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Online Teaching in Higher Education: A Systematic Review of Faculty Challenges and Constraints

Anamica Maan[1], Dr. Kapil Malhotra[2*], Rubi Saini[3] and Sushma Yadav[4]

[1,3,4]Research Scholar, Department of Commerce, Maharshi Dayanand University, India
[2*]Assistant Professor, Department of Commerce, Maharshi Dayanand University, India
*Corresponding Author

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Abstract

This study systematically reviews and synthesizes the challenges faced by faculty in online higher education, with particular attention to transformations emerging from the COVID-19 pandemic and the shift toward digitally mediated teaching. Guided by PRISMA 2020 guidelines, a structured search of the Scopus database was conducted for peer-reviewed, open-access journal articles published between 2019 and 2026. After a multi-stage screening and eligibility procedure, 14 studies were retained for qualitative synthesis and examined using a nine-dimensional analytical framework. The findings indicate that faculty challenges extend well beyond technological constraints to include pedagogical adaptation difficulties, concerns regarding assessment integrity, increased workload, psychological strain, reduced interaction, and institutional barriers. Among these, workload intensification, student engagement difficulties, and burnout emerged as the most persistent and interrelated problems affecting instructional effectiveness. The review also identifies disparities in digital readiness and uneven institutional support, raising significant concerns about equity, access, and long-term sustainability of online higher education. Overall, the study emphasizes that effective online teaching requires more than technological solutions alone; it demands coordinated institutional strategies that address instructional design, assessment practices, faculty well-being, and organizational support structures. Accordingly, the findings underscore the importance of comprehensive institutional support systems, pedagogically grounded professional development programs, revised workload policies, and equitable digital infrastructure to ensure resilient, inclusive, and high-quality online higher education beyond emergency teaching contexts.

***Keywords*— Online learning, Faculty challenges, Systematic review**

I. INTRODUCTION

The rapid advancement of digital technologies has profoundly reshaped higher education, transforming how teaching and learning are designed, delivered, and experienced. Prior to the COVID-19 pandemic, universities had already begun adopting online and blended learning models to enhance flexibility, accessibility, and scalability (Rosenbusch, 2020; Shea & Bidjerano, 2013). The pandemic, however, accelerated this transformation dramatically, forcing higher education institutions worldwide to shift almost instantaneously from face-to-face instruction to fully online or emergency remote teaching. This abrupt transition placed unprecedented demands on academic staff and exposed significant gaps in institutional preparedness (Fynn & van der Walt, 2023; Govender et al., 2021).

Although online learning is often promoted for its potential to transcend temporal and geographical barriers, its effectiveness is largely contingent on faculty

readiness, pedagogical competence, and well-being. Faculty members play a pivotal role in curriculum design, instructional delivery, assessment, and student engagement, making their experiences central to the success of online education (Shehzad & Charles, 2023). Teaching in online environments requires instructors to redesign learning materials, develop digital competencies, adopt alternative assessment strategies, and establish social presence without direct face-to-face interaction (Swan, 2003; Gozaly, 2026). Consequently, online teaching has significantly altered academic roles, professional identities, and everyday work practices.

An expanding body of research highlights that faculty face numerous challenges in online higher education. These include technological and infrastructural limitations, insufficient digital skills and professional training, pedagogical difficulties in sustaining engagement, concerns over assessment integrity, and substantially increased workloads associated with course redesign and continuous online availability (Çetin et al., 2024; Fonseca et al., 2023). Beyond instructional challenges, studies increasingly report psychological and health-related consequences, such as elevated stress, burnout, emotional exhaustion, and blurred work–life boundaries (Fynn & van der Walt, 2023; Leal Filho et al., 2025).

Institutional and systemic factors further shape faculty experiences. Inconsistent orientation and professional development, unclear expectations regarding online teaching and job insecurity particularly for adjunct and early-career faculty and resistance to cultural change have been identified as major barriers to effective digital transformation (Vanleeuwen, 2020). At the same time, growing corporatization, funding constraints, and market-driven governance models have intensified faculty concerns about declining academic autonomy, quality dilution, and the long-term sustainability of online higher education (Veletsianos & Johnson, 2022). The integration of advanced technologies such as learning analytics, artificial intelligence, and the Internet of Things introduces additional challenges related to data privacy, surveillance, and ethical use, further complicating faculty adoption of digital systems (Natek & Lesjak, 2020).

