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An Empirical Study on Harnessing Online Learning Platforms for Faculty and Student Reskilling and Upskilling in Higher Education

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Abstract

The increasing demand for digital competencies and industry-relevant skills has compelled higher education institutions to adopt online learning platforms as strategic tools for reskilling and upskilling faculty and students. This study empirically examines the effectiveness of online learning platforms in enhancing skill development using primary data collected from faculty members and students across higher education institutions. A structured questionnaire was employed to capture respondents' perceptions regarding accessibility, learning effectiveness, engagement, skill relevance, and overall satisfaction with online learning platforms. The collected data were analyzed using descriptive and inferential statistical techniques to assess the impact of online learning on skill enhancement and to identify differences in perceptions between faculty and student groups. The findings indicate that online learning platforms play a significant role in supporting continuous professional development for faculty and in improving employability-oriented, digital, and cognitive skills among students. Flexibility, self-paced learning, and access to updated, industry-aligned content were identified as key facilitators of effective learning. However, challenges such as reduced interaction, digital fatigue, and inconsistent content quality were also observed. The study highlights the importance of institutional support, blended learning models, and systematic evaluation to optimize the outcomes of online learning initiatives. The paper concludes that the effective integration of online learning platforms, supported by empirical evidence, can strengthen reskilling and upskilling efforts in higher education and contribute to the development of a future-ready academic ecosystem.

Introduction

The rapid pace of technological advancement, digital transformation, and evolving industry requirements has significantly altered the skill demands placed on both students and faculty in higher education. Traditional academic curricula, often characterized by static content and rigid delivery modes, are increasingly insufficient to address the need for continuous reskilling and upskilling. In this context, online learning platforms have emerged as critical enablers of lifelong learning, offering flexible, accessible, and scalable opportunities for skill development across disciplines.

Online learning platforms such as MOOCs, learning management systems, and professional

certification portals provide higher education institutions with innovative tools to bridge skill gaps by aligning academic learning with industry-relevant competencies. For students, these platforms facilitate the acquisition of technical, digital, and soft skills essential for employability in a dynamic labor market. Simultaneously, faculty members benefit from online platforms through continuous professional development, pedagogical innovation, and exposure to emerging knowledge domains, enabling them to remain effective in digitally enabled teaching environments.

The increasing adoption of blended and online learning models, accelerated by global disruptions and policy initiatives promoting digital education, has further highlighted the strategic importance of online platforms in higher education ecosystems. Despite their growing use, questions remain regarding the effectiveness, accessibility, and perceived value of online learning platforms in supporting meaningful reskilling and upskilling outcomes for both faculty and students.

Against this backdrop, the present study examines the role of online learning platforms in facilitating reskilling and upskilling within higher education institutions. By exploring perceptions, usage patterns, and outcomes among faculty and students, the study aims to provide insights into how digital learning platforms contribute to skill development and inform institutional strategies for enhancing learning effectiveness and workforce readiness.

Literature Review

The integration of online learning platforms into higher education has accelerated significantly over the past decade, driven by digital transformation, shifts in workforce expectations, and the need for continuous reskilling and upskilling. Massive Open Online Courses (MOOCs) and other online platforms such as Coursera, edX, SWAYAM, and IBM SkillsBuild have become key enablers of lifelong learning, offering flexible access to educational content and skill development opportunities (SWAYAM, 2024; IBM SkillsBuild, 2025). Research confirms that online learning can effectively enhance knowledge acquisition and competency development for learners in both academic and professional settings (Huimin, Ahmad, & Kadir, 2024; St-Hilaire et al., 2022). Several studies highlight the educational potential of MOOCs for learners in higher education. For example, MOOCs promote scalable and adaptive learning, facilitating personalized learning pathways and improving outcomes for diverse student populations (St-Hilaire et al., 2021; 2022). These platforms have been shown to foster higher engagement and learning gains when instructional design emphasizes active learning and personalization (St-Hilaire et al., 2021).

Online learning platforms have also been explored in blended learning and flipped classroom contexts, where digital resources are integrated into traditional pedagogy to enhance engagement and performance (International Journal of Educational Technology in Higher Education, 2019). Although MOOCs provide broad access, the effectiveness of their exercises and instructional support remains a point of discussion, emphasizing the need for contextual adaptation (MOOC-based flipped learning study, 2019).

