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Ethical Generative AI Integration in English for Academic Purposes within Higher Education: A Mixed-Methods Study

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Abstract

60% of higher education institutions worldwide reported that their faculty used generative artificial intelligence tools in teaching. However, fewer than 15% had implemented formal ethical guidelines. This issue underscores the importance of equipping English for Academic Purposes educators in higher education to utilise artificial intelligence effectively while maintaining academic integrity, transparency, and equity. This study addressed the lack of evidence from Global South contexts, the shortage of field-tested professional development models, and the limited integration of technical and ethical training. Guided by Mezirow's Transformative Learning Theory and established ethical decision-making frameworks in educational technology, the study designed, implemented, and evaluated a GenAI-integrated Professional Development program that embeds ethical reasoning within a multicultural Global South institution. A convergent mixed-methods approach engaged 97 higher education educators in quantitative testing and 15 in qualitative interviews. Original instruments, including a Scenario Rubric, Artefact Rubric, and engagement index, measured pre- and post-program changes. Quantitative results showed significant gains in ethical awareness ($d = 0.93$) and digital andragogical competence, supported by high inter-rater reliability. Qualitative findings confirmed challenges such as plagiarism and student overreliance on artificial intelligence, and revealed an unexpected barrier: reconciling institutional policy gaps with personal ethical values. Recommendations include embedding artificial intelligence policy literacy into professional development, fostering peer-led communities of practice, and creating shared resources on artificial intelligence. The professional development model can be adapted for use in other contexts, and future research should investigate its scalability.

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Practitioner Notes

1. Case-based GenAI professional development can transform artificial intelligence -related anxiety into confident and ethical teaching.
2. Hands-on artificial intelligence work with ethical reflection boosts teacher self-efficacy and readiness.
3. Artificial intelligence use disclosure guidelines shift plagiarism concerns to discussions about integrity.
4. Shared artificial intelligence access reduces inequity and supports fair assessment.

Keywords

Artificial intelligence, academic integrity, professional development, and ethical decision making

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Introduction

By 2024, over 60 per cent of higher education institutions worldwide reported that their faculty were using generative artificial intelligence (GenAI) tools in teaching. However, fewer than 15 per cent had implemented formal ethical guidelines to govern such use (UNESCO, 2023). This rapid adoption has introduced both transformative opportunities and profound ethical tensions within international learning and teaching environments. GenAI promises enhanced instructional design, automated administrative processes, and personalized learning pathways; however, it also raises urgent concerns about academic integrity, authorship, transparency, bias, and equitable access (Lim et al., 2023; Qaralleh & Ahmed, 2025). In many institutions, the absence of coherent artificial intelligence governance frameworks has left educators navigating complex pedagogical and ethical dilemmas without clear guidance.

These tensions are particularly pronounced in language-intensive disciplines such as English for Academic Purposes, where instructors are responsible not only for language development but also for modelling research ethics, authorship integrity, and responsible digital scholarship. In contexts marked by policy ambiguity and infrastructural inequality, educators are often required to make high-stakes decisions about the appropriate integration of artificial intelligence into assessment and classroom practice. Concerns persist that generative artificial intelligence may blur boundaries between assistance and misconduct, especially given ongoing limitations in detection tools (Alimardani & Jane, 2023). Without structured preparation, well-intentioned educators may inadvertently reinforce inequities or normalize ethically ambiguous practices (Diaz, 2024). Calls within the higher education literature increasingly emphasize the need to reposition educators as ethical decision-makers rather than passive adopters of emerging technologies (Bond et al., 2023).

