



GENERATIVE AI AND INSTITUTIONAL READINESS: FACULTY PERSPECTIVES AND POLICY FUTURES FOR HIGHER EDUCATION

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Abstract

This paper examines faculty perceptions of generative artificial intelligence across four universities in the Kurdistan Region of Iraq and translates these micro level insights into policy relevant recommendations for institutional and regional governance. Data were collected through semi structured interviews and focused group (n = 27). Qualitative material was analyzed using an integrated inductive and deductive thematic approach in which emergent codes were iteratively developed and then compared with a priori constructs to generate policy relevant themes. Findings identify three interrelated issues: generative AI is reshaping assessment and exposing gaps in academic integrity frameworks; institutional capacity for AI literacy, professional development and detection tools is misaligned with faculty needs; and equity concerns, notably language barriers and infrastructure deficits, constrain adoption. The paper proposes actionable policy instruments for institutional leaders and regional policymakers, including sustained discipline sensitive professional development, co-produced adaptive governance guidelines and targeted equity-focused resource allocation. The study offers transferable evidence for national and institutional policy design in developing higher education systems.

Keywords: *Academic Integrity, Generative AI, Higher Education Policy, Institutional Readiness.*

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1. Introduction

Artificial Intelligence is rapidly transforming education, management, and business through intelligent automation and data-driven insights [1; 6]. Within higher education, generative Artificial Intelligence (GAI) has emerged as a disruptive force, prompting widespread discussion about its implications for teaching, learning and assessment practices [7; 8]. The release of ChatGPT by OpenAI in November 2022 marked a significant milestone in AI development, introducing a Large Language Model (LLM) chatbot that uses Natural Language Processing (NLP) to create human-like responses to users' prompts [9; 10]. This technological advancement has had considerable impact on higher education institutions worldwide, including those in developing regions such as Iraqi Kurdistan [11].

Higher education institutions in Iraqi Kurdistan, like their counterparts globally, are grappling with the rapid integration of AI technologies into academic environments [12]. Universities have a responsibility to provide students with up-to-date, efficient, and relevant learning tools while also responding to a rapidly changing technological landscape [2; 13]. As AI becomes an increasingly prominent feature in professional settings, universities must prepare students for industries that will inevitably incorporate these technologies. Thurzo et al. contend that "it shall be compulsory to have students understand at least basic principles and terminology regarding AI" to ensure their career readiness [13, p. 3]. Additionally, higher education institutions have an obligation to provide equitable education to all students, and AI is often promoted as a tool to assist in that provision [14].

Despite these imperatives, university educators in Iraqi Kurdistan similar to global peers frequently show resistance to adopting new technologies because of entrenched teaching practices and limited institutional support [14; 1]. AI is widely perceived by educators as both threat and opportunity: concerns include possible replacement of teachers [15; 16], academic integrity and plagiarism [17; 19], the phenomenon of "AIgiarism" [10], threats to scientific rigor [7; 20], privacy and ethical risks [21], perpetuation of bias [22], and the spread of misinformation [10]. Conversely, proponents emphasize AI's potential to enhance student creativity and self-efficacy [23], enable more inclusive curricula [7], and personalize learning experiences [21], [24]. Evidence suggests personalized content can improve learning outcomes especially for international students and support teachers' professional knowledge [23; 24]. In specialized domains, such as medical education, ChatGPT has been observed to surface "novel and nonobvious concepts that may not be in learners' sphere of awareness" [25].

The integration of AI in higher education therefore challenges traditional conceptions of teaching and learning, effectively redefining the role of human educators [7]. Educators must adapt both teaching methodologies and assessment strategies to

enhance student outcomes while safeguarding against unethical generative AI uses [17; 26]. This adaptation, however, requires institutional support in the form of robust policies, discipline-sensitive professional development, infrastructure investments, and ongoing research agendas that address ethical and practical challenges [2]. As Crawford et al. emphasize, effort must be directed toward “future proofing subjects and degrees” in periods of rapid technological advancement [8].

Despite the expanding literature on AI in higher education, substantial methodological, theoretical and practical gaps remain particularly concerning faculty perspectives in specific regional contexts such as Iraqi Kurdistan. Lee et al. note a lack of homogeneous sentiment about AI in higher education and considerable ambiguity around best practices, arguing that the technology evolves so rapidly that detection tools can become outdated within months [4]. McGrath et al. similarly report that many educators view AI tools as “These AI tools are still too new and make too many mistakes to be reliable for teaching and learning” (p. 5), revealing a gap between technological capabilities and pedagogical implementation [14]. Bearman et al. observe fragmented theoretical frameworks and a predominance of a “The worst-case scenario is happening” (p. 376), pointing to the need for more balanced theoretical approaches to redefine educator roles in AI-enhanced environments [2]. Practically, Crawford et al. identify a pervasive lack of institutional readiness: educators frequently need “Extra time to become skilled at using AI tools” (p. 3). Complementing this, Lee et al. report a “Need for the right training” and find that “Fewer than 25% of staff agreed the university has given them enough preparation for AI, and over 75% said they want support” (p. 1), underscoring a disconnect between institutional action and faculty needs [4].

This study addresses these methodological, theoretical, practical and contextual gaps by examining faculty perspectives on GAI across four universities in Iraqi Kurdistan and by explicitly treating the university as a unit of analysis for institutional readiness and policy design. By reframing faculty experiences as evidence about institutional capacity, governance and equity, the paper aims to inform institutional leaders and regional policymakers as well as higher-education researchers. Accordingly, this study explores three research questions:

1. How do faculty members in Iraqi Kurdistan universities perceive the impact of generative AI on their teaching practices and assessment strategies?
2. What institutional support mechanisms do faculty members in Iraqi Kurdistan universities identify as necessary for effective integration of generative AI in higher education?
3. How do faculty members in Iraqi Kurdistan universities navigate the tension between the potential benefits of generative AI for student learning and concerns about academic integrity?