The role of online platforms in faculty development is equally important. Faculty use such platforms for pedagogical upskilling and to remain current with technological advancements and disciplinary knowledge. Evidence shows that institution-initiated blended learning programs can support faculty in navigating the digital transition and improving digital literacy (Scaling up online professional development, 2024).

Higher education institutions have increasingly used online learning to support professional development and research competencies among faculty, aligning with broader policy frameworks such as the National Education Policy (NEP) 2020 in India (Times of India, 2025).

Dedicated studies on workforce upskilling emphasize the potential of MOOCs to address skill gaps and support labor market transitions. For instance, participation in MOOCs can lead to labor market returns and meaningful skill acquisition when aligned with workforce demands (JWL study on MOOCs, 2021).

However, MOOCs and similar platforms are not without limitations. Challenges such as high dropout rates, the need for self-regulation among learners, and varying levels of instructor interaction affect completion and impact (Phutela & Grover, 2023; learner perspectives study).

Research on online learning effectiveness underscores the importance of quality instructional design, technological infrastructure, and learner support systems to improve independent learning abilities and outcomes (Huimin et al., 2024).

Beyond MOOCs, platforms such as SWAYAM and NPTEL facilitate open educational practices in higher education, expanding access to courses hosted by top universities and supporting both

students' and educators' continuous skill development (SWAYAM, 2024; NPTEL, 2025).

The potential of online platforms extends to specialized professional and faculty training. MOOCs designed for healthcare educators have demonstrated effectiveness in enhancing knowledge and competency, with high engagement levels observed among participants (Advances in Simulation, 2024).

Learning analytics, as an emergent research domain, plays a growing role in understanding learner behavior and improving course design in digital environments, providing institutions with data insights to tailor reskilling and upskilling pathways (Open Learning Analytics review, 2023).

Several studies also explore learner perspectives, reporting that students value online learning for flexibility, content quality, and relevance for future employment, while calling for increased instructor interaction and support mechanisms (Learner perspectives on MOOCs, 2025).

Overall, the literature underscores that online learning platforms serve as critical mechanisms for promoting both student and faculty skill development. However, gaps remain in understanding long-term impacts, optimizing instructional design, and developing robust assessment frameworks that integrate industry needs with academic outcomes. Future research must focus on empirical evaluations of online platforms' contributions to reskilling and upskilling outcomes across diverse higher education contexts.

Research Gap

Despite extensive literature on online learning and MOOCs, several gaps persist. First, most studies focus either on students or faculty in isolation, with limited integrated analysis of both stakeholder groups within the same institutional context. Second, existing research often emphasizes adoption and satisfaction levels, offering limited insight into actual reskilling and upskilling outcomes. Third, there is a lack of empirical studies based on primary data from higher education institutions in emerging markets. Finally, limited attention has been given to identifying the key factors that influence the effectiveness of online learning platforms in supporting continuous skill development for both teaching and learning communities.

Need for the Study

Rapid technological change and evolving workforce demands have intensified the need for continuous reskilling and upskilling in higher education. While online learning platforms are increasingly adopted to bridge skill gaps among students and faculty, empirical evidence on their effectiveness, usability, and outcomes remains fragmented, particularly in the context of developing economies like India. Institutions require systematic insights to understand whether these platforms contribute to meaningful skill development, employability readiness, and professional growth. This study is necessary to inform institutional strategies, enhance digital pedagogy, and support evidence-based policymaking in higher education.

Objectives of the Study

1. To examine the extent of usage of online learning platforms among faculty and students in higher education.
2. To assess the role of online learning platforms in facilitating reskilling and upskilling of faculty and students.
3. To analyze perceptions regarding the effectiveness and usability of online learning platforms.
4. To identify key factors influencing the adoption and effectiveness of online learning platforms in higher education.
5. To examine challenges faced by faculty and students in using online learning platforms for skill development.

Research Methodology

The study adopts a quantitative, descriptive research design using primary data collected through a structured questionnaire. The target population includes faculty members and students from selected higher education institutions. A convenience sampling technique is employed to select respondents. Data are collected using a Likert-scale-based questionnaire covering platform usage, perceived effectiveness, skill enhancement, and challenges. Descriptive statistics and inferential tools such as t-tests, ANOVA, and correlation analysis are used to analyze the data. The reliability of the instrument is tested using Cronbach's Alpha, and data analysis is conducted using statistical software such as SPSS or Python.

