ASEAN Journal of Open and Distance Learning (AJODL)
https://ajodl.oum.edu.my/
Vol. 18, No. 1, 2026, pp. 01 – 11

Challenges Encountered by Faculty Members in Implementing E-Learning in a Saudi University

Mutasim S. Alotaibi

Educational Foundations Department, College of Education, Imam Abdulrahman Bin Faisal University, Dammam City, Saudi Arabia.

Corresponding author: msralotaibi@iau.edu.sa

Paper Info:
Received: 11 Sep 2025 | Revised: 8 Mar 2026
| Accepted: 24 Mar 2026 | Available Online: 31 Mar 2026

DOI: https://doi.org/10.64233/KXUR9274

Citation:
Alotaibi, M. S. (2026). Challenges encountered by faculty members in implementing e-learning in a Saudi University. *ASEAN Journal of Open and Distance Learning, 18*(1), 01-11. https://doi.org/10.64233/KXUR9274

Abstract

The COVID-19 pandemic led to an emergency introduction of e-learning amidst the social distancing health directives. Even after the pandemic subsided, the need for e-learning continued to increase while simultaneously raising concerns about its implementation. This posed significant challenges for both faculty members and students in adapting to the shift from physical classes to online classes. The purpose of this study was to evaluate the preparedness of faculty members for e-learning in terms of adapting and obtaining the necessary skills. The study also aimed to establish the role of universities in providing proper facilities for e-learning. A mixed-method design was utilised, collecting data via a questionnaire and one-to-one interviews. The questionnaire was completed by 147 faculty members of the Imam Abdulrahman-Bin-Faisal University, Saudi Arabia, of whom 6 participated in the interview. Descriptive statistics were used to evaluate participants' responses using the Statistical Package for the Social Sciences (SPSS) software. Meanwhile, thematic analysis was performed on the qualitative data. The findings of the study revealed that the faculty members faced both organisational challenges and self-challenges in implementing e-learning. Notably, the statistical analysis showed that academic rank, gender, type of discipline, job status, and years of experience did not significantly affect the results. To overcome these challenges, proper training in technical, communication, and time management skills is recommended to reduce the barriers between lecturers and students.

Keywords: digital skills, distance learning, E-learning, faculty challenges, learning challenges, university instructors

1. Introduction

Before the COVID-19 pandemic, traditional face-to-face learning dominated higher education, but the rapid spread of COVID-19 across the globe in March 2020 led to university closures in response to public health officials' recommendations for social distancing. This abrupt transition led to the mandate of a complete shift to e-learning in leading higher education institutions in Saudi Arabia (Almaiah et al., 2020), raising further concerns among stakeholders about the implementation of new policies and the quality of teaching (Al-Qashouti, 2024). While e-learning enables the delivery of education to geographically remote areas (Almahasheer et al., 2021), this transition required faculty members to enhance their competencies for effective technology-based instruction (Alharbi & Lally, 2017). Successful e-learning execution necessitates adequate infrastructure, resources, and professional development; however, many institutions demonstrated limited preparedness during the COVID-19 transition (Alsaywid et al., 2021; Alashwal, 2020).

Moreover, despite the increasing number of studies on e-learning implementation, limited attention has been given to the challenges faced specifically by faculty members in Saudi universities. Most existing research has focused on student satisfaction or engagement, leaving faculty problems, including workload, digital pedagogy, and instructional design, understudied (Shariq et al., 2022). This study addresses this gap by examining faculty members' perspectives on e-learning implementation within the Saudi higher education context, thereby contributing empirical evidence that can inform institutional policy, faculty development programmes, and strategic planning for sustainable e-learning practices. Specifically, it aims to: (i) identify organisational, technological, and personal challenges encountered by faculty members in the use of e-learning; (ii) examine differences in faculty perceptions of these challenges based on demographic and professional variables, including gender, academic rank, employment status, discipline, and years of experience; and (iii) propose recommendations to address and reduce the identified challenges.