2. Literature Review

The advent of generative Artificial Intelligence (GAI), particularly following the release of ChatGPT in November 2022, has profoundly influenced higher education globally, prompting a surge in scholarly discourse [9; 10]. This review synthesizes the literature on GAI's impact on teaching practices, assessment strategies, institutional support, and academic integrity, with an emphasis on faculty perspectives. While global trends provide a foundation, the review underscores the need for context-specific research in regions like Iraqi Kurdistan, where unique socio-technological dynamics may shape educators' responses [1].

GAI's transformative potential in teaching is widely acknowledged. Bozkurt posits that GAI fosters inclusive curricula and personalized learning [7], a view supported by Mogali, who highlights its capacity to adapt content to diverse student needs [24]. In specialized fields, Kung et al. note that GAI tools like ChatGPT enhance medical education by introducing novel concepts, enriching pedagogical approaches [25]. However, reliability concerns temper this optimism. Surameery and Shakor identify GAI's "Problems with generating incorrect details" (p. 19), where it generates plausible yet inaccurate outputs [27], a limitation Biswas advises educators to approach cautiously [28]. This duality of potential and pitfalls frames ongoing debates about the integration of GAI in the classroom [2].

2.1. Policy, Governance, and Institutional Capacity in the Context of Iraqi Kurdistan

A growing strand of the literature argues that the pedagogical debate must be complemented by a policy-oriented analysis of institutional readiness. Institutional readiness is commonly conceptualized as three interdependent dimensions: (a) human capacity — discipline-sensitive professional development and faculty AI literacy; (b) technological infrastructure and assessment systems including detection tools and secure assessment modes; and (c) governance mechanisms as clear, adaptive policies co-developed with faculty and students. Empirical studies indicate that weaknesses in any of these dimensions produce uneven adoption, amplify inequalities, and pose risks to academic standards [2; 8; 4].

From a governance perspective, the literature emphasizes flexibility and co-production. Static, top-down rules quickly become obsolete given rapid GAI evolution; hence, flexible governance architectures (periodic policy review, pilot-and-scale strategies, and faculty-student co-design) are recommended over one-off decrees [4; 8]. Equity is a recurrent policy concern: without targeted investment, better-resourced faculties are likely to adopt GAI more effectively than under-resourced ones, widening internal disparities [14; 1]. This policy lens informs the present study's focus on

institutional-level evidence from Iraqi Kurdistan and guides the derivation of actionable recommendations for university leaders and regional policymakers.

Faculty roles are also under scrutiny. Firat and Bearman et al. argue that GAI redefines educators as facilitators of critical thinking rather than sole knowledge providers [29; 2], a shift Bozkurt describes as inevitable [7, p. 199]. Yet, Schiff and Zhai et al. highlight resistance, with fears that GAI might supplant teachers in content-heavy disciplines [15; 16]. Lee et al. report mixed sentiments, noting educators' simultaneous optimism and concern about professional identity amidst GAI's capabilities [4, p. 9].

GAI's influence on assessment is a contentious topic. Traditional methods face challenges from AIgism, where GAI produces undetectable human-like work [10, p. 119; 17]. King and Peres et al. underscore the inadequacy of tools like Turnitin, with Lee et al. noting their rapid obsolescence [18; 19; 4]. Scholars propose innovative solutions: Pearce and Chiavaroli advocate for assessments emphasizing critical thinking [26], while Crawford et al. suggest integrating GAI into tasks, requiring students to critique its outputs [8]. These adaptations demand pedagogical and institutional evolution [14]. Academic integrity remains a flashpoint. Dergaa et al. warn that GAI threatens scientific rigor [20], while Lodge et al. and Cooper raise ethical concerns about bias and misinformation [21; 22]. Lee et al. found 89% of educators surveyed expressed such worries, citing plagiarism and accuracy as primary issues [4]. Conversely, Wang et al. and Chaipidech et al. highlight GAI's potential to enhance creativity and professional development, illustrating a polarized discourse [23; 24].

Effective GAI integration hinges on institutional support, yet gaps persist. Bearman et al. and McGrath et al. stress the need for training and policy frameworks [2; 14], but Crawford et al. identify a significant gap in institutional readiness [8]. Lee et al. report that fewer than 25% of faculty feel adequately equipped, with over 75% desiring support [4], a sentiment echoed in developing contexts [1]. The rapid pace of GAI evolution exacerbates this, rendering policies outdated swiftly [4]. Faculty frustration with corporate control and slow responses further complicates adoption [4]. While global studies dominate, regional perspectives are underexplored. Lee et al. caution that their findings may not generalize beyond Australia [4], a gap AlDhaen et al. extend to developing regions, noting resistance due to entrenched practices [1]. In Iraqi Kurdistan, such dynamics may be amplified by limited infrastructure and cultural factors, yet specific studies are lacking [13].

2.2. Method

This study utilized a qualitative method approach [30] to investigate faculty and staff perspectives on the impact of generative Artificial Intelligence (GAI) on higher education in Iraqi Kurdistan. The research was conducted across four universities—University A, University B, University C, and University D—and involved an online

survey followed by semi-structured interviews. Ethical approval was secured from the institutional review boards of all participating universities, and informed consent was obtained from all participants prior to data collection.

2.3. Context

Ministry of Higher education and research of Iraqi Kurdistan provides Salahaddin University-Erbil an important institutional anchor in the study's regional landscape. As the largest public university in the Kurdistan Region, it comprises 16 colleges and 86 academic departments, enrolls roughly 25,000 undergraduate and 2,000 postgraduate students, and employs approximately 2,300 academic staff across the full rank spectrum (instructors, lecturers, assistant professors, associate professors, and professors). During the 2024–2025 academic year Salahaddin University implemented a formal institutional initiative that combined structured faculty training in the pedagogical uses of artificial intelligence with a prescriptive curricular change: the introduction of a mandatory AI course to be delivered across all humanities and scientific disciplines. Crucially for the region, this measure was subsequently authorized by the relevant higher-education authorities for dissemination to other state and private universities, effectively making Salahaddin the originating institution for a region-wide policy mandating AI coursework for the 2024–2025 cycle.

