



Faculty Perspectives on Emerging Educational Trends and Structural Barriers in Palestinian Higher Education

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Abstract:

This descriptive study examines faculty perspectives on emerging educational trends, technological innovations, and systemic challenges shaping the future of higher education in Palestine. The study also investigates faculty readiness for digital transformation, evolving pedagogical models, and the institutional capacity required to support educational innovation. Data were collected from 70 faculty members across Palestinian higher education institutions using a structured questionnaire based on a five-point Likert scale. Descriptive analysis was conducted to assess students' and teachers' perspectives, and independent-samples t-tests were employed to compare mean differences between two groups (e.g., gender). At the same time, one-way analysis of variance (ANOVA) was used to examine differences across groups on demographic or professional characteristics. The findings indicate generally positive attitudes toward innovation, with faculty expressing strong support for integrating personalized digital learning and competency-based curricula to better align academic outcomes with labor market demands. However, the results also reveal significant structural barriers that hinder institutional adaptability, particularly limited resources and infrastructure constraints within Palestine's broader socio-political context. Overall, the study offers valuable insights for policymakers and higher education leaders seeking to bridge global educational trends with the specific needs and realities of the Palestinian higher education system.

Keywords: *Barriers; Emerging Educational Trends; Faculty Perspectives; Higher Education; Palestine.*

وجهات نظر أعضاء هيئة التدريس حول الاتجاهات التعليمية الناشئة والمعوقات البنيوية في مؤسسات التعليم العالي الفلسطيني

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ملخص:

تسعى هذه الدراسة الوصفية إلى استقصاء وجهات نظر أعضاء هيئة التدريس نحو الاتجاهات التعليمية الناشئة والابتكارات التربوية والتكنولوجية، بالإضافة إلى التحديات البنيوية التي تسهم في تشكيل مستقبل التعليم العالي في فلسطين، كما تهدف الدراسة إلى الكشف عن مدى جاهزية أعضاء هيئة التدريس للتحويل الرقمي وتبني النماذج التربوية الحديثة، وتحديد القدرات المؤسسية اللازمة لدعم الابتكار التعليمي وتعزيزه بفاعلية. تم جمع البيانات من عينة مكونة من (70) عضو هيئة تدريس في مؤسسات التعليم العالي الفلسطينية باستخدام استبانة منظمة استندت إلى مقياس ليكرت الخماسي. كما تم توظيف أساليب التحليل الوصفي لتحليل آراء المشاركين وتقييم تصوراتهم، إضافة إلى استخدام اختبار (T) للعينات المستقلة للكشف عن الفروق ذات الدلالة الإحصائية بين متوسطات المجموعات وفق بعض المتغيرات الديموغرافية، مثل الجنس. في حين استُخدم تحليل التباين الأحادي (ANOVA) لفحص الفروق بين المجموعات وفقاً للخصائص الديموغرافية والمهنية. تشير النتائج إلى وجود توجهات إيجابية نحو تبني الابتكار التربوي، حيث أبدى أعضاء هيئة التدريس دعماً ملحوظاً لدمج التعلم الرقمي الشخصي وتطبيق المناهج القائمة على الكفايات، مما يعزز مواءمة مخرجات العملية التعليمية مع متطلبات سوق العمل واحتياجاته المتجددة. كما تكشف النتائج وجود معوقات بنيوية جوهرية تحدّ من قدرة مؤسسات التعليم العالي على التكيف والتطوير، لا سيما ما يتعلق بمحدودية الموارد والقيود المرتبطة بالبنية التحتية في ظل السياق الاجتماعي والسياسي المعقد في فلسطين. وبوجه عام، تقدم هذه الدراسة رؤى مهمة تدعم جهود مواءمة التوجهات التعليمية العالمية مع خصوصية واحتياجات التعليم العالي الفلسطيني.

الكلمات المفتاحية: المعوقات؛ الاتجاهات التربوية الناشئة؛ وجهات نظر أعضاء هيئة التدريس؛ التعليم العالي؛

فلسطين.

1. Introduction

Higher education is currently undergoing a profound transformation driven by rapid technological advancements, evolving societal expectations, and the increasing demands of a global knowledge-based economy. The traditional model of higher education, largely characterized by lecture-based instruction and standardized curricula, is increasingly being questioned regarding its ability to prepare learners for a complex and rapidly changing future (Shaji George et al., 2025). In response, academic institutions are shifting toward more agile and student-centered approaches that emphasize flexibility, innovation, and lifelong learning (Li et al., 2025). Within this evolving landscape, faculty members play a central role, as their responsibilities have expanded beyond content delivery to include mentoring, facilitating learning processes, and designing meaningful educational experiences (Thùy, 2025). Consequently, faculty perspectives and adaptability are critical factors in navigating this transformation successfully.

The need for educational transformation became particularly evident during the COVID-19 pandemic, which acted as a major catalyst for the rapid adoption of digital technologies in higher education (Bogdándy et al., 2020). The expansion of virtual classrooms and digital learning platforms has demonstrated the potential for greater flexibility in both time and space, reducing traditional barriers to educational access. However, this accelerated digital integration has also revealed and intensified systemic challenges. While technological tools offer new opportunities for engagement and personalized learning, they also raise concerns related to meaningful student participation in virtual environments, the integrity of online assessments, and the persistent digital divide, which continues to threaten equitable access to education (UNESCO, 2023).