2. Literature Review

Since the COVID-19 pandemic accelerated the implementation of online teaching in higher education worldwide, a major challenge has been the shift to this system while minimising the loss of learning (Alashwal, 2020). According to Almuqayteeb (2024), 25.6% of students in the Saudi Arabian context stated dissatisfaction with the course design, and 29.2% described poor internet connectivity, despite 72.3% reporting easy access to online learning resources. Moreover, many faculty members lack adequate skills in using artificial intelligence technologies for e-learning, which could improve instruction approaches and assessment efficiency (Nagro, 2021). Fageeh (2024) recorded similar faculty perspectives in France and Saudi Arabia, noting insufficient training opportunities and elevated workload stress. These findings were also supported by Shariq et al. (2022), who revealed that although faculty and students had favourable thoughts about e-learning, they were disadvantaged by inadequate infrastructure and irregular institutional strategies.

Previous studies have highlighted various challenges related to e-learning implementation, including a lack of technical support, inadequate training, and resistance to change. While some researchers emphasise technological barriers (Porter et al., 2016), others focus on pedagogical and institutional issues (Martin et al., 2019). However, instead of examining student readiness, more emerging research suggests that faculty preparedness plays a crucial role in the success of e-learning initiatives. For instance, Aldhahi et al. (2021) reported that lecturers' self-confidence and presentation as instructors are significantly improved by institutional training and planned digital strategies. However, there is a need for context-specific studies addressing faculty challenges within Saudi higher education, which this study seeks to address. By examining the real-world experiences of faculty members utilising e-

learning at Saudi universities, this study aims to bridge these gaps and provide administrators and policymakers with guidance for expanding digital teaching practices in Saudi universities.

3. Methodology

3.1. Study Area

This study was conducted at Imam Abdulrahman-Bin-Faisal University, Saudi Arabia. A total of 147 faculty members participated in the study, including 57 males (38.8%) and 90 females (61.2%). Participants were drawn from a population of 3,208 faculty members at the university and were selected using voluntary response sampling. For the qualitative component, a subset of six faculty members was purposively selected from the survey respondents to participate in follow-up interviews based on their willingness to share detailed experiences related to e-learning implementation.

3.2. Research Design

This study utilised a mixed-method approach to combine qualitative and quantitative data. Both datasets were analysed separately and subsequently compared with each other to finalise the findings. This approach analysed the difficulties and challenges faced by the faculty members due to the e-learning implementation policy and the impact of these challenges on the faculty members.

3.3. Data Collection and Questionnaire

Quantitative data were collected using a structured questionnaire administered online through the Qualtrics software. The questionnaire consisted of closed-ended items measured on a five-point Likert scale, including sections on demographic information, personal and self-related challenges, and organisational and technological challenges associated with e-learning.

The questionnaire was developed based on a review of relevant literature on e-learning challenges in higher education. Content validity was established through expert review, and a pilot test was conducted to refine the instrument. The internal consistency of the questionnaire was assessed using Cronbach's alpha, which indicated acceptable reliability for the overall scale and its sub-dimensions.

Qualitative data were collected through individual interviews, allowing respondents to share their narratives, opinions, and experiences. They were also asked about observed challenges, as well as how they would like to see things changed to make adoption go more smoothly. The responses during the interview sessions were recorded verbatim to ensure reliability and accuracy in analysis.

3.4. Data Analysis

Quantitative data were analysed using descriptive and inferential statistical techniques. For descriptive analysis, responses from the five-point Likert scale were grouped into three categories (disagree, neutral, and agree).

Descriptive statistics, including frequencies and percentages, were used to summarise responses and highlight the prevalence of each challenge. One-way ANOVA was employed to examine differences in perceived e-learning challenges based on demographic and professional variables such as gender, academic rank, employment status, discipline, and years of experience.

Thematic analysis was performed on the qualitative data to identify the respondents' challenges and recommendations; similar ideas were coded and grouped together under basic themes. A response summary was made for each respondent for discussion clarity. The qualitative findings were then integrated with quantitative results to provide a comprehensive interpretation of the study outcomes.

4. Results and Discussion

4.1. Organisational and Technological Challenges in E-Learning

The first research objective was to identify the organisational and technological challenges that faculty members face in e-learning; hence, eight sub-items (Q1-Q8) were designed to examine these dimensions systematically, as shown in Table 1.

Table 1

Summary of Responses to Subscale Items Measured on a Five-Point Likert Scale and Grouped into Disagree, Neutral, and Agree Categories.