Despite the growing volume of studies, the existing literature remains fragmented, often addressing isolated dimensions such as technology adoption, student engagement, or pandemic-related stress. There is a lack of integrative reviews that systematically synthesize faculty challenges across technological, pedagogical, psychological, institutional, and equity-related domains, particularly with a focus on sustainable online education beyond emergency contexts (Rosenbusch, 2020). Moreover, disparities in digital infrastructure, institutional readiness, and faculty support across regions and disciplines raise critical concerns regarding equity, quality, and long-term viability (Aisulu, 2024).

To address these gaps, this study presents a comprehensive review of the literature on challenges faced by faculty in online higher education, structured around a nine-dimensional analytical framework encompassing technological, digital competence, pedagogical, assessment, workload, psychological and health, communication, institutional, and sustainability and equity challenges (Moldovan et al., 2024). By integrating evidence from diverse empirical contexts and disciplinary perspectives, this review aims to provide a holistic understanding of faculty experiences in online teaching and to identify key research gaps and future directions. The findings are intended to inform policymakers, institutional leaders, and faculty members in developing resilient, equitable, and pedagogically grounded online education systems.

II. RESEARCH METHODOLOGY

The study selection process followed the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) 2020 guidelines as mentioned in the Fig.1. An initial search of the Scopus database using predefined keywords and Boolean operators identified 2,832 records. After applying the publication year filter to capture studies published between 2019 and 2026, a total of 924 records remained. The publication period from 2019 to 2026 was deliberately selected to capture literature emerging before, during, and after the COVID-19 pandemic, as the pandemic marked a critical turning point in the widespread adoption of online and emergency remote teaching in higher education. This time frame enabled the inclusion of studies reflecting both the immediate crisis-driven transition and the evolving post-pandemic perspectives on online education. These records were subsequently screened based on subject area, resulting in 56 articles classified under the Business (BUSI) and Economics (ECON) disciplines.

Further eligibility criteria were applied to refine the dataset, including document type (journal articles only), publication stage (final), source type (journal), and language (English), which reduced the number of records to 45 studies. The titles and abstracts of these

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articles were then independently reviewed to assess relevance to the research focus on challenges faced by faculty in online higher education. Following this screening process, 31 articles were excluded due to lack of thematic alignment or insufficient focus on faculty-related challenges.

Ultimately, 14 studies met all inclusion criteria and were deemed suitable for full-text review and qualitative synthesis. These studies formed the final corpus for in-depth analysis. The PRISMA flow diagram illustrates each stage of the identification, screening, eligibility, and inclusion process, providing a transparent overview of the systematic literature selection procedure.

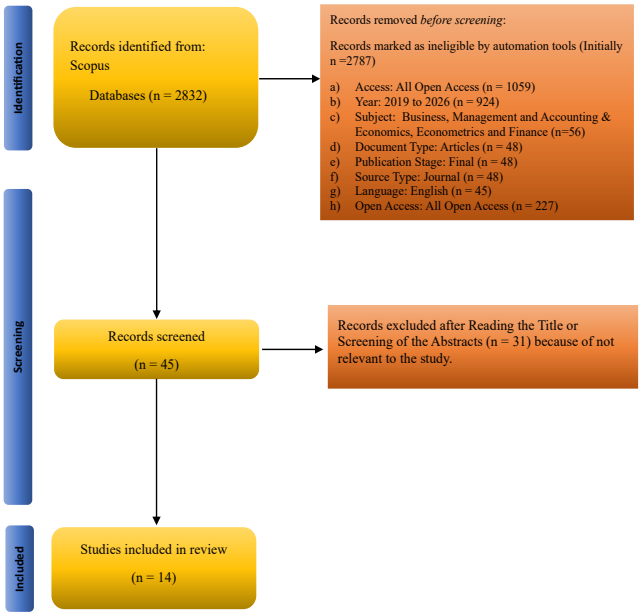

Fig. 1: Analytic Framework of the Study using PRISMA

III. DISCUSSION

The transition to online and digitally mediated higher education has generated a wide range of challenges for faculty members, extending beyond technical concerns to encompass pedagogical, psychological, institutional, and equity-related dimensions. Existing studies indicate that **technological challenges** remain a foundational barrier, particularly in contexts with inadequate infrastructure, unreliable internet connectivity, electricity disruptions, and limited access to appropriate hardware and learning platforms (Aisulu, 2024; Leal Filho et al., 2021). The adoption of advanced digital systems, including learning analytics and Internet of Things (IoT) technologies, further introduces concerns related to cybersecurity, data privacy, ethical monitoring, and increased system complexity, which can constrain instructional autonomy and heighten faculty apprehension (Natek & Lesjak, 2020).