Alongside technological changes, a parallel transformation is taking place in pedagogical practices, particularly through the growing emphasis on personalized and competency-based education. This model focuses on individualized learning pathways and demonstrating skill mastery rather than strict adherence to standardized curricula or fixed instructional timelines (Galan & Kotze, 2024). Although this approach has the potential to make HE more relevant by aligning academic learning with professional and societal needs, it also requires faculty members to adopt innovative teaching strategies and assessment methods that maintain high academic standards while addressing diverse student needs.

In addition, multidisciplinary, research-oriented, personalized, and intensive planning courses represent a pedagogical approach grounded in practice-based learning environments where students actively apply theoretical knowledge to real or simulated planning challenges. Such learning environments create interactive and collaborative spaces in which students work together to explore ideas, analyze complex issues, and develop practical solutions through hands-on engagement. By emphasizing learning by doing, students are encouraged to experiment, reflect, and refine their work through continuous feedback and teamwork. This approach promotes experiential learning and strengthens collaboration, creativity, and critical thinking while supporting the development of professional competencies. Moreover, it facilitates the integration of theoretical knowledge with practical application, enabling students to connect academic learning with real-world contexts (Galan & Kotze, 2024).

1.2 Context of Higher Education (HE) in Palestine

Higher education in Palestine operates within a uniquely complex and challenging socio-political context that profoundly influences institutional development, academic practices, and resource accessibility (Mattour & Kamoun-Chouk, 2026). Palestinian universities function under conditions shaped by prolonged political instability, severe movement restrictions, and fragmented

infrastructure, which impede the mobility of both students and faculty, restrict access to academic facilities, and complicate international collaboration. Despite these systemic constraints, the Palestinian HE sector has consistently demonstrated remarkable resilience and a strong commitment to expanding educational opportunities and improving academic quality (Alenezi et al., 2023).

In response to global educational trends and labor market demands, universities have increasingly sought to integrate digital technologies, modernize curricula, and promote innovative teaching approaches (Mattour & Kamoun-Chouk, 2026). However, these modernization efforts are frequently constrained by limited financial resources, uneven technological infrastructure, and insufficient professional development opportunities for faculty members (Alenezi et al., 2023). Furthermore, the context is often marked by the destruction of infrastructure, particularly in Gaza, which necessitates constant adaptation and rebuilding (Hamamra et al., 2025). Consequently, understanding how faculty perceive and respond to emerging educational innovations within this distinct environment is essential for developing effective strategies that support institutional adaptability, enhance teaching practices, and strengthen the overall quality and sustainability of HE in Palestine (Al-Shaer et al., 2025).

The rapid interaction of technological integration, pedagogical innovation, and the evolving role of faculty necessitates a critical reexamination of higher education's foundational structures. This study emphasizes that faculty perspectives are central to understanding how emerging technologies and innovative pedagogical models are interpreted and applied. As key actors in implementing educational reform, faculty provide critical insights into both the opportunities and constraints shaping teaching and learning, guiding policymakers and institutional leaders in designing responsive strategies that strengthen academic capacity, support professional development, and improve educational outcomes.

However, Palestinian HE remains insufficiently examined, particularly from faculty members' standpoints. Existing research often prioritizes student outcomes or institutional readiness, underrepresenting the professional realities of academics directly responsible for translating reform into classroom practice. This gap is significant given that Palestinian universities operate under exceptional structural and political constraints, including restricted mobility, limited resources, and unstable infrastructure, which collectively complicate the adoption of sustainable educational innovation.

By addressing these limitations, the present study contributes new empirical knowledge on how faculty in Palestinian HE perceive emerging educational trends and how structural barriers influence their implementation. It advances the understanding of HE transformation in conflict-affected contexts and offers evidence-based recommendations to support institutional planning and policy development aimed at strengthening resilience, equity, and quality in Palestinian universities.

1.3 Study Objectives

This study aims to achieve the following objectives:

1. To evaluate higher education instructors' perspectives on the integration of digital technologies and online learning into the educational process, to understand their level of acceptance and readiness to adopt these approaches.
2. To investigate faculty perceptions of the shift toward personalized and competency-based learning models, specifically exploring how they view these models as tools for enhancing student learning and skill development.

3. To measure faculty attitudes toward multidisciplinary and project-based learning curricula, determining the level of support for these pedagogical methods that integrate diverse fields of knowledge and apply them to real-world problems.

4. To determine the key challenges faculty anticipate in adopting emerging educational trends and to identify the specific types of institutional support they deem necessary to facilitate the effective implementation of these innovations.

By achieving these objectives, the study aims to provide actionable insights for policy improvement, strategic resource allocation, and the development of targeted professional development programs. Ultimately, this would support the evolution of HE in a manner that aligns with both faculty aspirations and student needs amidst ongoing transformation.

1.4 Statement of the Problem

Palestinian higher education institutions face a complex dual challenge in adapting to global trends in digital transformation and competency-based education. On one hand, there is increasing international pressure to modernize curricula and adopt agile, interdisciplinary, and technology-driven models that enhance graduate employability. On the other hand, the system operates in a unique and challenging context characterized by persistent socio-political instability, restricted mobility, fragmented infrastructure, and limited resources, which hinder the effective implementation of educational innovations.

While existing literature highlights the benefits of digital learning and personalized education in stable environments, significantly less attention has been paid to their perception and implementation in fragile or conflict-affected contexts. Faculty members in Palestine are crucial as primary agents of change, and their perspectives, readiness, and capacity to shift from traditional lecture-based instruction to more flexible, technology-enhanced, and competency-oriented models are insufficiently explored.