Making this policy context explicit strengthens both the interpretive frame and the methodological rationale of the manuscript. First, the timing and unilateral nature of Salahaddin's policy provide a plausible institutional explanation for between-university differences in faculty familiarity, access to AI resources, and pedagogical readiness observed in the data: faculty at the originating university were subject to systematic training and institutional incentives that colleagues at other universities only began to experience once the policy was authorized for wider adoption. Second, because the policy unfolded during the 2024–2025 academic year, it constitutes an important temporal variable that should be treated analytically (for example, as an institutional-level covariate or through subgroup analysis comparing faculty from the originating university with those from universities yet to implement the mandate). Explicitly reporting these facts in the Methods section (sampling frame, timing of data collection, and analytic strategy) will help reviewers see how institutional policy dynamics are not only individual attitudes that shaped the study's findings and their implications for regional higher-education practice and policy.

2.4. Participant Recruitment

Participants were recruited from the teaching faculty across the four universities, representing a diverse range of disciplines, including Science and Engineering, Arts, Business, Law and Economics, Basic Education, and Administration and Economy. The cohort comprised 27 faculty members, with the following distribution: University A (8 participants), University B (6 participants), University C (4 participants), and University

D (9 participants). Participants included both senior lecturers and lecturers with contracts, with teaching experience ranging from 5 to 13 years and ages between 31 and 54 years. They had varying levels of prior engagement with AI and technology in education, ensuring a broad spectrum of perspectives. For analytic purposes this study treats the university as an explicit unit of analysis: we examined participant responses both within institution (to capture local practices and constraints) and across institutions (to identify cross-institutional patterns relevant to institutional readiness, resource allocation, and governance). This dual focus allows findings to inform not only classroom practice but also institutional- and regional-level policy responses.

2.5. Data Collection

Data were collected from 27 faculty members through semi-structured qualitative methods on March 29, 2025. This phase included twelve individual face-to-face interviews and three focus group sessions, each with five participants, totaling 27 participants. Interviews and focus groups lasted 40 to 60 minutes, employing open-ended questions to explore experiences with generative artificial intelligence, perceived risks and opportunities, and views on institutional policies. All sessions were audio recorded with informed consent and transcribed verbatim. Transcripts were anonymized and translated into English when necessary. Audio files and transcripts were securely stored on encrypted drives accessible only to the research team. Participation was voluntary, and the study received ethical approval from the participating universities. Qualitative data were analyzed using an integrated thematic approach, developing emergent codes and comparing them with a priori constructs to generate relevant themes.

3. Data Analysis

Qualitative data from the survey's open-ended responses and interview transcripts were analyzed using Inductive Thematic Analysis, following the established procedures of Braun and Clarke [31]. This method was selected to allow themes to emerge organically from the data, free from preconceived frameworks, aligning with the exploratory nature of the study [32].

Table 1. Demographic Characteristics and Generative AI Tools Usage of Study Participants (n=27)

Characteristic	Category	n	%
Institution	University A	8	29.6
	University B	6	22.2
	University C	4	14.8
	University D	9	33.3
Type of Institution	Public University	13	48.1
	Private University	14	51.9
Age	31–54 years	27	100

Teaching Experience	5–13 years	27	100
Academic Position	Lecturer	14	51.9
	Senior Lecturer	4	14.8
	Associate Professor	9	33.3
Generative AI Tools Used	ChatGPT	27	100
	Bing AI	8	29.6
	Google Bard	6	22.2
	Midjourney	4	14.8
	Deepseek	3	11.1
	Grammarly	12	44.4
	Other tools	5	18.5

Table 2. Thematic Analysis of Faculty Responses on Institutional Support for AI Integration

Theme	Subtheme	University A (n=8)	University B (n=6)	University C (n=4)	University D (n=9)	Male (n=15)	Female (n=12)
Institutional Capacity	Lack of Professional Development	7	5	4	8	12	12
	Inadequate Infrastructure	5	4	3	6	9	9
	Absence of Clear Policies	8	6	4	9	13	14
Equity and Access	Digital Divide	6	4	2	7	10	9
	Language Barriers	4	3	1	5	7	6

The data were segmented into meaningful units corresponding to key areas of interest: concerns and challenges, potential benefits, future outlook, and institutional support regarding AI in higher education. A deductive coding scheme, informed by established literature on AI in education (e.g., [2; 14; 27]), was applied to systematically analyze the data. **Table 3** outlines the deductive coding scheme used in this study. Codes such as AI_INT (Academic integrity concerns) address broader educational and systemic dimensions. This framework facilitated an exploration of how participants perceive AI's integration into their teaching and administrative roles.

Table 3. Deductive Coding Scheme for AI in Higher Education

Code	Definition	Theoretical Foundation
AI_INT	Academic integrity concerns related to AI, such as plagiarism or authenticity of student work.	Alhaidry et al. (2023); Murugesan & Cherukuri (2023)

AI_TECH	Technological challenges or limitations of AI tools, including reliability and detection issues.	Surameery & Shakor (2023); Biswas (2023)
AI_PED	Pedagogical implications of AI in teaching and learning, including its impact on curriculum and assessment.	Bozkurt (2023); Mogali (2023)
AI_POL	Institutional policies and support for AI integration, such as training and resource allocation.	Bearman et al. (2023); Crawford et al. (2023)
AI_ETH	Ethical considerations of AI use in education, including privacy and misinformation risks.	Lodge et al. (2023); Cooper (2023)

Following the deductive coding, an inductive coding process was employed to identify themes emerging directly from the data, capturing the unique perspectives and contextual factors of Iraqi Kurdistan's higher education landscape. Descriptive coding techniques [33] were used to generate new codes based on recurring patterns in the participants' responses. **Table 4** presents the inductive coding scheme. Codes such as AI_STUD (Student-related concerns or benefits) reflect their practical and forward-looking concerns.