Despite a growing body of research on artificial intelligence in education, several gaps remain. Empirical work is predominantly situated in Global North contexts, overlooking how multilingual realities, structural inequities, and evolving policy environments shape the integration of artificial intelligence in the Global South (Jin et al., 2024; Nyaaba, 2024). Field-tested professional development models that systematically combine technical GenAI skills with structured ethical reasoning remain scarce, particularly in higher education language contexts. Furthermore, educators from South Asia, Central Asia, the Gulf, and Africa remain underrepresented in the literature (Okoye et al., 2023). Limited empirical evidence exists on how professional development interventions can cultivate both ethical awareness and digital andragogical competence while addressing institutional policy ambiguity. In response to these international learning and teaching challenges, the following research questions guide the inquiry:

> **Research Question 1.** How do generative artificial intelligence–integrated professional development programs influence higher education practitioners' ethical awareness and digital andragogical competencies, particularly in language-intensive disciplines such as English for Academic Purposes?
>
> **Research Question 2.** What ethical dilemmas do higher education educators encounter when integrating generative artificial intelligence into their instructional practices?
>
> **Research Question 3.** How can higher education institutions effectively address or navigate the ethical challenges associated with integrating generative artificial intelligence into professional development programs?

The remainder of this paper is organized as follows. The literature review synthesizes scholarship on ethical challenges, institutional policy gaps, educator agency, and professional development approaches related to generative artificial intelligence in higher education. The methodology section outlines the research design, participants, instruments, and analytical procedures. The results section presents integrated quantitative and qualitative findings aligned with the research questions. The discussion interprets these findings in relation to existing scholarship and institutional practice, followed by a conclusion that outlines implications and directions for future research.

The significance of this inquiry lies in advancing ethical integration of artificial intelligence into higher education learning and teaching. By linking transformative learning theory with structured ethical reasoning in professional development contexts, the research contributes to theoretical discussions of educator agency and digital andragogy. It also addresses policy and practice needs in underrepresented Global South contexts, offering insights that may inform context-sensitive governance frameworks, professional learning design, and institutional strategy. In doing so, the work supports broader international efforts to balance innovation with academic integrity, equity, and responsible technological adoption in higher education.

Literature

GenAI is increasingly being implemented in higher education settings and has the potential to bring many benefits but also raise significant ethical issues, such as academic dishonesty, bias, transparency, and fairness, as well as pedagogical implications. Teachers are at the forefront of GenAI adoption and are critical to the extent to which GenAI is used to facilitate or subvert these issues. Their ability to do so will be influenced by the degree of support (or hindrance) they receive from their institutions. In the Global South, issues of inequality, such as the digital divide and the lack of policies, can make them even more pertinent, and there is a particular need for strategies that promote greater equity by building capacity. This review addresses four targeted sub-themes in the recent literature (mainly 2023–2025) with a common focus on issues pertinent to higher education more broadly and a specific focus on English for Academic Purposes as a content area, given the heavy language involved. The review is organized to address the current lack of a professional development model on ethical issues in GenAI and to provide a research base in the Global South, where this is also lacking. It is framed by Mezirow's Transformative Learning Theory (2002), which provides a theoretical framework for transformative reflection and change. It aims to contextualize its specific, localized findings within the complex systems that operate in higher education and to synthesize them in a way that will be relevant to higher education more broadly. In this way, it attempts to counter the trend towards 'epistemic parochialism', a key limitation of research in the age of artificial intelligence (Crawford, 2025), the production of small-scale, decontextualized, localized studies that make little contribution to the wider body of knowledge. The sub-themes and the research questions that they address are outlined in Table 1, along with their contribution to the higher education literature.

Table 1

Mapping Literature Review Sub-Themes to Research Questions

Literature Review Sub-Theme	Related Research Question(s)	Contribution to Higher Education Knowledge (per Crawford, 2025)
Ethical Challenges and Dilemmas in GenAI Integration	RQ1, RQ2	Synthesizes cross-disciplinary dilemmas for transferable ethical frameworks in higher education
Institutional Policy Gaps, Equity, and Access	RQ2, RQ3	Situates Global South cases within global higher education systems to advance policy-relevant insights
Educator Agency, Advocacy, and Bottom-Up Change	RQ1, RQ3	Reframes agency as a driver of scalable, educator-led ethical adoption across higher education
Targeted Professional Development and Ethical Training Approaches	RQ1, RQ3	Builds credible inquiry into professional development models, synthesizing practice-based approaches for cumulative higher education knowledge