This lack of empirical understanding creates a critical gap in the literature and hinders policymakers and institutional leaders from designing effective strategies that support faculty and promote sustainable educational transformation. Therefore, this study aims to examine faculty perceptions of emerging educational trends, identify the anticipated challenges in implementing these innovations, and explore the types of institutional support necessary to enhance the resilience and adaptability of the Palestinian higher education system.

To achieve these objectives, the study seeks to answer the following main research question:

What are faculty members' perceptions in Palestinian higher education institutions toward emerging educational trends, and what challenges and institutional support do they consider essential for their effective implementation? To address this main research question, the study specifically answers the following sub-questions:

1.5 Study Questions

1. What are the perceptions of higher education faculty regarding the integration of digital technologies and online learning into the educational process?
2. How do higher education faculty perceive the shift toward personalized and competency-based learning models?
3. What are the attitudes of higher education faculty toward multidisciplinary and project-based learning curricula?
4. What challenges do higher education faculty anticipate facing, and what types of institutional support do they deem necessary to implement emerging educational trends effectively?

1.6 Research hypothesis:

There are no statistically significant differences in faculty attitudes toward digital transformation, competency-based education, and interdisciplinary learning based on demographic and professional characteristics (e.g., gender, academic rank, or years of experience).

2. Literature review

Kononova et al. (2024) examine the transformation of Ukrainian higher education institutions (HEIs) under prolonged, overlapping crises, including the aftermath of COVID-19 and the escalation of war. Rather than merely documenting disruption, their study highlights how crisis conditions act as a catalyst for accelerated digital transformation, reshaping both institutional practices and stakeholder expectations. Based on an online survey of 450 students and 55 academic staff in a public HEI in the Kharkiv region, the findings reveal a complex and somewhat contradictory pattern in perceptions of digital education. While both students and teachers reported relatively high satisfaction with digital platforms and online instructional content, this acceptance appears to be largely context-dependent and crisis-driven rather than a stable pedagogical preference.

The widespread endorsement of online learning as the dominant mode during wartime reflects its functional role in ensuring educational continuity rather than its perceived pedagogical superiority. This is further reinforced by respondents' shared view that online education is less suitable for long-term implementation, suggesting an implicit recognition of its limitations in supporting deep learning, interaction, and academic engagement. A notable analytical dimension emerges in the divergence between students and academic staff. Students expressed a stronger preference for increased flexibility and learner-centered design, indicating a shift toward more individualized and adaptive educational expectations. In contrast, academic staff demonstrated greater caution, reflecting concerns about pedagogical quality, workload, and institutional readiness. This tension points to a broader structural issue in crisis-driven digitalization: while emergencies accelerate adoption, they do not necessarily resolve underlying pedagogical and infrastructural challenges. Overall, the study demonstrates that digital transformation in crisis contexts is not a linear process of improvement but a contested and uneven adaptation shaped by necessity, institutional constraints, and differing stakeholder expectations. It also underscores that emergency-driven innovation may normalize short-term digital solutions without guaranteeing their sustainability or pedagogical robustness in post-crisis higher education systems.

VanWyngaarden et al. (2024) critically examine the barriers to implementing high-impact teaching practices (HIPs) among undergraduate STEM educators, particularly within the constrained context of the COVID-19 pandemic. Rather than simply identifying obstacles, the study situates these challenges within a broader systemic framework of institutional readiness and pedagogical adaptability. Based on semi-structured interviews with 13 instructors, the findings confirm established barriers, most notably administrative burdens and financial limitations, but also reveal how crisis-induced remote teaching intensified pre-existing structural weaknesses in higher education systems. A key analytical insight of the study is that the shift to asynchronous online learning did not merely disrupt instructional delivery but fundamentally altered the conditions under which pedagogical innovation could be sustained. Faculty reported heightened difficulty in maintaining student engagement and building meaningful learning relationships, indicating that HIPs are not easily transferable to online environments without significant redesign and institutional support. This suggests that the effectiveness of innovative teaching practices is highly context-dependent and shaped by the interaction between pedagogy, infrastructure, and modality of delivery. Importantly,

the study moves beyond problem identification by highlighting institutional strategies that may mitigate these challenges, such as instructional coaching, curriculum support, and communities of practice. However, these recommendations also implicitly underscore a critical gap: the successful implementation of HIPs is not solely a matter of individual faculty effort but requires sustained institutional investment and structural reform. Overall, the study contributes to a more nuanced understanding of educational innovation by demonstrating that barriers to high-impact teaching are not temporary disruptions caused by the pandemic, but rather deeply embedded systemic conditions that become more visible under crisis pressure. This shifts the discussion from short-term adaptation toward the need for long-term institutional transformation to support equitable and effective teaching practices.

Bakeer et al. (2023) examined the potential of mobile learning (m-learning) within a project-based learning (PBL) framework to improve EFL students' oral skills in a Language Use course. Despite the abrupt closure of universities due to the COVID-19 pandemic, instructors were required to assess students' oral proficiency, specifically their effective use of vocabulary and expressions, ability to improvise daily life situations, fluency, and engagement. The participants were 97 EFL learners majoring in English (19 males, 78 females), who completed a project-based task designed to develop speaking skills through collaborative projects submitted at the course's conclusion. To achieve this objective, the researchers developed a project-based cycle (OMEGA-P), where O stands for orientation, M for modeling, E for encouragement, G for Guide, A for assistance, and P for products, and administered semi-structured interviews via Messenger and WhatsApp.