Questions	Disagree (%)	Neutral (%)	Agree (%)
Q1: There is weak cooperation among universities in exchanging experiences.	36.1	29.3	34.7
Q2: The financial resources to fund e-learning are insufficient.	55.8	19.0	25.2
Q3: There are no incentives for faculty who use e-learning.	16.3	15.6	68.1
Q4: There is a lack of continuing professional development courses to improve faculty members' e-learning skills.	57.1	18.4	24.4
Q5: The university's technical and logistical capabilities are poor (readiness/number of labs/poor maintenance/poor Internet).	48.3	17.0	34.7
Q6: Coordinating and communicating with the technicians responsible for e-learning is difficult.	52.4	14.3	33.4
Q7: Leaders are not convinced of the importance of using e-learning tools in teaching.	74.8	15.6	9.5
Q8: The organisation and timing of the timetable do not allow the use of e-learning in classrooms.	55.1	21.8	23.2

Findings from Q1 indicate divided perceptions regarding inter-university collaboration in advancing e-learning initiatives. While 36.1% of participants disagreed that weak collaboration is an obstacle, 29.3% remained neutral, and 34.7% agreed. This data suggests that the participants' involvement with different universities may vary on the personal level, highlighting insufficient collaboration between other institutions. Meanwhile, responses to Q2 disclose that only about half of the participants (55.8%) perceived the e-learning funding as sufficient. Insufficient financial resources were observed by 25.2% of participants, while the remaining 19% took the neutral stance, suggesting financial limitations as a possible challenge for e-learning. In contrast, Q3 demonstrates strong consensus concerning the lack of incentives for faculty engagement in e-learning, with a significant majority of 68.1%. Only 16.3% disagreed, while 15.6% remained neutral, reflecting the lack of remuneration to acknowledge and motivate e-learning efforts.

ASEAN Journal of Open and Distance Learning
Vol. 18, No. 1, 2026, pp. 01 – 11

Similar to Q2, Q4 shows that slightly over half (57.1%) disagreed on a lack of continuing professional development (CPD) courses, with 24.4% agreeing and 18.4% neutral. This data highlights institutional efforts to improve e-learning proficiencies while indicating that adequate training remained uneven. Infrastructure-related findings (Q5) presented a more concerning pattern. Only 48.3% agreed that the university's technical and logistical resources—such as lab readiness, maintenance, and Internet quality—are adequate. Meanwhile, 34.7% expressed dissatisfaction and 17% remained neutral, reflecting mixed perceptions of infrastructure readiness for e-learning. With respect to coordination with technical staff (Q6), 52.4% disagreed that coordinating and cooperating with technicians assigned for e-learning poses a barrier, suggesting generally functional support mechanisms. However, 33.4% reported difficulties, and 14.3% remained neutral, indicating varied participants' experiences.

Conversely, responses to Q7 indicate comparatively strong leadership support. A substantial majority of 74.8% disagreed that leaders are unconvinced of the importance of e-learning tools in teaching, signifying broad administrative endorsements. Only 9.5% expressed concerns, with 15.6% being neutral, suggesting that leadership commitment alone may not guarantee effective e-learning integration. Finally, responses to Q8 reveal moderate issues with scheduling structures. Although a majority of 55.1% disagreed that the organisation and timing of the timetable constrained effective e-learning usage in classrooms, 23.2% agreed with this statement, while 21.8% provided neutral responses. This indicates structural challenges in e-learning implementation, with time management constraints affecting a notable segment of participants.

Overall, the findings indicate that faculty members perceive a generally supportive stance from institutional leadership toward e-learning initiatives. However, this endorsement does not appear to be accompanied by tangible incentives, as most participants reported receiving no additional rewards for engaging in e-learning practices. The proportion of participants (48.3%–57.1%) who disagreed with several identified challenges suggests that institutional mechanisms to facilitate e-learning are in place. Nevertheless, the absence of stronger consensus points to uneven implementation and varying experiences across faculties, indicating the need for more systematically distributed support. Additionally, the mixed responses regarding inter-institutional collaboration may reflect limited awareness of its strategic importance, highlighting communication gaps that could affect long-term e-learning adoption and integration.

4.2. Self-Challenges among Faculty Members during E-Learning

The first research objective also examined the self-related challenges faculty members encounter when using e-learning platforms. Participants rated six items (Q9-Q14) on a five-point Likert scale, with responses summarised in percentages, as shown in Table 2. This approach enabled a systematic assessment of individual-level perceptions regarding technological use, pedagogical adaptation, workload, and attitudinal factors.