Ethical Challenges and Dilemmas in GenAI Integration

This section is a constant theme throughout this literature review. Most studies here discussed the existing and persistent ethical concerns and dilemmas in the use of GenAI, such as academic integrity, algorithmic bias, insufficient model interpretability and transparency, and over-reliance on GenAI. Firstly, GenAI can generate authentic texts, making it difficult to determine authorship and detect originality. Consequently, there is a greater risk of plagiarism (Song, 2024; Alharbi, 2025), and GenAI may hinder students' critical thinking (Mariyono & Hidayatullah, 2025). However, the studies also noted that GenAI detection tools lag behind GenAI development (Wang et al., 2024) and that there is a mismatch between GenAI's rapid progress and the static, time-consuming nature of these tools. Secondly, GenAI tools are trained on biased data, and they may perpetuate and reinforce existing societal inequalities, such as cultural or gender biases (Artyukhov et al., 2024; Mariyono & Hidayatullah, 2025). Last but not least, GenAI's lack of model interpretability and transparency may undermine accountability (Artyukhov et al., 2024; Mariyono & Hidayatullah, 2025). These problems, concerns, or dilemmas may occur across all higher education disciplines, including STEM fields. GenAI can facilitate students' coding but may raise authorship issues; in social science, GenAI may assist students with literature reviews but may yield biased results. In multilingual or Global South English contexts for Academic Purposes, the problems may be further complicated by cultural and contextual differences and the scarcity of GenAI literacy resources. The above problems may be partly addressed by compliance strategies, such as considering the use of artificial intelligence to detect academic misconduct (Wang et al., 2024). However, some researchers suggest that we should reflect deeply on the ethical use of GenAI (Wang et al., 2024). This sub-theme informs RQ2 by highlighting the ethical dilemmas educators encounter in GenAI integration and RQ1 by underscoring the scarcity of professional development that builds ethical awareness, a gap this study addresses through a

transformative professional development program in a multilingual Global South higher education context.

Institutional Policy Gaps, Equity, and Access

The themes of policy voids, equity, and access capture the lack of policy on GenAI within higher education institutions, a gap that is even more pronounced in the Global South. These policy vacuums are evolving faster than the current developments in GenAI (Ghimire & Edwards, 2024; Fenwick et al., 2024). Ineffective national policy frameworks in the Global South further perpetuate this vagueness, as institutions prioritize efficiency (Henadirage & Gunarathne, 2024; Jin et al., 2024). Furthermore, within this theme, the question of access to GenAI tools and the digital divide and inequality were recurrently discussed by some chapters. For instance, it was observed that unequal access to GenAI tools is likely to exacerbate inequality amongst students (Capraro et al., 2024; Valdivieso & González, 2025; Vesna et al., 2025). Similarly, reliance on freely available GenAI is likely to perpetuate inequality (ibid.). These issues are not independent, and, as mentioned earlier, they are also closely linked to the internationalization of higher education institutions and to artificial intelligence-driven personalization, which can widen inequality if not addressed through policies (Karpouzis, 2024). English for Academic Purposes, as a subject often taught in multilingual classes with limited resources, provides a good context for discussing such issues. However, the issues of inequality are likely to be relevant to other subjects as well. Collaborative and human-centered approaches have been recommended to address these issues (Vesna et al., 2025). This sub-theme addresses RQ2 (challenges associated with policy vagueness) and RQ3 (how higher education institutions cope with policy vagueness). It identifies case studies from the Global South within the higher education system and develops policy implications with wider applicability. In doing so, it helps to avoid the pitfall of epistemic parochialism (Crawford, 2025).