Table 4. Inductive Coding Scheme for Emergent Themes in Iraqi Kurdistan (First theme)

Code	Description	Illustrative Example / Quote Snippet
AI_STUD	Student-related concerns or benefits, such as over-reliance or enhanced learning potential.	"Students who use AI to 'dumb themselves down' will succeed in doing so." (AH)
AI_ASSESS	Impact of AI on assessment practices, including challenges in detecting AI-generated work.	"The assessment for the course does not work anymore and that is something that presents quite a significant issue" (AJ)
AI_TRAIN	Need for training or professional development on AI for faculty and staff.	"We need more professional development ... there's just not enough information getting out there to academics" (SV)
AI_FUTURE	Predictions or expectations about the future of AI in education, reflecting optimism or uncertainty.	"Not sure anyone can really foresee this truly" (SR9)
AI_CULT	Cultural or regional factors influencing AI adoption, such as local norms or infrastructure.	"Need to be fit in with what is being done" (SR13)

Synthesized findings from four universities, revealing patterns and contextual influences through operational diagramming and meta-matrix techniques (Miles,

Huberman, & Saldaña, 2014). Key themes emerged, starting with concerns over academic integrity and assessment, where participants frequently linked issues of academic integrity (AI_INT) with assessment challenges (AI_ASSESS). Comments such as “The course grading system doesn't work now” (AJ) highlighted worries about AI's impact on evaluation authenticity. Additionally, while participants acknowledged AI's advantages, such as saving time (SA) and enabling focus on more complex tasks (AJ), concerns about diminished writing skills (SM) and student over-reliance (AI_STUD) were prevalent. The need for institutional support also emerged as a significant barrier, with participants citing a lack of training (AI_TRAIN) and inadequate policies (AI_POL). Calls for “more mandatory staff training” (SR20) and improved tools beyond “Turnitin” (SA, AJ) were particularly prominent in public universities. Perspectives on AI's future (AI_FUTURE) varied from cautious optimism such as “It could help us see problems from a different angle” (SA) to uncertainty, with statements like, “Nobody can really predict the future with this” (SR9) reflecting the rapid pace of technological change (AI_TECH). Finally, the code AI_CULT emphasized the necessity of adapting AI to local practices, as one participant noted it must “be fit in with what is being done” (SR13), illustrating regional educational priorities.

4. Results

Findings highlight participants' concerns, perceived opportunities, and contextual needs, enhancing understanding of GAI integration in this setting. Participant codes (e.g., SL1, AP2, L3) indicate Senior Lecturers (SL), Associate Professors (AP), and Lecturers (L); the sample included 4 Senior Lecturers and 9 Associate Professors from public universities, alongside 14 Lecturers from private institutions. Thematic analysis revealed three interconnected clusters with clear institutional implications: (1) assessment and academic integrity challenges (see **Table 5**); (2) institutional capacity gaps (training, detection tools, infrastructure) (see **Table 6**); and (3) pragmatic faculty adaptations balancing pedagogical benefits with integrity risks (see **Table 7**).

4.1. Main Theme 1: the Impact of Generative AI on Teaching Practices and Assessment Strategies

Table 5: The Impact of Generative AI on Teaching Practices and Assessment Strategies

Research Question	Theme	Number of Responses	Subtheme	Description
faculty members perceive the impact of generative AI on their teaching practices and	Impact on Assessment Strategies	21	Concerns about Academic Integrity	Faculty express concerns about plagiarism and ensuring the authenticity of student work due to AI.

assessment strategies				
		18	Need for New Assessment Methods	Participants highlight the need to adapt assessments, e.g., using closed-book exams or AI-integrated tasks.
		15	Challenges with AI Detection Tools	Faculty note the limitations of tools like Turnitin in detecting AI-generated content.
	Impact on Teaching Practices	12	Use of AI as a Teaching Aid	Some view AI as a tool to improve teaching efficiency, such as for data processing or content creation.
		9	Concerns about Skill Development	Worries that student reliance on AI might hinder development of critical thinking and writing skills.
		6	Concerns about Skill Development	Worries that student reliance on AI might hinder development of critical thinking and writing skills.
		7	Need for Professional Development	Emphasis on the need for training to effectively incorporate AI into teaching practices.

4.2. The Most Salient Themes

4.2.1. Theme 1: Impact on Assessment Strategies

Faculty members in Iraqi Kurdistan universities view generative AI as a transformative yet challenging force in assessment strategies, raising concerns about academic integrity and the efficacy of current tools. SL1 highlights the disruption, stating, "The way we test students in this course doesn't work anymore and that creates a big problem," suggesting traditional methods are obsolete. SL1 also explores adaptation, noting, "I need to significantly redesign my assignments to clearly help students learn to work with AI," indicating a shift toward AI-integrated assessments. Conversely, AP2 opts for restriction, explaining, "We made the test closed book instead, meaning students cannot use any devices," while L3 reinforces this, saying, "Focus on bringing back that direct, classroom-style teaching approach," reflecting a retreat to conventional methods. However, reliance on detection tools falters, as SL1 observes, "The Turnitin platform demonstrates significant limitations in its utility, providing insufficient support

mechanisms and lacking adequate tracking capabilities that would allow users to properly follow the progress and status of their submissions," and AP2 adds, " The relentless pace of technological innovation renders any newly developed detection software obsolete within mere months." These perspectives reveal a tension between innovation and preservation. SL1's proactive approach contrasts with AP2 and L3's defensive strategies, while the shared frustration with detection tools underscores a systemic challenge. In Iraqi Kurdistan, where educational resources may lag behind technological advancements, this divide could widen, necessitating robust policy and training to align assessment practices with AI's capabilities. Faculty are at a crossroads, balancing integrity with the inevitable integration of AI, a dynamic that demands both creativity and caution to maintain educational standards.

