systems can personalize education, but infrastructure and digital literacy challenges may limit their effectiveness in countries like Nepal.

2. Dhakal et al. (2025) argue that AI can advance education and human development in Nepal by improving learning, productivity, and key sectors, but challenges such as weak infrastructure, low AI literacy, policy gaps, and ethical concerns must be addressed through human-centered adoption and strategic collaboration.

3. Pasa et al. (2025) identify structural barriers to AI integration in Nepali higher education, including weak infrastructure, institutional resistance, policy gaps, and limited expertise, emphasizing that addressing these challenges is essential for improving quality and fostering innovation.

Literature review



4. Hamid et al. (2023) found that ChatGPT enhances collaboration, engagement, and problem-solving in process-driven, problem-based learning, though concerns about accuracy and clarity remain, making it a promising supplement to traditional methods.

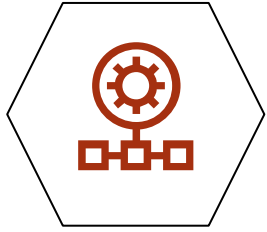
5. Khadka et al. (2025) examine AI use in English Foreign Language teaching in Nepal, showing improvements in engagement and personalized learning, while noting challenges like limited infrastructure and low teacher familiarity, underscoring the need for training and policy support.



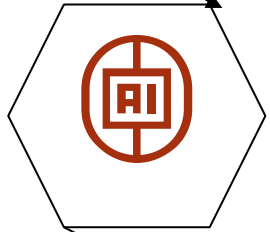
Research Objectives

- To assess postgraduate students' awareness, accessibility, and patterns of usage of AI-enhanced learning tools at Pokhara University.
- To examine postgraduate students' perceptions regarding the benefits and challenges of AI-based learning tools.
- To evaluate Pokhara University's institutional readiness, policies, and faculty preparedness for AI-based learning integration.
- To analyze the overall impact of AI-enhanced learning on academic institutions in developing countries, with special reference to Pokhara university

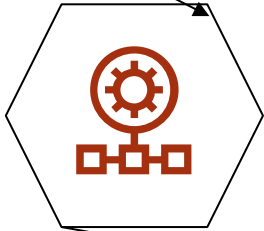
Research questions



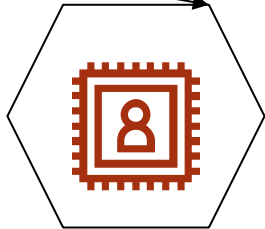
How are universities in developing countries, including Nepal, being affected by AI-based learning tools?



What is the awareness and usage level of AI learning tools among postgraduate students at Pokhara University?



How do postgraduate students perceive the benefits and challenges of AI-based learning tools?



How prepared is Pokhara University technically and institutionally to integrate AI tools into postgraduate education?



Theoretical framework

a) Technology Acceptance Model (TAM) – Davis, 1989

Explains students' willingness to adopt AI-enhanced learning.

b) Unified Theory of Acceptance and Use of Technology (UTAUT) – Venkatesh et al., 2003

Offers a broader adoption model incorporating organizational and social context, useful for faculty/staff adoption.

c) Diffusion of Innovation Theory – Rogers, 2003

Explains *how AI tools spread within an institution*, can help analyze barriers and enablers of adoption at Pokhara University.

d) Learning Analytics & AI in Education Frameworks ,Luckin et al., 2016:

Links AI adoption with actual learning outcomes. It offers theoretical grounding for evaluating relevance.

Methodology



Research Design

**Explanatory
sequential
mixed-methods
design**



Population

Postgraduate candidates, Faculty Members, Administration and Management, IT and E-Learning Support Units at Pokhara University