Closely related are **digital competence challenges**, as many instructors lack advanced digital skills and sufficient pedagogical training for online environments. Limited in-service training, uneven professional development opportunities, and resistance to change from traditional academic cultures restrict faculty readiness and confidence in digital teaching (Aisulu, 2024; Vanleeuwen, 2020). Evidence suggests that younger instructors tend to perceive online teaching as more adaptable, while senior faculty often struggle with rapid technological change, reinforcing disparities in instructional capacity (Çetin et al., 2024).

Pedagogical challenges are consistently identified as one of the most significant obstacles in online higher education. Faculty report difficulties in rapidly designing relevant learning materials, sustaining student engagement, and compensating for the absence of face-to-face interaction and social presence (Gozaly et al., 2026; Shehzad & Charles, 2023). Courses requiring laboratories, practicums, or experiential learning such as tourism, science, and applied disciplines are particularly difficult to adapt to online formats, as students lose opportunities for hands-on experimentation and real-world practice (Çetin et al., 2024; Leal Filho et al., 2021). The absence of well-established pedagogical models for distance education further undermines instructional quality and consistency.

Assessment challenges emerge as one of the most critical and least resolved dimensions of online education. Instructors frequently report difficulties in monitoring student performance, ensuring academic integrity, preventing cheating, and fairly evaluating learning outcomes in remote settings (Çetin et al., 2024; Fonseca et al., 2023). Limited control during online examinations and confusion in assessing practical competencies reduce confidence in digital assessment systems, making evaluation a central concern in the literature (Means et al., 2014).

The shift to online teaching has also intensified **workload challenges**, as faculty are required to redesign curricula, prepare digital materials, manage multiple platforms, provide continuous student support, and remain constantly available online (Fynn & van der Walt, 2023; Shehzad & Charles, 2023). Administrative demands, frequent communication with students and parents, and expectations of immediate responsiveness further increase time pressure, often without

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proportional institutional recognition or incentives (Nguyen et al., 2022).

These conditions contribute directly to **psychological and health challenges**, including heightened stress, emotional exhaustion, burnout, and cognitive fatigue. Studies consistently highlight blurred work–life boundaries, inability to disconnect, work-from-home pressures, and role conflict as major negative outcomes of prolonged online teaching (Anamica, 2023) (Anamica, 2023; Fynn & van der Walt, 2023; Leal Filho et al., 2021). Although reduced commuting time is occasionally identified as a positive effect, it does not offset the broader negative impacts on faculty well-being and job satisfaction.

Communication challenges further complicate online instruction, as reduced interaction, lack of non-verbal cues, and limited real-time feedback weaken instructor and student relationships. Faculty report difficulties in motivating students, maintaining engagement, and establishing social presence, leading to feelings of isolation and disconnectedness among learners (BULUK & EŞİTTİ, 2020; Şanlıöz-Özgen & Küçükaltan, 2023; Swan, 2003).

At the organizational level, **institutional challenges** play a decisive role in shaping faculty experiences. Inconsistent orientation, unclear expectations regarding online teaching, lack of mandatory training and job insecurity particularly for adjunct and sessional staff- and resistance to cultural change hinder effective digital transformation (Vanleeuwen, 2020; Veletsianos & Johnson, 2022). Increasing corporatization, funding constraints, and market-driven decision-making further reduce academic autonomy and heighten faculty anxiety about the future of higher education (Maan & Malhotra, 2024; Veletsianos & Johnson, 2022).

Finally, the literature highlights substantial **sustainability and equity challenges**. Unequal access to digital infrastructure across institutions, disciplines, and regions, combined with disparities in faculty digital readiness, threaten the long-term effectiveness and inclusiveness of online education (Aisulu, 2024). Concerns about declining instructional quality, limited suitability for practice-oriented disciplines, and resistance from traditional academic cultures raise critical questions about the sustainability and equitable implementation of online higher education models (Rosenbusch, 2020).