The findings revealed creative student outputs across various skill areas and underscored the effectiveness of the project-based approach to online "Discussion Sessions." These sessions provided a flexible and enjoyable learning environment, enhancing students' self-confidence through active involvement in real communicative situations with peers and the instructor. However, the study also identified several barriers. Socio-cultural restrictions in rural areas made it difficult to convince female students, who comprised 78 of the 97 participants, compared to 19 males, to participate in recorded videos that would be uploaded to WhatsApp. Technical challenges, poor internet connectivity, a lack of digital skills, and low motivation toward ICT tools further hindered participation in online sessions and virtual classes. The researchers suggested that such technical barriers could be mitigated through targeted training sessions on effective ICT use. Additionally, they acknowledged difficulties in balancing project-based activities with curricular demands, and emphasized the need to respect cultural beliefs and values, especially for female students, noting that smartphone applications can facilitate task completion without violating cultural norms.

Schneckenberg (2009) provides a critical examination of why technology-enhanced innovation in higher education, particularly eLearning in European universities, has progressed more slowly than expected. Rather than attributing this lag to surface-level constraints such as inadequate infrastructure, limited funding, or insufficient faculty interest, the study challenges this reductionist explanation and shifts attention toward deeper systemic and cultural determinants. A key analytical contribution of the paper is its argument that low levels of faculty engagement with eLearning are not merely individual resistance or technical incapacity, but are embedded in the organizational logic of universities. These include rigid institutional structures, entrenched academic norms, and professional cultures that prioritize traditional modes of teaching and disciplinary autonomy over innovation and experimentation. In this sense, resistance to eLearning is reframed as a structural outcome rather than an isolated behavioral issue. The study further highlights the importance of motivational and cultural dimensions of academic work, suggesting that long-standing habits, values, and perceptions of

teaching legitimacy significantly shape faculty willingness to adopt new technologies. This implies that technological innovation in higher education cannot be effectively understood or implemented without addressing the underlying academic culture that governs teaching practices. Importantly, Schneckenberg also draws attention to the limits of institutional policy alone in driving change. The findings suggest that eLearning innovation is constrained by macro-level systemic factors that universities cannot easily resolve through technical investment or administrative reform alone. Instead, successful adoption requires alignment between institutional strategies and the intrinsic motivations, professional identities, and contextual realities of academic staff. Overall, the study reframes technology adoption in HE as a cultural and organizational transformation problem rather than a purely technical one, emphasizing that sustainable innovation depends on reshaping institutional cultures and academic value systems in addition to providing technological infrastructure.

Hurajová et al. (2022) investigate university teachers' perceptions of online teaching in Media and Communication Studies in Slovakia during the first two years of the COVID-19 pandemic, focusing on how emergency remote teaching reshaped instructional practices and communication dynamics. Rather than treating the shift to online learning as a temporary technical adjustment, the study situates it within a broader transformation of academic communication and pedagogical sustainability under crisis conditions. A key analytical insight emerging from the study is that the rapid adoption of platforms such as Zoom and Google Meet, along with asynchronous communication tools like email, chat applications, and social media, did not merely replace face-to-face instruction but fundamentally reconfigured the communication ecology of HE. Teaching and learning became increasingly mediated through digital interfaces, where interaction, feedback, and engagement were restructured around platform affordances rather than traditional classroom dynamics. The study also highlights a shift in faculty perceptions of digital tools, moving from initial necessity-driven adoption to a more normalized integration into teaching practices. However, this apparent stabilization of online education should be interpreted cautiously, as it largely reflects crisis-induced adaptation rather than fully developed pedagogical preference or institutional readiness for long-term digital transformation. Importantly, the authors suggest that these changes extend beyond a single discipline, with implications for broader fields in the social sciences and humanities. This generalizability underscores that the pandemic functioned as a system-wide accelerator of digital dependency in higher education, rather than a discipline-specific phenomenon. Overall, the study indicates that digital technologies are no longer peripheral tools but have become central to maintaining educational continuity. However, it also implicitly raises a critical question: whether this accelerated integration represents a sustainable pedagogical advancement or a crisis-driven normalization of emergency practices that may require further institutional refinement to ensure long-term educational quality.

3. Methodology

This section outlines the research design, study sample, data collection methods, and data analysis procedures employed to investigate higher education faculty attitudes toward emerging trends, innovations, and anticipated challenges in the future of higher education.

3.1. Research Design

This study adopted a descriptive research design to examine and describe higher education faculty attitudes toward the future of HE. A structured questionnaire designed on a five-point Likert scale was employed. The questionnaire items were organized into four main sections, corresponding directly to the study's research objectives: (1) perceptions of digital and online learning integration;

(2) views on personalized and competency-based learning models; (3) attitudes toward multidisciplinary and project-based curricula; and (4) anticipated challenges and required institutional support. This design enabled the systematic measurement of faculty attitudes across these key thematic areas.

3.2. Study Sample

The study sample comprised 70 higher education faculty members selected from various universities and colleges in Palestine using a purposive sampling technique. The sample included a diverse range of academic disciplines, professional ranks, and years of teaching experience to ensure representation of multiple perspectives on the trends and challenges facing higher education. The selection criteria required participants to be currently engaged in higher education instruction and to possess experience utilizing digital platforms and online learning in their teaching practices. A total of 83 questionnaires were distributed, yielding 70 completed and valid responses, representing a response rate of 85%. The final sample demographic characteristics are presented in Table 1 as follows:

Table 1. Demographic Characteristics of Faculty Sample (N = 70)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	42	60.0
	Female	28	40.0
Academic Rank	Professor	15	21.4
	Associate Professor	28	40.0
	Assistant Professor	27	38.6
Teaching Experience	1–5 years	22	31.4
	6–10 years	30	42.9
	More than 10 years	18	25.7

3.3. Data Collection Procedure

The questionnaire was administered to participants over ten days through a combination of online and face-to-face distribution methods. Participants received an email containing a link to the online version of the questionnaire. Participation was entirely voluntary, and respondents were assured of the confidentiality of their answers. All participants were informed of the study's objectives and their right to withdraw at any time without consequence, and explicit consent was obtained before data collection.