Data
Collection
Method

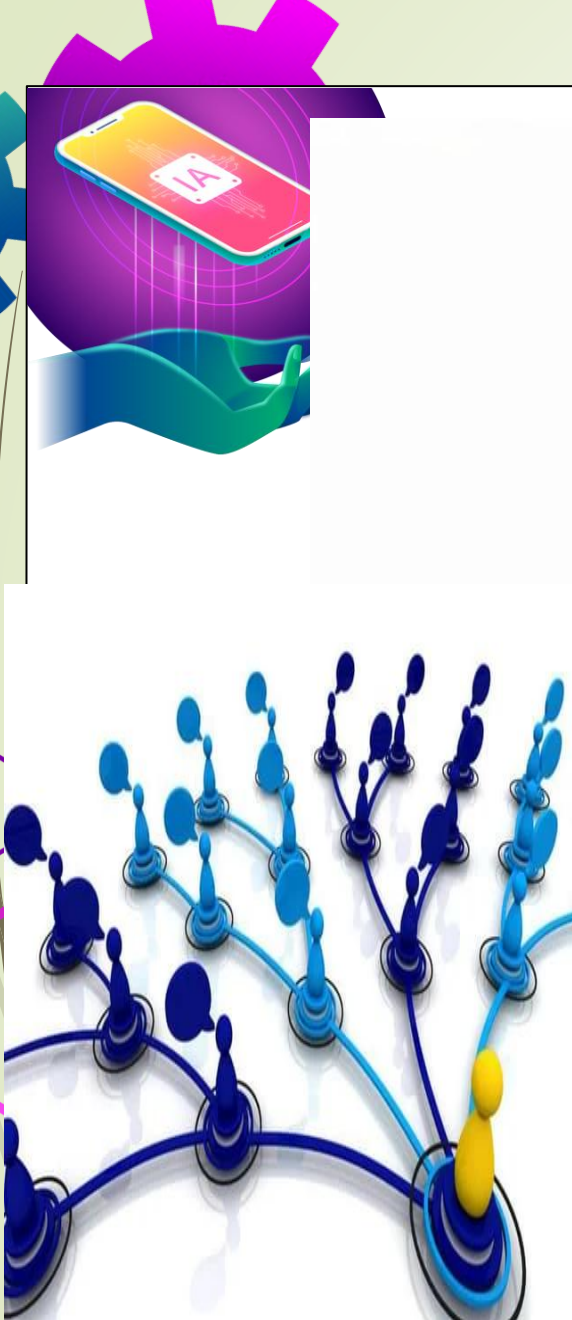
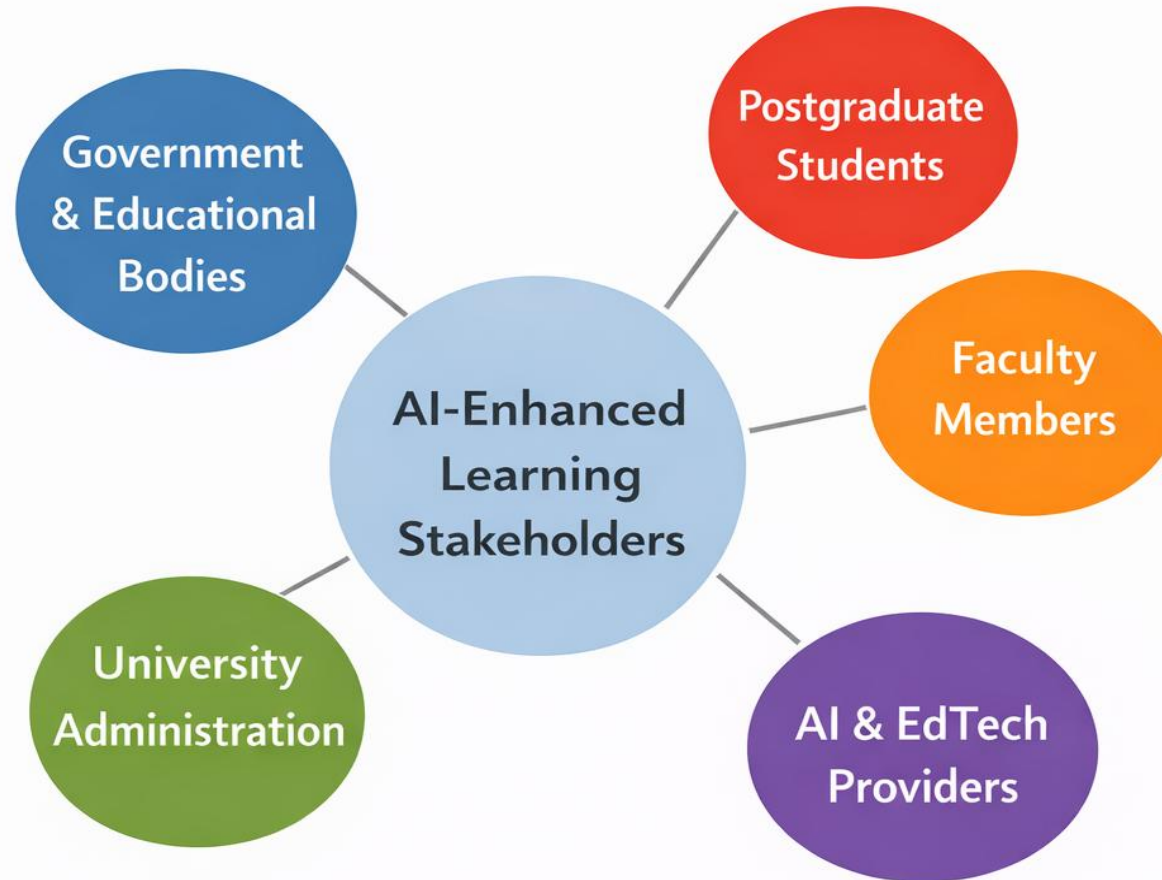
A stratified sampling approach is used. Within each stratum, random sampling is applied, and purposive sampling is used for students and faculty members and others will be participating in the qualitative interviews.