Table 2

Percentage Responses for Self-Challenge Subscale Items Based on a Five-Point Likert Scale, Grouped into Disagree, Neutral, and Agree Categories.

Questions	Disagree (%)	Neutral (%)	Agree (%)
Q9: The use of e-learning technologies is complex.	69.4	9.5	21.4
Q10: The transition from a traditional to an electronic teaching style is a challenge.	38.8	6.1	55.1
Q11: The use of e-learning technologies might be challenging when tracking a large number of students.	39.5	7.5	53.1
Q12: The university community has a negative attitude toward e-learning.	53.1	17.0	29.9
Q13: When using e-learning tools, there will be insufficient time to display all lesson content.	63.3	17.7	19.1
Q14: E-learning causes an additional burden on the faculty member.	49.0	15.0	36.1

Results from Q9 indicate that technological complexity is not widely perceived as a major obstacle. A substantial majority (69.4%) disagreed that e-learning technologies are difficult to use, suggesting a generally adequate level of digital competence among faculty members. Only 21.4% agreed, while 9.5% remained neutral. However, while the technical interface itself may not be problematic, deeper pedagogical adjustments appear more challenging. For Q10, 55.1% agreed that shifting from traditional face-to-face teaching to electronic instruction constitutes a significant challenge, while 38.8% disagreed and 6.1% were neutral. This contrast implies that adaptation to new instructional models, rather than system usability, represents the primary area of difficulty.

Similarly, Q11 highlights concerns related to student management in digital environments. A majority (53.1%) agreed that tracking and monitoring a large number of students through e-learning platforms can be challenging, reflecting perceived complexities in assessment, communication, and progress monitoring. Although 39.5% disagreed and 7.5% were neutral, the results suggest that managing scale in online settings remains a notable concern for many faculty members. Attitudinal perceptions within the university community (Q12) were generally positive, with 53.1% disagreeing that negative attitudes toward e-learning prevail. Nevertheless, 29.9% agreed that some degree of negativity or resistance still exists, while 17% remained neutral. These figures suggest that while overt resistance may not be dominant, pockets of scepticism or ambivalence persist within the institutional culture.

Time management concerns (Q13) appear comparatively limited. A clear majority (63.3%) disagreed that e-learning restricts their ability to cover all lesson content. Only 19.1% agreed, and 17.7% remained neutral, indicating that most participants feel capable of managing instructional pacing in digital contexts. However, perceptions of workload (Q14) reveal greater division. Although 49% disagreed that e-learning imposes an additional burden, a substantial 36.1% agreed, and 15% of participants were neutral. This distribution highlights uneven experiences, where almost half of the participants perceive increased responsibilities associated with online teaching.

Overall, the findings indicate that individual challenges are less associated with technological complexity and more strongly connected to pedagogical transition, student

management, and perceived workload. While most participants demonstrate confidence in using e-learning technologies, over half report difficulties in shifting instructional approaches and managing large student cohorts. Additionally, although time constraints are not widely perceived as limiting, perceptions of workload remain divided. These patterns suggest that faculty barriers are primarily instructional and organisational rather than technical in nature.

4.3. Role of Gender, Academic Rank, Job Status, Type of Discipline, and Years of Experience on Organisational and Self-Challenges

The second research objective sought to determine whether organisational and individual challenges in e-learning differ significantly based on certain demographic and professional aspects. Using the univariate analysis of variance (ANOVA) in SPSS, the study observed the effects of the following variables on apparent challenges: job status, academic rank, years and types of discipline, and gender.

The analysis of gender using one-way ANOVA revealed no statistical difference in perceived individual, organisational, and technical difficulties ($F = 2.041$, $p = 0.155$). This indicates that male and female participants reported comparable levels of difficulty in e-learning implementation. This finding aligns with studies by Yas et al. (2024) and Younes and Shalapy (2020), both of which concluded no significant gender-based differences among participants in terms of e-learning engagement or preparedness. However, the present findings contrast with Gamdi and Samarji (2016), who identified gender as a potential barrier in earlier online learning contexts. The discrepancy may suggest a gradual reduction in gender disparities in technological access and digital competence within the past decade.