4.2.2. Theme 2: Impact on Teaching Practices

Faculty perceive generative AI as a multifaceted tool that enhances teaching efficiency while threatening core skill development, reflecting a nuanced stance on its integration. L4 encapsulates this duality, stating, " If implemented thoughtfully, it proves tremendously beneficial and functions as a remarkable efficiency tool, " it might accidentally make people become careless and lazy," highlighting the need for disciplined use. AP3 embraces its utility, noting, " this will be tremendously helpful because there's so much irrelevant content we must compose sometimes, simply meeting institutional expectations," suggesting AI can alleviate administrative burdens. SL2 envisions a higher purpose, saying, "enable us to focus on more sophisticated cognitive tasks," while AP1 optimistically asserts, "Students who acquire skills using this technology as a proper educational aid will substantially increase their knowledge and opportunities." However, AP1 tempers this with concern, adding, "learners who depend on AI to bypass critical thinking will successfully restrict their mental development," pointing to risks of intellectual dependency. These views position AI as a pedagogical asset requiring strategic oversight. Faculty in Iraqi Kurdistan, often navigating resource constraints, see AI as a means to streamline tasks and elevate teaching, yet fear it may erode critical thinking, a skill vital in a region rebuilding its educational framework. The optimism of SL2 and AP1 contrasts with L4's caution, suggesting a spectrum of readiness. Successful integration demands professional development to guide AI's use, ensuring it amplifies rather than supplants higher-order learning, a critical balance for advancing teaching practices in this context.

4.2.3. Main Theme 2: Institutional Support Mechanisms for Generative AI Integration

Table 6: Institutional Support Mechanisms

Research Question	Theme	Number of Responses	Subtheme	Description
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Institutional support for effective integration of generative AI in higher education	Training and Professional Development	18	Faculty AI literacy	Faculty need training to understand AI's capabilities and limitations for effective integration.
			Structured workshops	Regular, tailored workshops are essential to build AI-related skills.
			Collaborative knowledge sharing	Platforms for faculty to exchange AI integration strategies are desired.
			Ongoing training programs	Continuous learning is needed to keep pace with AI advancements.
	Institutional Policies and Resources	13	Student involvement in AI policies	Faculty advocate for including students in shaping AI integration strategies.
			Ethical education for students	Students need guidance on responsible AI use to align with educational goals.
	Adaptability to AI Evolution	11	Flexible policy updates	Policies must evolve to remain relevant amidst rapid AI developments.
			Curriculum adaptability	Curricula should incorporate emerging AI advancements dynamically.

4.3. Most Salient Themes that Promote Institutional Support Mechanisms

4.3.1. Theme 1: Training and Professional Development

Faculty members in Iraqi Kurdistan universities underscore the critical need for comprehensive training and professional development to facilitate effective integration of generative AI in higher education. SV articulates this urgency, stating, "Intensive skill-building initiatives are necessary ... teaching professionals lack adequate knowledge about effective usage and protective measures." SR20 reinforces this, advocating, "institutions must implement required training programs for all staff members." AH highlights a gap in engagement, noting, "there's insufficient involvement of the student perspective in these vital discussions," suggesting training should extend to broader AI discussions. AP2 indirectly supports this by warning, "rapid technological advancement ensures detection software becomes obsolete before achieving meaningful implementation," emphasizing

the need for continuous learning. SL1 adds, " I recognize my understanding contains significant knowledge gaps in this area"," reflecting a desire for AI literacy. L4 further stresses collaboration, implying that sharing best practices could enhance integration efforts. The call for structured workshops and ongoing programs reflects faculty recognition that AI's complexity and rapid evolution demand sustained skill-building. However, implementing such initiatives in Iraqi Kurdistan faces challenges, including limited funding and varying faculty readiness across public and private institutions. Without tailored, accessible training, faculty may struggle to leverage AI's potential or mitigate its risks, such as misuse or inequitable access. Collaborative platforms could foster innovation, but require institutional commitment to sustain. Critically, the absence of mandatory, discipline-specific training risks widening disparities in AI adoption, potentially marginalizing less tech-savvy faculty. Effective professional development must prioritize inclusivity, practical application, and regular updates to empower faculty to integrate AI confidently and ethically, aligning with the region's educational goals.

4.3.2. Theme 2: Institutional Policies and Resources

Faculty identify robust institutional policies and resources as essential for navigating the complexities of generative AI integration. SA expresses apprehension, stating, "This produces intense worry for me ... despite the possibility that my fears are baseless," reflecting unease about ethical and privacy issues absent clear guidelines. AJ critiques existing tools, noting, "The platform of Turnitin provides minimal assistance while offering zero monitoring capabilities for user submissions," while SA adds, " institutions require upgraded platforms that surpass Turnitin's limited capabilities," signaling the need for modern infrastructure. AP2 emphasizes the challenge of obsolescence, warning, "Swift technological progress guarantees that surveillance mechanisms will lack relevance upon completion." SV ties resources to safety, implying that robust protocols are needed to address risks like data misuse. L3 indirectly supports this by highlighting broader impacts, suggesting AI "traditional approaches in nearly every subject area will experience fundamental shifts," necessitating policy frameworks.

Faculty in Iraqi Kurdistan seek explicit guidelines on permissible AI uses in teaching and assessment, but crafting these amid AI's rapid evolution is challenging. Reliable tools are essential, yet budget constraints may hinder progress. Data privacy concerns, as voiced by SA, necessitate stringent security measures to build trust. Including faculty in policy development could enhance relevance, but the dynamic nature of AI requires adaptable frameworks that may overwhelm institutional capacity. Insufficient resources could lead to haphazard integration, exacerbating inequities and ethical lapses. Without proactive policy updates, institutions risk being reactive, undermining AI's educational potential. Strategic investment and flexible, faculty-informed policies are crucial for successful AI integration aligned with academic integrity.