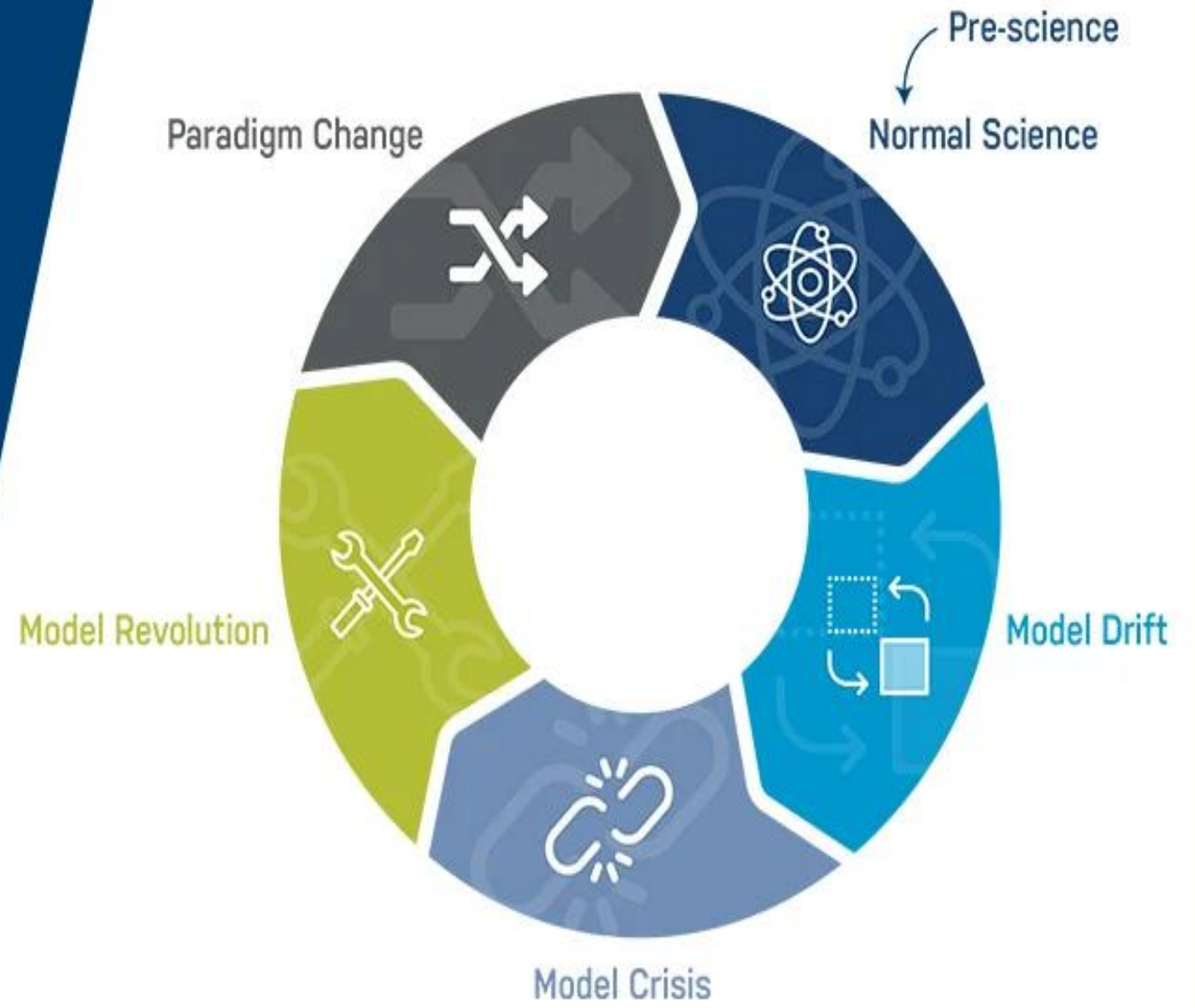
Sample Size

The study targets 200-300 survey respondents, and A smaller purposive sample will be selected for the qualitative phase to ensure depth and thematic saturation.

Major stakeholders



The Kuhn Cycle





Kuhn's Paradigm Theory: A New Lens for Research on AI-Enhanced Learning

- A paradigm is a shared framework guiding research problems, methods, and accepted evidence (Kuhn, 1962).
- Scientific progress occurs when outdated models are replaced by frameworks that better explain emerging realities.
- In AI-enhanced learning in developing countries, Kuhn's theory supports moving beyond traditional education models to paradigms responsive to digital and socioeconomic changes.



Crisis in the Current AI-Enhanced Learning Model

1. Policy Implementation Failure
2. Stakeholder Exclusion
3. Methodological Limitations
4. Digital Divide & Technological Inequality

Paradigm Shift – A New Research Model

From (Old Paradigm)

Education as content delivery

Single-theory focus (e.g., Technology Acceptance Model only)

Isolated methods (quantitative surveys only)

Top-down policy & tech adoption

Limited stakeholder engagement

To (New Paradigm – My Research)

AI-enhanced learning as a student-centered, adaptive system

Theory cluster: Technology Acceptance, Stakeholder, Policy Implementation, and Resilience theories

Pragmatic mixed-methods: surveys, interviews, Focused Group Discussions,

Policy and technology use as dynamic, shaped by institutional implementation and student engagement

Inclusive participation: students, faculty, and administrators as co-actors in research

References

Kuhn (1962)

Creswell & Creswell (2018); Folke et al. (2010);

Guba & Lincoln (1994);

Chugh et al.(2023)

Freeman (1984)



Reflection on My Research Journey

Initially, I assumed a positivist approach, relying on survey data and Western models of AI in education.

Kuhn's idea of paradigm shifts made me question this assumption, as I realized that local context, infrastructure, and cultural perceptions heavily influence AI adoption.

Result:

- Moved to context-sensitive, inclusive frameworks.