3.3.1 Survey Instrument

Data were collected using a structured questionnaire developed for this study to assess faculty attitudes toward the future of HE. The instrument comprised 34 items measured on a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree), enabling the quantitative assessment of faculty attitudes across the identified dimensions.

The questionnaire consisted of five sections aligned with the research objectives: (1) demographic and professional characteristics, (2) digital and online learning, (3) personalized and competency-based education, (4) multidisciplinary and project-based learning, and (5) anticipated challenges and required institutional support for implementing emerging educational trends.

3.3.2 Instrument Validity and Reliability

To ensure the validity and reliability of the instrument, several procedures were undertaken. Content validity was established through expert review by specialists in HE and research methodology, who evaluated the questionnaire for clarity, relevance, and alignment with the study constructs. Based on their feedback, necessary revisions were made to improve the accuracy and appropriateness of the items.

Reliability was assessed using Cronbach's alpha. A pilot study was conducted with a small group of faculty members who were not included in the main sample. The analysis yielded an overall Cronbach's alpha of 0.89, indicating strong internal consistency and confirming that the instrument reliably measures the intended constructs.

3.3.3 Statistical Analysis

Given the context of higher education in Palestine, the data analysis proceeded in two main phases. Descriptive statistics were computed to summarize faculty responses across the four questionnaire sections. Specifically, mean scores and standard deviations were calculated for each section to provide an overview of central tendencies and response variability regarding digital learning, competency-based education, multidisciplinary curricula, and anticipated challenges. Comparative analyses were conducted to examine significant differences in faculty attitudes based on demographic and professional characteristics. Independent samples t-tests were employed to compare mean differences between two groups (e.g., gender). At the same time, one-way analysis of variance (ANOVA) was used to examine differences across groups with more than two categories (e.g., academic rank, years of teaching experience). Before conducting parametric tests, assumptions of normality and homogeneity of variance were assessed. Statistical significance was determined at the $p < 0.05$ level, and all analyses were performed using appropriate statistical software.

These analyses aimed to provide a nuanced understanding of how faculty perspectives may vary across demographic factors, including years of teaching experience and prior experience with digital platforms, thereby informing targeted institutional support strategies. The resulting statistical values reflect faculty attitudes toward emerging trends, innovations, and anticipated challenges, while also accounting for concerns or constraints unique to the Palestinian higher education context.

4. Results

The following section presents the study's findings aligned with the four research questions investigating faculty attitudes toward digital learning, competency-based education, multidisciplinary curricula, and anticipated challenges. Descriptive statistics, including means and standard deviations, were computed for each survey item to identify patterns and variations in faculty perceptions across the Palestinian higher education context.

Results of Question 1: "What are the perceptions of higher education faculty regarding the integration of digital technologies and online learning into the educational process?"

To address this research question, the mean scores and standard deviations of faculty attitudes toward the integration of digital learning technologies and online learning were computed. The results are presented below.

Table 2: Mean and Standard Deviation of Higher Education Faculty Attitudes Toward the Integration of Digital Learning Technologies and Online Learning

No.	Item	<i>M</i>	<i>SD</i>
1	I believe online learning technologies are essential for the future of higher education	4.2	0.85
2	Online and digital learning improve access to education for a wider range of students	4.0	0.90
3	The use of virtual classrooms enhances student engagement	3.8	0.95
4	Integrating online learning into traditional education presents significant challenges	4.3	0.80
5	I am concerned that digital learning may increase disparities among students with different levels of access to technology	4.5	0.75
6	I feel prepared to use digital tools and online platforms in my teaching	3.6	1.00
7	Online assessments are effective for measuring student learning outcomes	3.7	0.85
8	I believe that online learning will replace many traditional face-to-face classes in the future	3.2	1.10
9	I am confident in adapting my teaching style to include more digital and online elements	3.9	0.95

As shown in Table 2, faculty expressed strong agreement that online learning technologies are essential for the future of higher education (Item 1; $M = 4.2$) and that they improve access for a diverse student population (Item 2; $M = 4.0$). The strongest endorsement was recorded for Item 5 ($M = 4.5$, $SD = 0.75$), indicating high concern that digital learning may widen disparities due to unequal technology access. Faculty also acknowledged substantial challenges in integrating online learning into traditional education (Item 4; $M = 4.3$, $SD = 0.80$).

In contrast, attitudes were more moderate regarding personal preparedness and the effectiveness of online methods. Faculty reported only moderate confidence in adapting their teaching to include digital elements (Item 9; $M = 3.9$, $SD = 0.95$) and lower levels of preparedness to use digital tools (Item 6; $M = 3.6$, $SD = 1.00$). The lowest mean was observed for Item 8 ($M = 3.2$, $SD = 1.10$), suggesting skepticism that online learning is replacing traditional face-to-face classes. Overall, the pattern of standard deviations indicates that faculty agree more consistently on systemic concerns (e.g., disparities, integration challenges) than on personal readiness or future replacement scenarios.

Results of Question 2: How do higher education faculty perceive the shift toward personalized and competency-based learning models?

To address this research question, the mean scores and standard deviations of faculty attitudes toward personalized and competency-based learning models. The results are presented below.