Across the remaining demographic and professional variables, the analysis consistently revealed no statistically significant differences in perceived e-learning barriers. Academic rank showed no significant effect ($F = 1.539$, $p = 0.196$), indicating that professors, associate professors, and lecturers experience comparable levels of difficulty. Similarly, job status or role did not produce significant variation ($F = 6.234$, $p = 0.140$), suggesting that administrative responsibilities or teaching roles do not meaningfully influence perceptions of challenge. Disciplinary background also demonstrated no significant differences ($F = 0.654$, $p = 0.625$), nor did the years of experience ($F = 0.045$, $p = 0.956$). Taken together, these findings indicate a consistent pattern: perceived challenges do not vary according to rank, role, discipline, or professional experience, suggesting that such challenges are broadly shared across participant groups.

These results indicate that perceived e-learning challenges are relatively uniform across demographic and professional categories. The absence of statistically significant differences suggests that the barriers identified in this study are structural and institutional in nature rather than individual or group-specific. This uniformity reinforces the interpretation that interventions aimed at improving e-learning implementation should adopt institution-wide strategies rather than targeting specific demographic subgroups.

4.4. Qualitative Findings

The qualitative interviews addressed the final research objective, exploring respondents' lived experiences with e-learning adoption and the strategies they employ to address emerging challenges in creating an effective virtual teaching environment. While respondents generally described the current e-learning landscape as functional, they emphasised the need for improved planning, instructional design, and sustained support to enhance the effectiveness of e-learning implementation.

Findings from the thematic analysis are summarised in Table 3, which showcases the most prominent barrier that each respondent had personally experienced and expressed. Several

recurring obstacles were identified, including limited digital literacy among some faculty members, resistance to transitioning from traditional teaching methods, insufficient IT support, increased preparation time for online materials, difficulties maintaining student engagement, and concerns regarding academic integrity during online assessments. These findings provide context-specific insight from a Saudi higher educational institution, demonstrating that, despite institutional investments in e-learning infrastructures, operational and pedagogical challenges persist. The evidence suggests that effective e-learning implementation depends not only on technological availability but also on sustained faculty development, institutional recognition, and structured technical support.

Table 3

Summary of Qualitative Interview Responses from Faculty Members on E-Learning Challenges.

Respondents	Response Summary
Respondent 1	We feel that the limited digital literacy among some faculty causes difficulties in using learning management systems and online tools.
Respondent 2	I have experienced that some faculty members prefer traditional teaching methods and feel uncomfortable shifting to virtual or blended formats.
Respondent 3	While we are still working with these methods, the lack of proper IT support can disrupt online teaching and thus disturb the students as a result.
Respondent 4	We find that preparing online materials, recording lectures, and managing virtual classes can be time-consuming.
Respondent 5	It is difficult to maintain students' attention, interaction, and motivation in virtual environments; we as lecturers cannot monitor them.
Respondent 6	The most challenging part is ensuring academic integrity and fairness during online assessments and examinations.

In addition to identifying challenges, respondents proposed practical solutions to correspond with the final research objective. While most respondents evaluated the e-learning situation at Imam Abdulrahman Bin Faisal University as satisfactory, many suggested enhancements in focus, design, and planning. Key recommendations included strengthening time management skills, enhancing technical expertise with digital tools and platforms, improving online presentation and engagement techniques, and fostering stronger communication techniques. Respondents also stressed the importance of interactive tools and active learning methods to increase student participation. These recommendations reinforce the need for continuous professional development and institutional alignment in supporting e-learning implementation. They are also consistent with Alanazi and Alshaalan (2020), who highlighted the importance of enhancing institutional infrastructure and providing an optimum e-learning environment.

4.5. Integrated Discussion of Quantitative and Qualitative Findings

This study examined e-learning challenges across three dimensions: self-related, organisational, and technological. The quantitative findings indicate that individual barriers are primarily pedagogical rather than technical. Although most participants reported confidence in using e-learning technologies, over half experienced difficulties transitioning to electronic instruction and managing large student cohorts. Workload perceptions were also divided, reflecting uneven adaptation experiences. At the organisational and technological levels, the lack of faculty incentives (68%) emerged as a central concern, alongside issues related to technical coordination and inter-institutional collaboration. In contrast, financial constraints and

timetable organisation were not widely perceived as critical barriers. This differs from earlier findings by Aljaber (2018), who identified funding as a significant pre-pandemic obstacle, suggesting a contextual shift in institutional priorities.