Educator Agency, Advocacy, and Bottom-Up Change

In the context of GenAI integration, teacher agency plays a crucial role, as it is associated with teacher readiness to innovate and to design ethical AI-assisted learning activities (Wang et al., 2024; Lee et al., 2025). The literature shows that teachers have mixed feelings about GenAI: on the one hand, GenAI is perceived as a tool for enhancing student-centered learning; on the other hand, GenAI is believed to have the potential to displace teachers and/or is seen as not being compatible with school conditions (Mouta et al., 2025; Arvin et al., 2023). In higher education, teacher agency can be fostered through teacher participation in training (Fenwick et al., 2024) and human resource management practices that aim to empower teachers (Stenberg et al., 2025). Teachers' voices should be heard because they can provide policy and practice recommendations grounded in real, practical experience and therefore more feasible (Capraro et al., 2024; Griffin et al., 2024). Top-down frameworks rarely consider socio-ethical aspects; as a result, there should be formal opportunities for teachers to contribute and for communities of practice to be established (Schiff et al., 2020). This is true across various higher education contexts, where teacher agency enables them to function as change agents. This sub-theme relates to RQ1 (professional development in relation to agency/competencies) and RQ3 (organizational support in ethical decision-making), and we add a new interpretation of the local aspect of teachers' advocacy that can also be leveraged at the cumulative level in higher education (Crawford, 2025).

Targeted Professional Development and Ethical Training Approaches

Given the urgency for professional development, the skills and knowledge of the educators in light of the acceleration of GenAI tools' developments, context-specific professional development practices that promote the development of technical as well as ethical competencies in the use of GenAI tools in teaching have been recommended (Fenwick et al., 2024; Tenberga & Daniela, 2024). Moreover, research evidence suggests that regulation-based training practices are often unappealing and less effective, whereas ongoing practice-based training programs integrated with ethics will promote critical thinking and reflection in relation to their teaching practices (Griffin et al., 2024; McLennan et al., 2022). Similarly, using case-based reasoning in the training program will equip educators to develop phronesis – that is, practical wisdom - which is critical for coping with ill-defined situations where rules can be applied (Capraro et al., 2024). These recommended training practices are in line with Mezirow's transformative learning theory, which stipulates that transformative learning occurs through experiencing a disorienting dilemma; critical reflection and discourse, and action and experimentation with new roles. However, research evidence indicates that, to date, there are very few empirical studies reporting on the design, implementation, and evaluation of a contextualized professional development program that considers both the technical and ethical competencies required for integrating GenAI tools into teaching practices. Further, higher education disciplines are underrepresented in GenAI research. This sub-theme has direct implications for RQ1 (the influence of professional development programs on ethical awareness and digital andragogical competencies) and RQ3 (strategies for addressing the challenges). By synthesizing the practical implications of contextualized professional development practices, this study will contribute to the broader literature by informing the development of generalizable models of professional development programs adaptable across higher education disciplines. Moreover, it will help to minimize repetitive, silo GenAI research (Crawford, 2025).

Summary of Key Themes

The majority of the studies frame GenAI as a dual-edged sword in higher education. The teacher, the educational institution, and the type of professional development are essential variables that ensure that GenAI is used responsibly. The major ethical issues associated with GenAI, such as integrity, bias, and fairness, are still issues despite the absence of clear policy recommendations, especially in the Global South. A transformative, practice-oriented approach may help solve some of these problems. This review provides an overview of research on the ethical use of GenAI in higher education. It contextualizes English for Academic Purposes and Global South research against other higher education contexts to combat epistemic parochialism (Crawford, 2025). Consequently, it contributes to the existing literature on GenAI. In addition, this review confirms the need for a contextualized professional development model that this research addresses by developing a proposed intervention.