Table 3: Mean and Standard Deviation of Higher Education Faculty Attitudes Toward Personalized and Competency-Based Learning Models

Item	<i>M</i>	<i>SD</i>
10. Personalized learning paths are beneficial for students' academic and career success.	4.1	0.85
11. Competency-based education is a practical approach to higher education.	3.9	0.90
12. Adapting my courses for competency-based education would be challenging.	4.2	0.80
13. I support the idea of students progressing at their own pace.	4.0	0.95
14. Competency-based models make learning more relevant to students' career goals.	4.3	0.75
15. Personalized learning requires more time and resources than traditional teaching.	4.5	0.70
16. I am open to designing assessments based on skills and competencies rather than traditional exams.	3.7	0.90
17. Personalized and competency-based education improves student motivation and engagement.	4.0	0.85
18. I feel adequately trained to implement competency-based education in my teaching.	3.5	1.00

As shown in Table 3, faculty expressed moderately strong support for the perceived benefits of personalized and competency-based learning models. The highest endorsement was recorded for Item 14, which addressed the relevance of competency-based models to students' career goals ($M = 4.3$, $SD = 0.75$). Faculty also agreed that personalized learning paths benefit students' academic and career success (Item 10; $M = 4.1$, $SD = 0.85$) and that these approaches improve student motivation and engagement (Item 17; $M = 4.0$, $SD = 0.85$). Additionally, respondents supported self-paced student progression (Item 13; $M = 4.0$, $SD = 0.95$). While competency-based education was viewed as relevant, its practicality received a slightly lower rating (Item 11; $M = 3.9$, $SD = 0.90$).

Despite this general support, faculty identified substantial implementation challenges. The highest mean among all items in this category was for Item 15 ($M = 4.5$, $SD = 0.70$), indicating strong agreement that personalized learning demands more time and resources than traditional teaching. Respondents also acknowledged the difficulty of adapting courses for competency-based education (Item 12; $M = 4.2$, $SD = 0.80$). Notably, faculty reported low confidence in their training to implement competency-based methods (Item 18; $M = 3.5$, $SD = 1.00$), and openness to skills-based assessments

over traditional exams was only moderate (Item 16; $M = 3.7$, $SD = 0.90$). Standard deviations ranged from 0.70 to 1.00, with the largest variability observed for Item 18 ($SD = 1.00$), indicating considerable disagreement among faculty regarding their perceived preparedness. Taken together, these findings suggest that while faculty recognize the pedagogical and career-related benefits of personalized and competency-based models, significant concerns regarding time, resources, course adaptation, and inadequate training may impede widespread adoption.

Results of Question 3: What are the attitudes of higher education faculty toward multidisciplinary and project-based learning curricula?

To address this research question, the mean scores and standard deviations of faculty attitudes toward multidisciplinary and project-based learning curricula. The results are presented below.

Table 4: Faculty Attitudes Toward Multidisciplinary and Project-Based Learning Curricula

Item	M	SD
19. Interdisciplinary learning helps students understand real-world applications of their knowledge.	4.2	0.80
20. Project-based learning is a valuable approach to higher education.	4.0	0.85
21. I find it challenging to design interdisciplinary courses that are relevant and effective.	4.3	0.75
22. Collaborative, project-based activities are essential for developing students' critical thinking and problem-solving skills.	4.4	0.70
23. I support including interdisciplinary approaches in the curriculum.	4.1	0.80
24. Project-based learning takes too much time away from traditional teaching content.	3.8	0.90
25. I am comfortable facilitating project-based activities in my courses.	3.7	0.95
26. Interdisciplinary teaching aligns well with the future needs of the workforce.	4.3	0.75
27. I believe that project-based learning leads to a deeper understanding and retention of course material.	4.2	0.80

As shown in Table 4, faculty respondents generally expressed positive attitudes toward both multidisciplinary and project-based learning approaches. The strongest endorsement was observed for Item 22, which addressed the role of collaborative, project-based activities in fostering critical thinking and problem-solving skills ($M = 4.4$, $SD = 0.70$). Faculty also strongly agreed that interdisciplinary teaching aligns with future workforce needs (Item 26; $M = 4.3$, $SD = 0.75$) and that interdisciplinary learning supports real-world application of knowledge (Item 19; $M = 4.2$, $SD = 0.80$). Similarly, respondents affirmed that project-based learning contributes to deeper understanding and retention of course material (Item 27; $M = 4.2$, $SD = 0.80$) and voiced general support for including interdisciplinary approaches in the curriculum (Item 23; $M = 4.1$, $SD = 0.80$).

Despite this overall support, faculty also acknowledged notable implementation challenges. The highest mean among all items was recorded for Item 21 ($M = 4.3$, $SD = 0.75$), indicating strong agreement that designing relevant and effective interdisciplinary courses is difficult. Additionally, respondents reported only moderate personal comfort in facilitating project-based activities (Item 25; $M = 3.7$, $SD = 0.95$). There was mild agreement that project-based learning may detract time from traditional content delivery (Item 24; $M = 3.8$, $SD = 0.90$). Taken together, these findings suggest that while faculty hold favorable attitudes toward multidisciplinary and project-based learning in principle, they also recognize practical and pedagogical hurdles that may impede implementation.

Results of Question 4: What challenges do higher education faculty anticipate facing, and what types of institutional support do they deem necessary to implement emerging educational trends effectively?

To address this research question, the mean scores and standard deviations of faculty attitudes toward anticipated challenges and institutional support needed for implementing emerging educational trends. The results are presented below.