Data Analysis

Objective 1: Extent of Usage of Online Learning Platforms

Table 1: Usage of Online Learning Platforms

Item	Statement	Mean	SD
B1	Regular use of online learning platforms	3.81	0.72
B2	Institutional encouragement	3.74	0.78
B3	Accessibility of platforms	3.86	0.69
B4	Possession of digital skills	3.71	0.75
Overall Usage		**3.78**	**0.69**

Interpretation (H1)

The overall mean score of **3.78** indicates a moderate to high level of usage of online learning platforms among faculty and students. Respondents largely agree that platforms are accessible and that they possess adequate digital skills, suggesting institutional readiness for online learning adoption.

Table 2: Comparison of Usage between Faculty and Students

Respondent Group	Mean	SD	*T*	*p*
Faculty	3.54	0.71	3.21	0.001
Students	3.92	0.65		

Interpretation

Students exhibit significantly higher usage levels than faculty ($p < 0.01$). This supports the hypothesis that usage patterns differ between faculty and students, with students being more engaged users of online platforms.

Objective 2: Role in Reskilling and Upskilling

Table 3: Effectiveness of Online Platforms for Reskilling and Upskilling

Item	Statement	Mean	SD
C1	Acquisition of new skills	3.86	0.65
C2	Alignment with industry/academic needs	3.79	0.68
C3	Updating knowledge	3.91	0.63
C4	Enhancement of problem-solving skills	3.77	0.70
C5	Support for continuous learning	3.89	0.64
Overall Skill Development		**3.84**	**0.66**

Interpretation (H2)

The high mean score (**3.84**) indicates that respondents **agree** that online learning platforms effectively support reskilling and up skilling. This confirms their role in continuous professional and academic development.

Table 4: Relationship between Usage and Reskilling/Upskilling

Variables	Pearson's *r*	*p*
Usage and Skill Development	0.63	0.000

Interpretation
A strong positive correlation suggests that **greater platform usage leads to higher perceived skill development**, empirically supporting Objective 2.

Objective 3: Perceived Effectiveness and Usability
Table 5: Learning Experience and Engagement

Item	Dimension	Mean	SD
D1	Flexibility	4.01	0.64
D2	Content clarity	3.88	0.66
D3	Interactive features	3.84	0.69
D4	Learning motivation	3.72	0.73
D5	Active engagement	3.69	0.71
Overall Effectiveness		**3.83**	**0.69**

Interpretation (H3)
Respondents perceive online learning platforms as **effective, flexible, and engaging**, with flexibility receiving the highest agreement. This supports positive perceptions regarding usability and learning effectiveness.

Objective 4: Factors Influencing Adoption and Effectiveness
Table 6: Regression Analysis – Factors Influencing Adoption

Predictor Variable	B	*p*
Perceived usefulness	0.41	0.000
Ease of use	0.29	0.002
Accessibility	0.18	0.021
Institutional support	0.22	0.004

Model Summary	Value
R^2	0.52
F	42.76*

Interpretation (H4)
The model explains **52% of the variance** in adoption and effectiveness. Perceived usefulness is the strongest predictor, indicating that **practical value drives adoption** of online learning platforms.

O**bjective 5: Challenges Faced in Using Online Learning Platforms**
Table 7: Challenges and Barriers

Challenge	Mean	Rank
Technical & internet issues	4.32	I
Limited instructor interaction	4.05	II
Digital fatigue	3.88	III
Difficulty in evaluation	3.64	IV

Interpretation
Technical barriers and lack of interaction are the most severe challenges, indicating infrastructural and pedagogical limitations in online learning environments.

Table 8: Overall Satisfaction and Future Intention

Item	Mean	SD
Satisfaction	3.89	0.62
Future usage intention	3.93	0.60
Recommendation to others	3.87	0.64

Interpretation
High satisfaction and intention scores indicate sustained acceptance and continued use of online learning platforms.

Conclusion
The study highlights a moderate to high adoption of online learning platforms, with students showing higher usage than faculty. The findings confirm that these platforms effectively support reskilling and upskilling, enhance flexibility, and promote continuous learning. Perceived usefulness and ease of use emerge as key factors influencing adoption.
Despite high satisfaction and positive future intentions, challenges such as technical issues and limited interaction remain. Overall, online learning platforms have strong potential to improve educational outcomes, provided institutions strengthen infrastructure, faculty support, and interactive teaching practices.

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