Method

The study employed a convergent mixed-methods design within a pragmatist paradigm, integrating quantitative evidence of change with qualitative accounts of experience. Surveys and artefacts measured shifts in ethical awareness and digital andragogical competence, while interviews explored dilemmas and institutional influences. This design ensured statistical findings were contextualized through participant narratives. It was guided by Mezirow's Transformative

Learning Theory (2002), which emphasizes reflection and transformation, alongside ethical decision-making frameworks linking technical competence with moral reasoning. The methodological approach was selected to support analytical generalization by examining ethical generative Artificial Intelligence integration within higher education professional development contexts.

Population and Sampling

The target population consisted of all active English for Academic Purposes university educators in the host institution's English unit. For the quantitative strand, stratified random sampling was used to ensure proportional representation of region of origin, teaching experience, and academic specialization. Inclusion criteria required that participants be actively teaching English for Academic Purposes courses, possess basic digital literacy, and commit to attending all professional development sessions. Exclusion criteria removed those holding administrative-only roles, those with less than one semester remaining in their contracts, and those who had recently completed formal artificial intelligence ethics training. This process yielded a sample of 97 educators. For the qualitative strand, purposeful maximum variation sampling was employed to select 15 participants representing diversity in terms of nationality, gender, years of experience, and prior exposure to artificial intelligence. This size was consistent with conventions suggesting 12 to 20 interviews are sufficient to achieve thematic saturation while enabling depth of inquiry (Hennink et al., 2017). Table 2 presents the sampling overview.

Table 2

Sampling Overview

Phase	**Sampling Strategy**	**Inclusion Criteria**	**Exclusion Criteria**	**Sample Size**
Quantitative	Stratified random sampling	Active English for Academic purposes university teaching staff; basic digital literacy; full professional development attendance	Admin-only roles; <1 semester remaining; recent artificial intelligence ethics training	97
Qualitative	Purposeful maximum variation	As above, representation of key demographic categories	As above	15

Research Setting

The study took place in a higher education institution that delivers English for Academic Purposes instruction across multiple universities in the region. The unit's teaching workforce was highly international, including educators from the Gulf, South Asia, Central Asia, and Africa. This context was particularly relevant for examining the integration of artificial intelligence in Global South settings, where structural inequities and diverse teaching profiles are common but under-researched. The demographic characteristics of the 97 participants are reported in Table 3, which illustrates diversity across gender, age, qualifications, teaching experience, disciplinary background, and nationality. Such diversity increased the potential for analytical generalizability while situating the findings within the specific institutional realities of the host setting.

Table 3

Demographic Characteristics of Participants (n = 97)

Characteristic	Category	n	%
Gender	Male	61	62.9
	Female	36	37.1
Age	25–34 years	28	28.9
	35–44 years	32	33.0
	45–54 years	25	25.8
	55 years and above	12	12.4
Teaching Experience	Less than 5 years	21	21.6
	5–10 years	33	34.0
	11–15 years	26	26.8
	More than 15 years	17	17.5
Highest Qualification	Bachelor's degree	14	14.4
	Master's degree	58	59.8
	Doctorate	25	25.8
Disciplinary Background	English language teaching	47	48.5
	Education	28	28.9
	Other related fields	22	22.7
Nationality/Region	Saudi	39	40.2
	Pakistani	21	21.6
	Indian	15	15.5
	Sudanese/Egyptian	14	14.4
	Other expatriates	8	8.2

Professional Development Program

The professional development program was structured as an eight-week sequence explicitly aligned with Mezirow's Transformative Learning Theory (2002) and scaffolded with ethical reasoning processes. The program began with authentic cases of artificial intelligence misuse as disorienting dilemmas that challenged assumptions about plagiarism, authorship, and integrity. In the first two weeks, participants reflected critically on these cases through structured discussions and reflective logs. Weeks three and four emphasised reflective discourse, during which participants examined institutional policy gaps, compared international practices, and debated ethical grey areas while designing artificial intelligence -integrated tasks with safeguards. Weeks five and six focused on communicative learning through peer review, where participants exchanged artefacts, provided feedback, and revised their tasks. The final two weeks supported perspective transformation and reintegration into practice, as participants drafted classroom

artificial intelligence use agreements, developed reflective artificial intelligence tasks, and developed action plans to sustain ethical integration beyond the professional development program. Table 4 outlines the weekly structure, aligning with transformative learning stages, ethical reasoning, delivery format, and facilitator roles.

