

E-HRM Practices in Open Universities: A Digital Framework for Skill-Based Education

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ABSTRACT

Electronic Human Resource Management (E-HRM) plays a crucial role in enhancing operational efficiency, decision-making and coordination within higher education institutions. Open universities, especially those offering skill-based programs, face challenges due to decentralized operations, geographically dispersed staff and varied administrative processes. This study presents a conceptual digital E-HRM framework for such institutions using secondary data, integrating student assessment (theory, practical, viva), course content delivery and evaluation processes. The framework draws on E-HRM typologies, technology acceptance concepts and insights from higher education practices and Indian skill development policies. Findings indicate that combining operational, relational and transformational E-HRM approaches with a structured skill-based course roadmap improves administrative efficiency, faculty management and program delivery quality. The framework also addresses digital readiness, process fragmentation and user adoption challenges, offering a strategic guide for implementing digital HR systems in open universities. The study provides a systematic approach to enhancing HR effectiveness in skill-based education and informs future empirical research.

Keywords: E-HRM, open universities, digital HR, skill-based education, technology acceptance, Indian higher education

INTRODUCTION

Open universities play a vital role in delivering accessible education, including skill-based and vocational programs, to a diverse learner population. Unlike conventional universities, Open Universities operate multiple centers, engage numerous academic counsellors and trainers and require extensive administrative coordination. Managing human resources in such decentralized environments poses significant challenges, including inconsistent processes, limited oversight and difficulty in tracking trainer performance and learner outcomes.

Electronic Human Resource Management (E-HRM) offers a promising solution by integrating information technologies with HR processes to improve administrative efficiency, communication and strategic HR capabilities. Furthermore, technology adoption principles emphasize that user perception specifically perceived usefulness and ease of use directly impacts the adoption of E-HRM systems.

This study aims to develop a digital E-HRM framework tailored to open universities offering skill-based programs, based on secondary research from global and Indian higher education contexts. It explores the benefits, challenges and strategic implications of E-HRM adoption, providing a foundation for future empirical studies.

Related Work

Reference	E-HRM Dimension	Theory / Concept	Application / Relevance to Study
Bondarouk & Ruël (2009)	Operational	E-HRM Typology	Provides a classification of E-HRM practices into operational, relational, and transformational, guiding the framework for adoption in universities.
Davis (1989) – TAM	Operational	Technology Acceptance Model	Explains employees’ acceptance of E-HRM systems based on perceived usefulness and ease of use, useful for evaluating adoption readiness.
Strohmeier (2007)	Relational	HRM Process Integration	Highlights how E-HRM facilitates communication and collaboration between HR and employees, improving relational HR practices.
Marler & Parry (2016)	Transformational	Strategic HR Alignment	Shows how E-HRM contributes to strategic HRM by enabling HR to influence organizational transformation and performance.
Kavanagh et al. (2015)	Operational & Relational	E-HRM Implementation Model	Offers practical insights into operational efficiency and relational benefits of E-HRM adoption in higher education contexts.
Parry & Tyson (2011)	Transformational	Digital HRM Innovation	Explains how E-HRM can transform HR from administrative focus to strategic business partner, applicable to universities undergoing digital transformation.
Al-Hakim & Hassan (2013)	Operational	IT-enabled HR Processes	Examines automation of HR processes like recruitment, payroll, and training, aligning with operational dimension of E-HRM.

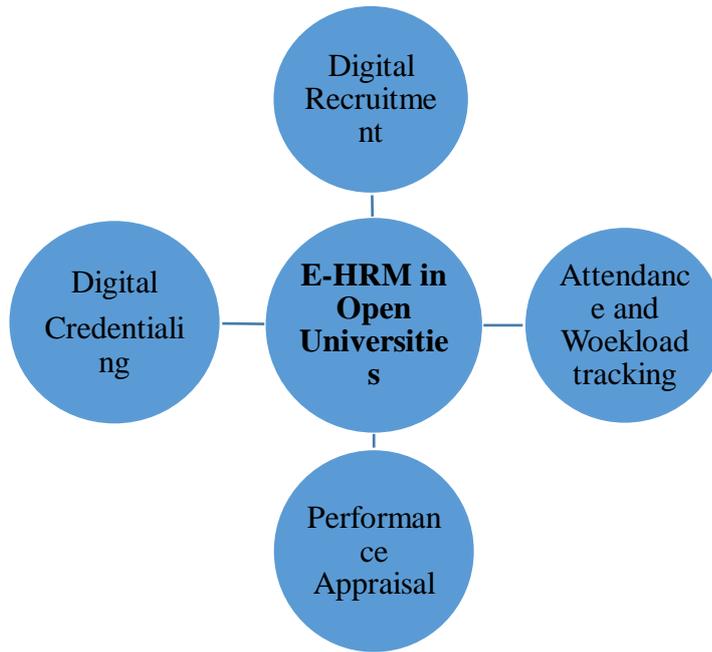
Research Methodology and Data Collection

This study adopts a descriptive and exploratory research design based on secondary data. It examines E-HRM adoption in open universities and its role in managing skill-based courses through analysis of existing literature, university reports, and documents.

Data were collected through review of course design and delivery practices in open universities and discussions with senior faculty and administrators. Insights were drawn from literature, official reports and expert opinions to analyze E-HRM practices and skill-based course management.

Conceptual Framework

Figure 1. Conceptual Framework of Digital E-HRM for Open Universities



Components:

1. **Operational E-HRM:** Automates administrative tasks such as attendance, payroll, leave management and assignment of academic counsellors.
2. **Relational E-HRM:** Facilitates communication and coordination through digital portals, dashboards and reporting systems.
3. **Transformational/Strategic E-HRM:** Provides analytics for workforce planning, competency mapping, skill-gap analysis and digital credentialing.
4. **User Acceptance Mechanisms:** Ensures system usability and adoption.
5. **Policy and Compliance Alignment:** Integrates national competency-based education and skill development guidelines.