Table 5: Anticipated Challenges and Institutional Support Needed for Implementing Emerging Educational Trends

Item	<i>M</i>	<i>SD</i>
28. I am concerned about the ethical and privacy issues related to using AI in higher education.	3.9	0.85
29. My institution provides adequate support for professional development in new teaching methods.	3.5	0.90
30. I am concerned that there is not enough institutional support to integrate emerging technologies into my teaching.	4.0	0.80
31. Administrative processes in my institution hinder the timely adoption of innovative teaching practices.	4.1	0.75
32. Limited access to funding and resources restricts my ability to implement new teaching strategies.	4.2	0.70
33. There is a lack of collaboration between faculty and institutional leaders in driving educational innovation.	4.0	0.85
34. Time constraints make it challenging to engage in training or development for new teaching methods.	4.3	0.80

As shown in Table 5, faculty identified several structural and resource-related barriers as primary obstacles to implementing emerging educational trends. The highest mean was recorded for Item 34 ($M = 4.3$, $SD = 0.80$), indicating strong agreement that time constraints hinder engagement in training or development for new teaching methods. Similarly, limited access to funding and resources was rated as a major restriction (Item 32; $M = 4.2$, $SD = 0.70$), followed by administrative processes that delay adoption of innovative practices (Item 31; $M = 4.1$, $SD = 0.75$). Respondents also expressed concerns about insufficient institutional support for integrating emerging technologies (Item 30; $M = 4.0$, $SD = 0.80$) and a lack of collaboration between faculty and institutional leaders in driving educational innovation (Item 33; $M = 4.0$, $SD = 0.85$). Ethical and privacy issues related to AI use in higher education (Item 28) received moderate agreement ($M = 3.9$, $SD = 0.85$). Regarding existing institutional support for professional development (Item 29), the mean was relatively lower ($M = 3.5$, $SD = 0.90$), suggesting that while some faculty acknowledge such support, it is perceived as insufficient overall.

Taken together, these findings indicate that time, funding, administrative bureaucracy, and inadequate institutional support represent the most significant anticipated challenges. Ethical concerns regarding AI, while present, were rated slightly lower than structural barriers.

Results of the research hypothesis: There are no statistically significant differences in faculty attitudes toward digital transformation, competency-based education, and interdisciplinary learning based on demographic or professional characteristics (e.g., gender, academic rank, or years of experience).

To examine whether faculty perceptions of emerging educational trends differed by gender, academic rank, or years of teaching experience, independent-samples t-tests and one-way analyses of variance (ANOVA) were conducted. The results are presented below.

Table 6: Group Differences in Faculty Perceptions of Emerging Educational Trends

Variable	Group	N	M	SD	Test Statistic	df	p	Effect Size
Gender	Male	38	4.02	0.56	$t = 0.39$	68	.70	$d = 0.09$
	Female	32	3.97	0.60				
Academic Rank	Assistant Professor	29	3.98	0.58	$F = 0.84$	2, 67	.43	$\eta^2 = .02$
	Associate Professor	25	4.01	0.55				
	Professor	16	3.95	0.60				
Teaching Experience	1–5 years	21	3.96	0.59	$F = 1.02$	2, 67	.37	$\eta^2 = .03$
	6–10 years	24	4.03	0.57				
	More than 10 years	25	3.98	0.58				

Results of Independent samples t-tests in Table 6 indicated no statistically significant differences based on gender, $t(68) = 0.39, p = .70$. Similarly, one-way ANOVA analyses revealed no significant differences across academic rank, $F(2, 67) = 0.84, p = .43$, or years of teaching experience, $F(2, 67) = 1.02, p = .37$. Taken together, these results indicate that faculty perceptions are remarkably consistent across demographic and professional backgrounds. The absence of group differences, combined with the uniformly small standard deviations, points to a shared recognition among faculty of both the value and the implementation barriers of emerging educational trends, particularly the need for stronger institutional support, enhanced collaboration, and increased investment in resources and training.

5. Discussion

The findings of this study reveal generally positive attitudes among HE faculty toward emerging pedagogical innovations, while also highlighting several challenges that may hinder their effective implementation. Overall, faculty members appear supportive of educational transformation but emphasize the need for stronger institutional support to translate these positive perceptions into practice. In the Palestinian HE context, these perceptions are shaped not only by global trends but also by persistent structural and contextual constraints that influence teaching and learning conditions.

Faculty responses indicate strong support for the integration of digital learning technologies and online education (Table 2). Participants widely recognized the growing importance of digital tools in shaping the future of HE, as well as their potential to enhance access for diverse student populations to support long-term educational transformation. These findings reflect broader post-pandemic trends, as well as the ongoing unstable political context and disruptions to education, where digital learning environments are increasingly viewed as essential for flexible and inclusive education. However, faculty expressed significant concerns about the potential for digital learning to exacerbate existing technological inequalities. Challenges related to integrating online components with traditional teaching approaches further highlight the persistent issue of the digital divide and the need for equitable technological access. These results are consistent with the findings of Kononova et al. (2024). These challenges are further intensified in Palestine by infrastructural limitations, intermittent connectivity, and uneven access to digital resources, particularly in areas affected by movement restrictions and recurring crises.

Similarly, faculty perceptions of personalized and competency-based learning models (Table 3) were largely favorable. Respondents acknowledged the potential of these approaches to enhance student motivation, support individualized learning pathways, and better align academic outcomes with career and labor market demands. These perspectives reflect the growing emphasis on student-centered learning models that prioritize mastery of competencies rather than time-based progression. Nevertheless, faculty also reported moderate confidence in their training and preparedness to

implement these models, as well as concerns about the additional time and resources required for course redesign and assessment. These results are consistent with the findings of Hurajová et al. (2022). In the Palestinian context, these constraints are compounded by heavy teaching loads, limited institutional funding, and restricted opportunities for continuous professional development, which collectively limit the pace of pedagogical reform.