IV. CONCLUSION

This review study set out to systematically examine the challenges faced by faculty in online higher education by synthesizing evidence from diverse disciplinary, geographical, and institutional contexts. The findings clearly demonstrate that faculty challenges in online learning are multidimensional, interconnected, and structural, extending far beyond the mere adoption of digital technologies. Using a nine-dimensional review framework, the study highlights how technological limitations, insufficient digital competencies, pedagogical constraints, assessment difficulties, escalating workloads, psychological strain, weakened communication, institutional barriers, and sustainability and equity concerns collectively shape instructors' online teaching experiences.

The analysis reveals that while technological and infrastructural issues continue to pose challenges, particularly in resource-constrained settings, the most persistent difficulties are pedagogical, workload-related, and psychosocial in nature. Faculty members struggle to redesign courses rapidly, sustain student engagement, and deliver practice-oriented learning in virtual environments, especially in disciplines that rely heavily on laboratories, practicums, or field-based experiences. Assessment integrity and the evaluation of practical competencies remain among the least resolved aspects of online education, undermining confidence in digital teaching systems. Simultaneously, increased workload, constant online availability, and blurred work–life boundaries have led to heightened stress, burnout, and emotional exhaustion among instructors.

Importantly, the findings underscore the critical role of institutional and governance-related factors. Inconsistent faculty development opportunities, unclear expectations and job insecurity particularly for adjunct and early-career faculty and resistance to cultural change significantly hinder effective digital transformation. The growing corporatization of higher education and market-driven decision-making further exacerbate faculty anxiety and diminish academic autonomy, raising concerns about the long-term quality and integrity of online higher education.

From a sustainability and equity perspective, the review highlights widening disparities in digital access, infrastructure readiness, and faculty preparedness across institutions and regions. These inequalities threaten the inclusiveness and long-term viability of online education, particularly for practice-based disciplines and marginalized academic communities. At

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the same time, the literature suggests that younger and digitally confident faculty may perceive online teaching more positively, indicating generational and experiential differences that warrant targeted support strategies.

Overall, the reviewed studies demonstrate that challenges faced by faculty in online higher education are systemic and interconnected, requiring more than technological solutions alone. The findings suggest that effective and sustainable online education requires more than technological investment; it demands robust professional development, pedagogically grounded course design, supportive institutional policies, participatory governance, and sustained attention to faculty well-being and equity. By addressing these interrelated dimensions holistically, higher education institutions can move beyond emergency responses toward resilient, high-quality, and inclusive digital education systems.

V. PRACTICAL IMPLICATIONS

5.1 For policymakers: the findings highlight the need for long-term digital education policies that ensure equitable infrastructure, reliable connectivity, and clear regulations on data privacy, cybersecurity, and ethical use of digital technologies, while aligning quality assurance and accreditation frameworks with online teaching realities.

5.2 For higher education institutions: the results emphasize the importance of structured and continuous faculty development, revised workload and evaluation models that recognize online teaching demands, strong technical and pedagogical support systems, and participatory governance to foster sustainable digital transformation.

5.3 For faculty members: the study suggests prioritizing ongoing professional learning in online pedagogy and assessment, adopting strategies to enhance student engagement and social presence, and actively managing workload and work-life balance through collaboration and institutional support.

Table 1: Thematic Summary of Challenges Faced by Faculty in Online Higher Education

Theme	Key Challenges Identified	Representative Evidence from Literature
Technological challenges	Inadequate infrastructure, unstable internet, electricity disruptions, lack of hardware and platforms; cybersecurity, privacy, and ethical risks associated with advanced digital systems (e.g., IoT).	(Aisulu, 2024; Leal Filho et al., 2021; Natek & Lesjak, 2020)
Digital competence challenges	Limited advanced digital skills, insufficient in-service training, uneven professional development, generational gaps in technology adoption, resistance to change.	(Aisulu, 2024; Çetin et al., 2024; Nguyen et al., 2022; Vanleeuwen, 2020)
Pedagogical challenges	Rapid redesign of courses and materials; lack of social presence; difficulty engaging students; absence of established distance-learning pedagogies; poor fit for practice-oriented disciplines (labs, practicums).	(Çetin et al., 2024; Gozaly et al., 2026; Leal Filho et al., 2021; Shehzad & Charles, 2023)
Assessment challenges	Ensuring academic integrity; limited control during online exams; difficulties evaluating practical competencies; unreliable assessment outcomes.	(Çetin et al., 2024; Fonseca et al., 2023; Means et al., 2014)
Workload challenges	Increased preparation time, constant online availability, administrative overload, multiple platform management, frequent student/parent communication.	(Fynn & van der Walt, 2023; Nguyen et al., 2022; Shehzad & Charles, 2023)