- Prioritized student and faculty experiences alongside measurable outcomes.
- Adopted a pragmatic paradigm, valuing flexibility, relevance, and methodological pluralism.

My research now focuses on producing practical, context-aware insights to guide AI-enhanced learning strategies in Nepalese higher education.

Ethical Considerations and Data Protection

- **Informed Consent:** Participants (postgraduate students and faculty) will receive a clear, bilingual digital consent form explaining the purpose of the study, procedures, and their rights, including the voluntary nature of participation.
- **Anonymity and Confidentiality:** No personal identifiers will be collected. Pseudonyms will be used in interview transcripts and reports to protect identities. Data will be presented in aggregated form where possible to further ensure confidentiality.
- **Data Protection:** All data will be securely stored on encrypted cloud storage with access restricted to the research team. Compliance with GDPR and institutional data policies will be ensured.
- **Voluntary Participation:** Participants may skip any questions or withdraw from the study at any time without any negative consequences.



Ethical Approval

- A formal ethics application will be submitted to the University of Wales Trinity Saint David (UWTSD) Ethics Committee.
- Approval will address:
 - ❖ Potential research risks associated with AI-enhanced learning studies
 - ❖ Secure and GDPR-compliant storage, handling, and processing of data

Conclusion

AI-enhanced learning offers a promising avenue for improving postgraduate education in developing countries such as Nepal.

This study will explore its relevance at Pokhara University by examining the perspectives of key stakeholders, including students, faculty, and university administration.

The research aims to identify both opportunities and challenges in implementing AI tools, providing evidence-based insights that can guide effective integration.

Ultimately, the findings will inform strategies to enhance teaching and learning, ensuring that AI adoption aligns with local educational needs and maximizes learning outcomes.

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THANK YOU