Faculty attitudes toward multidisciplinary and project-based learning approaches (Table 4) were also strongly positive. Respondents recognized the value of interdisciplinary collaboration and project-based activities in promoting real-world application of knowledge, strengthening critical thinking and problem-solving skills, and enhancing student engagement and retention. These approaches were also perceived as highly relevant for preparing students for the evolving demands of the labor market. However, faculty acknowledged practical challenges in designing interdisciplinary courses and balancing project-based activities with existing curricular requirements. These results are consistent with the findings of VanWyngaarden et al. (2024) and Bakeer et al. (2023). Such challenges are further shaped by rigid program structures and limited flexibility in curriculum redesign within Palestinian HE, which restricts the full integration of innovative pedagogical models.

Across all domains examined in the study, faculty consistently identified several institutional barriers that could hinder the adoption of emerging educational trends (Table 5). The most prominent challenges included time constraints, limited access to funding and resources, administrative barriers, and insufficient collaboration between faculty and institutional leadership. Respondents also reported concerns about inadequate institutional support for professional development in innovative teaching practices, as well as ethical and privacy issues associated with the use of technologies such as artificial intelligence in education. These findings align with existing research suggesting that the successful implementation of educational innovation depends not only on faculty willingness but also on strong institutional commitment, adequate resources, and supportive governance structures. These results are consistent with the findings of VanWyngaarden et al. (2024) and Schneckenberg (2009). These barriers are amplified in the Palestinian HE system due to chronic underfunding, dependency on external aid, and instability resulting from prolonged political and economic constraints, which collectively limit institutional capacity for sustained innovation.

Group differences in faculty perceptions of emerging educational trends were examined by gender (independent-samples t-test) and academic rank (one-way ANOVA). No statistically significant differences were found for either variable (see Table 6), indicating that faculty hold relatively consistent attitudes toward digital transformation, competency-based education, interdisciplinary learning, and the need for institutional support regardless of demographic or professional background. These null findings suggest that enthusiasm for and concerns about emerging educational trends are broadly shared across faculty subgroups, rather than being concentrated among specific demographics. This consistency implies that institutional efforts to address implementation barriers, such as time constraints, funding, and training, should be designed universally rather than targeted narrowly, as faculty across genders and career stages report similar levels of both support and challenge. In the context of Palestinian HE institutions, this shared perspective underscores the potential for unified, institution-wide strategies to foster educational innovation despite resource constraints and political challenges.

Overall, the findings portray faculty as cautiously optimistic toward educational innovation. While they recognize the value of student-centered and technology-enhanced learning approaches, they emphasize the importance of institutional investment in professional development, infrastructure, and collaborative governance. Strengthening these areas could facilitate the effective integration of emerging pedagogical practices while ensuring equitable and sustainable transformation within HE. Such efforts are particularly critical in Palestine, as HE institutions operate under persistent structural pressures that require adaptive, resilient, and context-sensitive reform strategies to ensure continuity, quality, and educational equity.

6. Limitations

This study is limited by the size of its faculty sample and its confinement to Palestinian higher education institutions during the second semester of the 2025 academic year.

7. Conclusion

In conclusion, faculty members in Palestinian higher education institutions demonstrate generally positive attitudes toward emerging educational trends, particularly digital learning integration, competency-based education, and interdisciplinary approaches. They recognize the potential of these innovations to enhance student engagement, improve learning outcomes, and better align higher education with labor market needs. However, significant structural barriers, such as limited resources, inadequate infrastructure, insufficient professional development, and ongoing political and economic constraints, continue to hinder effective implementation.

Achieving sustainable educational transformation, therefore, requires more than faculty willingness. It demands strong institutional support, strategic investment in digital infrastructure and faculty development, and context-sensitive governance. Despite these challenges, the findings highlight a shared readiness for innovation and the importance of resilient strategies that address both global trends and Palestine's unique realities.

8. Recommendations

Based on the findings, several recommendations can support the effective implementation of emerging educational trends in higher education, including:

1. Enhance digital equity: Ensure all students have access to reliable internet, digital devices, and learning technologies through institutional infrastructure investment.
2. Provide targeted faculty training: Develop practical professional development programs that strengthen faculty skills in digital teaching tools, competency-based education, and personalized learning strategies.
3. Promote interdisciplinary collaboration: Encourage cross-departmental course design and joint teaching initiatives that support multidisciplinary and project-based learning.
4. Allocate dedicated resources: Provide sufficient funding and resources to support course redesign, technology integration, and innovative teaching approaches.
5. Reduce administrative barriers: Streamline institutional procedures to allow faculty more time to focus on instructional innovation and student-centered learning.
6. Implement continuous evaluation: Establish systems to regularly assess the effectiveness of digital learning tools and innovative teaching models using feedback from faculty and students.
7. Encourage pedagogical research: Support faculty research on digital learning, personalized education, and interdisciplinary teaching to identify best practices.

8. Future research is recommended to conduct comparative studies across different Palestinian universities to examine how institutional policies, resources, and governance structures influence the adoption of innovative pedagogies.
9. Further studies could employ mixed-methods or longitudinal designs to explore how faculty attitudes and practices toward digital transformation and competency-based education evolve under changing institutional and political conditions.

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