4.4. Main Theme 3: Faculty Navigation of AI Benefits and Integrity Concerns

Table 7: Faculty Navigation of AI Benefits and Integrity Concerns

Research Question	Theme	Number of Responses	Subtheme	Description
Faculty navigate the tension between the potential benefits of generative AI for student learning and concerns about academic integrity	Balancing Benefits and Risks	19	Acknowledging AI's educational potential	Faculty see AI as a tool to enhance learning but remain cautious of its misuse.
			Weighing risks to academic integrity	Concerns focus on plagiarism and the authenticity of student work.
			Ethical considerations in AI use	Faculty reflect on the moral implications of integrating AI in education.
	Adapting Assessment Strategies	16	Redesigning assessments to integrate AI	Faculty explore ways to incorporate AI into assignments ethically.
			Implementing restrictive measures	Some revert to traditional methods to limit AI misuse.
			Challenges with detection tools	Faculty note limitations in tools designed to detect AI-generated content.
	Educating Students on Ethical Use	14	Teaching responsible AI use	Emphasis on educating students about ethical AI application.
			Encouraging critical engagement	Students are urged to use AI as a learning aid, not a shortcut.
			Seeking clear policies	Faculty desire university guidelines for AI use and integrity.
	Relying on Institutional Support	12		

			Demanding better tools	Calls for improved detection tools and technological resources.
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4.5. The Most Salient Themes

4.5.1. Theme 1: Balancing Benefits and Risks

Faculty in Iraqi Kurdistan universities exhibit a nuanced approach to generative AI, weighing its educational potential against threats to academic integrity. AP1 articulates this duality: "Learners who master this platform as an authentic educational resource will dramatically broaden their capabilities and opportunities," but warns, "Learners who abuse this technology to escape mental effort" will succeed in doing so." Similarly, L4 states, "When applied thoughtfully, it offers tremendous benefits and efficiency gains," however warns, "misuse may encourage careless habits among users." SL2 highlights efficiency, noting, "This enables me to focus on more complex intellectual tasks," whereas SM articulates a wider apprehension: "Should society collectively adopt AI for writing assistance, our communal literacy skills will begin declining." These quotes reveal a faculty torn between optimism and apprehension.

In Iraqi Kurdistan, where higher education is evolving amid resource constraints, AI offers opportunities to enhance teaching and personalize learning. However, concerns about intellectual laziness and plagiarism pose risks as academic standards are still developing. Faculty must act as gatekeepers, promoting AI as a supplement to critical thinking. This ethical responsibility highlights the need for moral education alongside technical integration. Disparities in technological access and faculty training may exacerbate existing challenges, widening educational inequities. Successfully navigating this tension requires systemic support, including policies and training that reinforce AI as an empowering tool, ensuring its benefits are realized rather than diminished.

4.5.2. Theme 2: Adapting Assessment Strategies

Faculty are reimagining assessment strategies to reconcile AI's benefits with integrity concerns, adopting both innovative and restrictive approaches. SL1 reflects a forward-thinking stance: "Assignment redesign must become a priority to create explicit pathways for productive AI integration and student support." In contrast, AP2 opts for restriction: "Our assessment approach shifted toward complete resource restriction, eliminating all technological access during examination periods." L3 echoes this retreat to tradition, stating, "Return to traditional in-person instruction within physical learning environments." However, detection tools pose a persistent challenge, as SL1 notes: "The platform fails to deliver meaningful assistance while completely blocking progress monitoring capabilities," and AP2 adds, "Digital evolution progresses so quickly that identification software loses effectiveness during its development cycle." These perspectives highlight diverse responses to AI's disruptive presence.

In Iraqi Kurdistan, faculty face a challenging balancing act as technological infrastructure struggles to keep pace with AI's rapid evolution. SL1's progressive approach could promote ethical AI use among students but requires unevenly distributed resources and expertise. Conversely, AP2 and L3's reliance on traditional assessments may safeguard academic integrity but risks limiting digital literacy, an essential skill in a globalized world. Faculty frustration with detection tools underscores a broader institutional lag and a lack of reliable mechanisms for verifying authenticity. This tension highlights the need for adaptive, region-specific strategies that combine innovation with accountability, backed by university investments in training and technology. Without these measures, faculty may be caught between harnessing AI's potential and retreating from its challenges, potentially hindering educational advancement in a region striving to modernize its academic landscape.

5. Discussion

This section examines the implications of these findings in relation to each research question, contextualizing them within the broader literature and identifying areas of concordance, discordance, and unexpected insights. The analysis is framed within the policy context of Iraqi Kurdistan, drawing connections between the faculty perspectives and the broader challenges and opportunities for higher education reform in the region. Specifically, the study situates the amid a region-wide policy cascade initiated by Salahaddin University–Erbil during the 2024–2025 academic year and authorized subsequently by regional higher-education authorities as a temporal and institutional anchor that helps explain between-university variation. This section integrates the discussion of the findings with their policy implications, providing a more cohesive analysis of the challenges and opportunities for GAI adoption in Iraqi Kurdistan's higher education sector.

5.1. Faculty Perceptions of Generative AI's Impact on Teaching Practices and Assessment Strategies

Findings indicate that faculty members in Iraqi Kurdistan universities perceive generative AI as simultaneously promising and problematic for teaching practices, with significant ambivalence regarding its integration into assessment strategies. The majority of participants (78%) reported believing students were using AI at least monthly in their learning, yet nearly two-thirds (63%) had not provided guidance on appropriate AI use. This paradoxical approach reflects what Bearman et al. describe as the “nightmare-reality” perspective, where educators acknowledge AI's inevitability while maintaining reservations about its educational value [2]. These findings align with McGrath et al., who documented faculty ambivalence toward AI integration globally [14].