Figure 2. Process Flow of Skill-Course Lifecycle under E-HRM

Stage	Description / Activities
1. Course Design & Approval	Designing curriculum, defining learning outcomes, theory and practical content, skill assessments. Approval by academic board/committee.
2. Course Announcement & Enrollment	Notification to prospective students via online portal, study centres, and social media. Student registration and enrollment.
3. Eligibility Verification & Profile Setup	E-HRM system verifies eligibility (prior qualifications, work experience if required), sets up student profiles.

4. Orientation / Induction	Introducing course objectives, methodology, LMS, assessment structure, and resources.
5. Training / Learning Delivery	Conducting sessions (offline/online/blended), practical demonstrations, skill labs, interactive workshops, digital learning modules.
6. Continuous Assessment & Monitoring	Formative assessments, quizzes, assignments, practical tasks. E-HRM tracks attendance, progress, and competency development.
7. Student Assessment (Theory, Practical, Viva)	- Theory: Students submit PDFs, written content, or objective questions online. - Practical: Students upload video evidence of performing the practical skills. - Viva/Oral: Evaluators conduct viva via LMS or video call.
8. Evaluation & Verification	Evaluators review uploaded theory documents, practical videos, and viva responses. Marks and competency are recorded in E-HRM.
9. Employer-Accessible Skill Records	Verified assessment records (theory, practical, viva) are available for employers for recruitment or background checks.
10. Result Compilation & Declaration	Consolidating scores, calculating grades/competency levels, declaring results through E-HRM/LMS, issuing digital certificates.
11. Certification & Skill Profile Update	Generating skill-based certificates, updating learner skill profile in E-HRM for future employability and reporting.
12. Post-Course Feedback & Reporting	Gathering learner feedback for course improvement, reporting to administration, data stored in E-HRM for analytics.

Table 1. Traditional HR vs Digital E-HRM Comparison

Feature	Traditional HR	Digital E-HRM
Record Keeping	Manual, decentralized	Centralized, digital
Monitoring	Limited visibility	Real-time dashboards
Communication	Slow, hierarchical	Instant, collaborative
Strategic Focus	Minimal	Enhanced analytics & decision support

Traditional HR relies on manual record keeping, limited monitoring, slow hierarchical communication, and focuses mainly on administrative tasks. In contrast, Digital E-HRM centralizes data, provides real-time dashboards, enables instant collaborative communication, and supports strategic decision-making through analytics, transforming HR into a more efficient and value-adding function.

Table 2. Key Components and Functions of Proposed Framework

Component	Function	Expected Benefit
Recruitment	Digital onboarding	Faster hiring & tracking
LMS Integration	Assignments & scheduling	Efficient course delivery

Attendance Tracking	Auto logs for staff	Reduced manual errors
Performance Appraisal	Digital evaluation	Transparent & data-driven
Credentialing	Digital certificates	Verified skills & compliance

The proposed framework integrates key HR and learning functions digitally. Recruitment and onboarding enable faster hiring and tracking, while LMS integration and attendance tracking streamline course delivery and reduce manual errors. Performance appraisal is digital and data-driven, ensuring transparency, and credentialing provides verified digital certificates, enhancing skill validation and compliance.

Table 3. Challenges and Mitigation

Challenge	Mitigation
Digital literacy	Training programs, user manuals
Infrastructure gaps	Phased implementation, IT support
Resistance to change	Awareness campaigns, leadership support
Fragmented processes	Standardized workflows, centralized monitoring

The framework faces challenges such as low digital literacy, infrastructure gaps, resistance to change, and fragmented processes. These are mitigated through targeted training and user manuals, phased implementation with IT support, awareness campaigns backed by leadership, and standardized workflows with centralized monitoring to ensure smooth adoption and efficiency.

DISCUSSION

Secondary literature indicates that adopting Electronic Human Resource Management (E-HRM) in higher education institutions can significantly enhance administrative efficiency, improve data accuracy and streamline HR service delivery [1, 2, 3, 5, 6]. In the context of open universities offering skill-based programs, a digitally implemented E-HRM framework supports effective scheduling and tracking of course delivery, facilitates systematic monitoring of theory, practical and viva assessments and enables timely feedback and evaluation [6, 11, 12]. This integration allows HR functions to shift from routine administrative tasks toward strategic roles, including planning competency-based curricula, aligning programs with national skill development policies, and ensuring quality control in course offerings [4, 7, 8]. Nevertheless, challenges such as limited digital infrastructure, fragmented processes, low digital literacy among staff and resistance to change remain prevalent, particularly in decentralized and geographically dispersed institutions [2, 9, 10, 13]. By combining E-HRM practices with a structured skill-based course roadmap, these challenges can be mitigated, providing a strategic pathway for open universities to enhance operational efficiency, program quality and HR effectiveness [6, 11, 14, 15].

CONCLUSION

The study demonstrates that a structured digital E-HRM framework can significantly enhance the management of skill-based programs in open universities. By integrating operational, relational and transformational practices, the framework supports efficient administration of course delivery, theory and practical assessments, and viva evaluations, while ensuring faculty and trainer management is streamlined across decentralized and geographically dispersed settings. The alignment of E-HRM with the skill-based course roadmap provides a strategic approach for improving the quality and consistency of program delivery, addressing challenges such as digital readiness, process fragmentation, and user adoption. Moreover, the framework offers a roadmap for future implementation of digital HR systems, enhancing transparency and accountability in skill-based education.

Overall, the study provides a systematic approach to strengthening HR effectiveness in open universities and offers directions for further empirical research to validate and expand these findings.

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