The qualitative data substantiate and deepen these quantitative patterns. Respondents' narratives highlight workload intensification, limited pedagogical preparation for digital teaching, and insufficient institutional recognition. Rather than contradicting the statistical results, these accounts clarify why pedagogical transition and workload redistribution remain central concerns despite adequate technological access. Overall, the integrated findings indicate that sustainable e-learning implementation depends less on technological infrastructure and more on institutional alignment, especially in relation to incentive structures, professional development, workload policies, and instructional support mechanisms.

4.6. Future Recommendations by the Faculty Members

This study determined that to facilitate better interaction between lecturers and students, institutions should enhance digital, technical, communication, and time management competencies. To support effective e-learning implementation, structured training programmes for faculty members must be conducted in higher education institutions. It is further recommended that higher education institutions provide a supportive e-learning environment and train instructors on technology-based tools to improve both the instructors' and students' engagement during e-learning. However, as the study is limited to a single institutional context, future research could expand this work through multi-institutional, discipline-specific, or longitudinal approaches.

5. Conclusion

This study explored the multifaceted challenges faced by faculty members in implementing e-learning, highlighting the influence of personal, technological, and organisational factors. By integrating both quantitative and qualitative evidence, the study provides a comprehensive understanding of faculty experiences within a Saudi higher education institution beyond the immediate impact of the COVID-19 pandemic. The findings demonstrate that while e-learning has become an integral component of contemporary higher education, its effective implementation continues to require sustained institutional commitment and strategic support. The results reveal that faculty members encounter several barriers in adopting and maintaining effective e-learning practices. These include limitations in technological infrastructure, inconsistent technical support, and the need for continuous professional development in digital pedagogy. Additionally, challenges related to maintaining student engagement in online learning environments remain a significant concern for educators. Addressing these issues is essential to ensure that e-learning can function as a sustainable and effective mode of instruction in higher education. From a practical perspective, the study underscores the importance of institutional policies that prioritise reliable technological infrastructure, structured technical support systems, and targeted faculty training programmes. Professional development initiatives should focus not only on technical skills but also on innovative pedagogical strategies that enhance student interaction and engagement in virtual classrooms. Such initiatives can empower faculty members to design more effective and inclusive online learning experiences. The study also contributes to the existing body of literature by providing context-specific insights into e-learning implementation within Saudi higher education institutions in the post-pandemic educational landscape. Future research could expand this work by examining faculty experiences across multiple institutions or by exploring students' perspectives on e-learning effectiveness. Such investigations may provide a more comprehensive understanding of how digital learning environments can be further improved to support both educators and learners.

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

Acknowledgement: The author would like to acknowledge the valuable guidance and support provided by the journal advisors, chairpersons, editorial board members, and the respective international offices of the ASEAN Journal of Open and Distance Learning. Appreciation is also extended to the faculty members who participated in this study and contributed their time and insights.

Conflict of Interest Statement: The author declares no conflict of interest.

Availability of data and materials: All cited studies are publicly available through their respective sources (DOIs/URLs provided in references).

Authors' contributions: The author conducted all aspects of this study, including literature review, synthesis, analysis, and manuscript preparation.

Ethics Statement: This study involved human participants and was approved by the university's review board. All participants took part voluntarily, and informed consent was obtained from each participant before data collection.

References

Alanazi, A. A., & Alshaalan, Z. M. (2020). Views of faculty members on the use of e-learning in Saudi medical and health colleges during the COVID-19 pandemic. *Journal of Nature and Science of Medicine*, *3*(4), 308-317. https://journals.lww.com/jnsm/fulltext/2020/03040/views_of_faculty_members_on_the_use_of_e_learning.14.aspx

Alashwal, M. (2020). Assessing online teaching in higher education amid the COVID-19 pandemic: A case study from Saudi Arabia. *Conscience*. https://doi.org/10.5281/zenodo.4058780

Aldhahi, M. I., Akour, A., Aljared, A., Khalaf, A. J., & Almulhim, M. (2021). Predictors of electronic learning self-efficacy: A cross-sectional study. *Frontiers in Education, 6.* https://doi.org/10.3389/feduc.2021.614333