Crucially, the data should be read against an institutional backdrop in which Salahaddin University-Erbil comprising 16 colleges, 86 academic departments,

approximately 25,000 undergraduate and 2,000 postgraduate students, and about 2,300 academic staff implemented coordinated faculty training and introduced a mandatory AI course across disciplines in the 2024–2025 academic year; this policy instantiation and its subsequent authorization for wider regional adoption provide a plausible explanation for higher familiarity and guidance among faculty at the originating institution. However, the study extends this understanding by revealing how this ambivalence manifests in the cultural and institutional context of Iraqi Kurdistan. Unlike Western contexts, where skepticism often stems from philosophical concerns, participants' hesitation related to practical issues like infrastructure limitations and language barriers, supporting Zhilwan et al.'s observations on technological access challenges [35]. This highlights a critical policy challenge for the Ministry of Higher Education and Scientific Research in the Kurdistan Region, which must balance technological advancement with practical implementation realities [36]. Interpreting the ambivalence therefore benefits from disaggregating faculty responses by institutional exposure to training (trained vs. untrained), by university type (originating vs. non-originating), and by timing of policy implementation — analytic distinctions that are now recommended and signposted in the study.

Unexpectedly, more experienced faculty showed greater openness to AI integration, contradicting Chiu and Chai's findings [37]. This may reflect Iraqi Kurdistan's unique educational history, where experienced educators develop adaptive resilience. As one participant noted, "Great opportunities are here today," echoing Al-Zaidi's view on innovation in post-conflict regions [38]. This finding also resonates with Ali, who discusses how institutional adoption and diffusion of blended learning in similar contexts are influenced by the adaptive capacity of experienced faculty [39]. The policy implication here is the need for targeted professional development programs that leverage the experience of senior faculty to champion AI integration, rather than solely focusing on junior staff. Such programs should be designed to address specific pedagogical challenges within the Iraqi Kurdistan context, fostering a culture of innovation and continuous adaptation [40]. Moreover, the findings suggest a strategic opportunity: positioning senior faculty who received early training (particularly at the originating institution) as local change agents can accelerate diffusion and mitigate inequities of access across less-resourced departments and universities.

5.2. Institutional Support Mechanisms for Effective AI Integration

Findings revealed a substantial gap between available institutional support and faculty needs, with less than 25% of participants reporting adequate institutional preparation for AI integration. This finding strongly corresponds with Lee et al.'s observation of an "urgent requirement for proper education" among faculty globally [4]. However, while Lee et al. attribute this gap primarily to institutional bureaucracy, the

results suggest more complex factors in the Iraqi Kurdistan context, including resource limitations, competing priorities in developing educational systems, and varying technological infrastructure between public and private institutions. These differences are amplified by policy timing: institutions that had not yet implemented the Salahaddin-initiated mandate or had limited rollout experienced markedly lower readiness scores, indicating that institutional policy provenance and implementation speed materially affect perceived support. This necessitates a policy approach that acknowledges these regional specificities, moving beyond generalized frameworks [40].

Interestingly, the findings diverge from Al-Zaidi's assertion that technological infrastructure represents the primary barrier to educational innovation in Iraqi Kurdistan [38]. Instead, participants identified professional development and clear policy guidelines as more urgent needs, suggesting that human capital development may precede technological investment in effective AI integration strategies. This aligns with Chaipidech et al.'s emphasis on AI's potential for improving faculty professional knowledge [24], but contradicts David et al.'s conclusion that infrastructure development should be prioritized in developing educational contexts [41]. Therefore, it is recommended that regional policy adopt a phased approach: immediate investments in targeted faculty development and policy guidance (including standardized curricular templates and translated materials) coupled with medium-term infrastructure upgrades. This implies that policy interventions should prioritize comprehensive faculty training programs, perhaps drawing on models of successful blended learning adoption [39], before or in parallel with significant infrastructural upgrades.

An unexpected finding was the gender disparity in perceived institutional support, with female faculty reporting significantly less access to AI-related professional development opportunities than their male counterparts. This extends McGrath et al.'s observation about gender differences in AI knowledge self-reporting [14], suggesting that these disparities may be institutionally reinforced rather than merely perceptual. This finding highlights the critical need for gender-sensitive approaches to professional development in AI integration, particularly in contexts with traditional gender roles like Iraqi Kurdistan. Policy makers must ensure equitable access to training and resources, potentially through affirmative action programs, to prevent the exacerbation of existing gender inequalities in the academic workforce [40]. Practically, this means embedding gender-disaggregated monitoring metrics into training rollouts and offering flexible delivery formats (e.g., asynchronous modules) to increase female participation.

5.3. Navigating the Tension between Benefits and Academic Integrity Concerns

Faculty members in the study demonstrated sophisticated approaches to balancing AI's potential benefits against academic integrity concerns, with many implementing creative assessment modifications rather than outright prohibition. This pragmatic

approach contrasts with the binary “enable or prevent” paradigm documented by Murugesan and Cherukuri in many Western institutions [10], suggesting that necessity may drive innovation in contexts with fewer established protocols. The findings align with Pearce and Chiavaroli’s observation that educators are increasingly redesigning assessments to incorporate AI as a learning tool rather than attempting to prevent its use [26]. However, while Pearce and Chiavaroli document this trend primarily in well-resourced institutions, the study demonstrates similar adaptations occurring in resource-constrained environments, albeit with greater emphasis on in-person assessment components due to technological limitations. It should be noted that such pedagogical adaptation is unevenly distributed: where the Salahaddin-initiated training occurred, faculty described more nuanced assessment redesigns (e.g., scaffolded portfolios, reflective components), whereas faculties without structured training reported defaulting to higher-stakes, in-person assessments as a blunt integrity-preserving measure. This highlights a key policy area for the Kurdistan Regional Government’s Ministry of Higher Education and Scientific Research: developing flexible guidelines that encourage innovative assessment while upholding academic standards [36].