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Psychological & health challenges	Elevated stress, burnout, emotional exhaustion, blurred work-life boundaries, inability to disconnect, cognitive fatigue.	(Fynn & van der Walt, 2023; Leal Filho et al., 2021; Veletsianos & Johnson, 2022)
Communication challenges	Reduced interaction and feedback, lack of non-verbal cues, weak social presence, student disengagement, feelings of isolation and disconnectedness.	(BULUK & EŞİTTİ, 2020; Şanlıöz-Özgen & Küçükaltan, 2023; Shehzad & Charles, 2023; Swan, 2003)
Institutional challenges	Inconsistent orientation and training, unclear expectations, job insecurity (especially adjuncts), resistance to cultural change, corporatization and market-driven governance.	(Rosenbusch, 2020; Vanleeuwen, 2020; Veletsianos & Johnson, 2022)
Sustainability & equity challenges	Unequal access to infrastructure and resources across institutions and regions; declining quality concerns; limited suitability for practice-based disciplines; resistance from traditional academic cultures.	(Aisulu, 2024; Çetin et al., 2024; Rosenbusch, 2020)

Source: Authors' Compilation

Table 2: Research Gaps and Future Directions in Online Higher Education Faculty Research

Dimension	Key Research Gaps Identified	Suggested Future Research Directions
Technological readiness & infrastructure	Limited longitudinal and comparative evidence on how infrastructure quality affects faculty performance across regions and institution types; underexplored ethical implications of surveillance technologies.	Conduct cross-country and cross-institutional longitudinal studies; examine ethical, privacy, and trust implications of AI- and IoT-enabled learning environments from faculty perspectives.
Faculty digital competence development	Insufficient evidence on the long-term effectiveness of professional development models; limited differentiation by discipline, age, and career stage.	Investigate discipline-specific and career-stage-sensitive digital training models; evaluate sustained impacts of continuous professional development rather than short-term interventions.
Online pedagogy and instructional design	Lack of validated pedagogical frameworks for practice-oriented and laboratory-based disciplines; limited empirical testing of social presence models.	Develop and test scalable pedagogical frameworks for online practicums, simulations, and experiential learning; empirically validate social presence–driven instructional models.
Assessment and academic integrity	Overreliance on traditional exams; limited empirical validation of alternative online assessment strategies; low faculty trust in digital assessment systems.	Explore authentic, competency-based, and formative assessment approaches; examine AI-assisted assessment tools and faculty acceptance of integrity-preserving mechanisms.
Faculty workload and role transformation	Absence of standardized workload measurement models for online teaching; limited research on compensation and recognition mechanisms.	Quantify online teaching workload using time-use and activity-based models; evaluate institutional policies for workload redistribution, incentives, and promotion criteria.

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Psychological well-being and burnout	Predominance of cross-sectional studies; limited understanding of long-term mental health effects and recovery trajectories.	Conduct longitudinal mental health studies; identify protective factors, resilience strategies, and effective institutional well-being interventions, with attention to gender and caregiving roles.
Communication and engagement dynamics	Limited experimental research on communication-enhancing digital tools; insufficient exploration of synchronous–asynchronous balance.	Test digital communication designs that strengthen interaction, feedback, and engagement; examine optimal blends of synchronous and asynchronous instruction across disciplines.
Institutional governance and policy	Faculty perspectives underrepresented in policy studies; limited analysis of governance models shaping digital transformation.	Examine participatory governance models; analyze how leadership, policy clarity, and institutional culture influence faculty adoption and sustainability of online education.
Equity, inclusion, and sustainability	Insufficient integration of equity lenses; limited research on long-term sustainability beyond emergency remote teaching.	Investigate equity-driven digital transformation strategies; compare sustainable hybrid and online models across socioeconomic, institutional, and disciplinary contexts.

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