Alharbi, O., & Lally, V. (2017). Adoption of e-learning in Saudi Arabian university education: Three factors affecting educators. *European Journal of Open Education and E-Learning Studies, 2*(2), 63–85. https://doi.org/10.5281/zenodo.1039316

Aljaber, A. (2018). E-learning policy in Saudi Arabia: Challenges and successes. *Research in Comparative and International Education, 13*(1), 176–194. https://doi.org/10.1177/1745499918764147

Almahasheer, M. B., Al Rubaish, A., Alkadi, A., Abdellatif, M. A., Ravinayagam, V., Wael Fateh, A., Marimuthu, P. R., & Alomair, N. A. (2021). Faculty readiness for online teaching at Imam Abdulrahman Bin Faisal University during the COVID-19 crisis: A cross-sectional study. *F1000Research, 10*, 840. https://doi.org/10.12688/f1000research.28173.1

Almaiah, M. A., Al-Khasawneh, A., & Althunibat, A. (2020). Exploring the critical challenges and factors influencing the e-learning system usage during the COVID-19 pandemic. *Education and Information Technologies, 25*(6), 5261–5280. https://doi.org/10.1007/s10639-020-10219-y

Almuqayteeb, T. A. (2024). Faculty online assessment experience during COVID-19 in Saudi universities. *Journal of Education and E-Learning Research, 11*(3), 527–538. https://files.eric.ed.gov/fulltext/EJ1445584.pdf

Al-Qashouti, N. M. H. (2024). *Educational system management under crisis events: Remote education framework during and post the pandemic* [Doctoral dissertation, Hamad Bin Khalifa University, Qatar].

Alsaywid, B., Lytras, M. D., Abuzenada, M., Lytra, H., Sultan, L., Badawoud, H., Abuznadah, W., Alhaider, S. A., Housawi, A., & Apostolaki, A. (2021). Effectiveness and preparedness of institutions' e-learning method during the COVID-19 pandemic for residents' medical training in Saudi Arabia: A pilot study. *Frontiers in Public Health, 9*, 707833. https://doi.org/10.3389/fpubh.2021.707833

Fageeh, A. I. (2024). Maximizing learning management systems in online college English education: Views from France and Saudi Arabia. *Social Sciences & Humanities Open, 10*, 100868. https://doi.org/10.1016/j.ssaho.2024.100868

Gamdi, M., & Samarji, A. (2016). Perceived barriers toward e-learning by faculty members at a recently established university in Saudi Arabia. *International Journal of Information and Education Technology, 6*(1), 23–28. https://doi.org/10.7763/ijiet.2016.v6.652

Martin, F., Budhrani, K., & Wang, C. (2019). Examining faculty perception of their readiness to teach online. *Online Learning Journal, 23*(3), 97–119. https://doi.org/10.24059/olj.v23i3.1555

Nagro, S. A. (2021). The role of artificial intelligence techniques in improving the behavior and practices of faculty members when switching to e-learning in light of the COVID-19 crisis. *International Journal of Education and Practice, 9*(4), 687–714. https://doi.org/10.18488/journal.61.2021.94.687.714

Porter, W. W., Graham, C. R., Bodily, R., & Sandberg, D. (2016). A qualitative analysis of institutional drivers and barriers to blended learning adoption. *The Internet and Higher Education, 28*, 17–27. https://doi.org/10.1016/j.iheduc.2015.08.003

Shariq, M., Lutfy, K., Alahdal, A., & Abdullah Aldhali, F. I. (2022). Teachers and learners' perceptions of e-learning implementation in special times: Evaluating relevance and internationalization prospects at Saudi universities. *Sustainability, 14*(10), 6063. https://doi.org/10.3390/su14106063

Yas, H., Dafri, W., Sarhan, M. I., Albayati, Y., & Shwedeh, F. (2024). Universities' faculty's perception of e-learning tools: Filling the gaps for enhanced effectiveness. In A. Al-Marzouqi, S. A. Salloum, M. Al-Saidat, A. Aburayya, B. Gupta (Eds.), *Artificial intelligence in education: The power and dangers of ChatGPT in the classroom* (Vol. 144, pp. 573–588). Springer. https://doi.org/10.1007/978-3-031-52280-2_36

Younes, A., & Shalapy, H. (2020). Measuring faculty members' readiness to use e-learning in social work education based on the theory of planned behavior. *Egyptian Journal of Social Work, 10*(1), 41–62.