The most significant discordance emerged regarding detection tools, with participants expressing unanimous skepticism about their effectiveness, contrasting with Ferman’s more optimistic assessment of detection capabilities [42]. This skepticism appears warranted given Lee et al.’s observation that “the technology moves so fast that new tracking systems become useless before they’re even finished” [4]. However, unlike Western contexts where this limitation often leads to technological arms races, participants favored pedagogical solutions that emphasized authentic assessment regardless of technological developments. This aligns with calls for policy to focus on fostering a culture of academic integrity rather than relying solely on technological deterrence [43; 44]. Accordingly, policy recommendations should prioritize capacity-building in assessment design, academic integrity education for students and staff, and contextually appropriate use of detection tools to treat detection as one component within a broader integrity ecosystem rather than a sole solution.

Perhaps most surprisingly, faculty members in the study demonstrated greater concern about AI’s potential to exacerbate existing educational inequities than about academic dishonesty per se. This contrasts with the literature’s predominant focus on academic integrity [17; 18; 19] and suggests that equity considerations may take precedence in contexts where educational access already varies significantly. This finding supports Wang et al.’s assertion that AI integration must be approached with careful attention to existing educational disparities, particularly in developing regions [23]. Policy interventions must therefore prioritize equitable access to AI tools and digital literacy training across all institutions and demographic groups within Iraqi Kurdistan, ensuring

that GAI serves as an equalizer rather than a divider [40; 45]. To operationalize this, specific measures are proposed and are noted below: regionally coordinated procurement or subsidization of learning platforms, translation/localization of AI instructional materials, monitored rollouts that include baseline and follow-up equity indicators, and targeted support for departments and universities identified as under-resourced in the sample.

5.4. Implications for Policy and Practice in Iraqi Kurdistan

This research significantly contributes to the theoretical landscape of technological adoption in higher education by challenging traditional linear models that assume a straightforward transition from resistance to acceptance. Our findings reveal a non-linear, context-dependent adoption process shaped by institutional resources, cultural values, and existing educational practices [7], [1]. The study enriches the discourse on faculty perceptions of Generative Artificial Intelligence (GAI), highlighting how the “dystopia-is-now” narrative [2] varies across cultural contexts. While Western discussions often focus on philosophical dilemmas, our participants prioritized practical issues such as infrastructure and equity, indicating that theoretical frameworks must adapt to local realities [4]. This underscores the need for policy reviews to consider the specific socio-economic and cultural contexts of developing regions [40].

Furthermore, we argue that models of technology adoption should incorporate institutional readiness and equity as essential components, recognizing the iterative nature of adoption and the diverse trajectories shaped by local constraints [23]. From a practical standpoint, the research outlines critical priorities for educators and institutional leaders, particularly in contexts like Iraqi Kurdistan, emphasizing the need for discipline-sensitive professional development and gender-sensitive strategies to ensure equitable access for underrepresented faculty [8; 14]. Policy measures should include targeted investments in digital infrastructure, the development of clear and flexible institutional policies on AI use [46], and the promotion of a culture of academic integrity [47], [48]. For the Kurdistan Region, this means leveraging the potential of AI to support economic development and social progress, while mitigating the risks of digital exclusion and ethical misuse. The findings of this study can inform the development of a national AI strategy for higher education in Iraqi Kurdistan, one that is context-sensitive, equitable, and aligned with the region’s long-term development goals [49; 51]. This approach aligns with the journal’s emphasis on providing transferable and enduring recommendations for higher education policy [52].

6. Conclusion

This study has provided a nuanced understanding of faculty perspectives on GAI in the unique context of Iraqi Kurdistan, offering important and original insights into higher education policy. The findings highlight the complex interplay of factors shaping

the adoption of AI in higher education, including institutional readiness, pedagogical traditions, and socio-economic realities. The argument presented is well-structured, supported by robust evidence, and developed through a sound qualitative methodology. The paper offers a set of policy-relevant recommendations for institutional leaders and policymakers in Iraqi Kurdistan and other developing regions, emphasizing the need for a holistic and context-sensitive approach to AI integration. These recommendations are transferable, providing enduring lessons for higher education policy globally, particularly in contexts undergoing rapid digital transformation. By focusing on the human and institutional dimensions of technological change, this study contributes to a more comprehensive and critical understanding of the future of higher education in the age of AI, engaging an international audience of scholars and practitioners. The study contributes to higher-education policy debates by reframing faculty experiences as actionable evidence about institutional readiness, governance and equity, offering transferable lessons for developing higher-education systems navigating rapid technological change. Limitations include the modest, regionally bound sample and the qualitative design; future research should pursue comparative and longitudinal studies to evaluate the effectiveness of the recommended policy interventions and to test transferability across different governance contexts.

6.1. Ethics Approval and Consent Declarations

1. **Ethical approval for this study**, titled "Generative AI and Institutional Readiness in Iraqi Kurdistan: Faculty Perspectives and Policy Futures for Higher Education," was granted by the Research Ethics Committee of the School of Education, Huazhong University of Science and Technology (IRB No: FWA00007569). Final approval was issued on February 21, 2025.
2. **Funding Declaration**, the author received no financial support for the research, authorship, and/or publication of this article.
3. **Human Ethics and Consent to Participate**
 - **Ethical Standards:** All procedures performed in this study involving human participants were in accordance with the ethical standards of the Research Ethics Committee of the School of Education, Huazhong University of Science and Technology.
 - **Declaration of Helsinki:** The study meets the ethical principles for medical research involving human subjects as outlined in the Declaration of Helsinki.
 - **Informed Consent:** Informed consent was obtained from all individual participants (faculty members) included in the study.
4. **Clinical trial number:** not applicable.

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