Table 4

Alignment of Weekly Sessions with Transformative Learning, Ethical Reasoning, and Delivery Structure

Week	Focus of Session	Transformative Learning (Mezirow, 2002)	Ethical Reasoning Processes	Delivery Format & Contact Hours	Core Activities	Follow-up Tasks	Facilitator Role
1	Introduction to Artificial Intelligence in Education and Ethical Challenges	Disorienting dilemma, confronting risks of artificial intelligence use	Recognizing and framing ethical issues	Workshop + Learning Management system (2 hrs + 1–2 hrs async)	Orientation, case examples, group dialogue	Reflective log, short reading response	Present content, guide case discussion
2	Case Studies on Plagiarism and Authorship Dilemmas	Critical reflection on assumptions	Weighing competing principles	Workshop + Learning Management system (2 hrs + 1–2 hrs async)	Case analysis, ethical dilemma debate	Upload draft reflections to the Learning Management system	Facilitate dialogue, formative feedback
3	Exploring Institutional Policy Gaps	Reflective discourse	Interpreting and applying policy	Workshop + group work (2 hrs)	Policy gap analysis, collaborative discussion	Draft notes on policy interpretations	Facilitate discussion, clarify policy issues
4	Designing artificial intelligence - Integrated Assignments	Exploration of new actions	Embedding safeguards	Workshop + artefact work (2 hrs + 1–2 hrs async)	Draft artificial intelligence - integrated assignment	Upload draft assignment for peer review	Provide formative feedback
5	Peer Review of Artefacts	Communicative learning	Testing safeguards	Peer review session (2 hrs)	Exchange artefacts, peer critique	Revise artefacts	Monitor reviews, mediate feedback
6	Embedding Reflective Artificial Intelligence Use Tasks	Perspective transformation	Accountability and transparency	Workshop + reflection (2 hrs + async tasks)	Designing reflective artificial intelligence - use tasks	Professional Development: reflective logs, share exemplars	Feedback on clarity and feasibility
7	Drafting Classroom Artificial Intelligence Use Agreements	Integration into practice	Enforceable agreements	Workshop + drafting (2 hrs + async)	Draft classroom artificial intelligence use agreements	Share agreements for peer feedback	Provide contextual feedback

8	Consolidation and Action Plans	Reintegration of perspectives	Sustaining ethical practices	Final workshop + consult (2 hrs + async submission)	Present action plans, final artefacts	Submit final artefacts and plan	Evaluate sustainability, advise next steps

By sequencing activities in this way, the professional development enabled educators to experience a structured journey from initial disorientation to transformed practice. The alignment of transformative learning stages with ethical reasoning processes ensured that conceptual insights translated into actionable strategies, allowing participants to move beyond awareness into confident and sustainable classroom application. To ensure equitable and respectful engagement, peer review sessions were carefully structured to avoid dominance, with rotating groups and balanced feedback. Sensitive issues, including plagiarism and authorship, were addressed with assurances of discretion. Participants were encouraged to align their classroom artificial intelligence-use agreements with institutional policy and broader reforms, such as Saudi Arabia's Vision 2030 strategy.

Instruments and Tools

A multi-instrument strategy was adopted to capture both measurable changes and rich contextual insights related to ethical awareness, digital andragogical competence, and institutional navigation of generative artificial intelligence. The instruments combined quantitative measures with qualitative accounts to ensure both breadth and depth of evidence.

Surveys were adapted from Lim et al. (2023) and administered before and after the professional development program. The instrument included 24 Likert-scale items across three subscales: ethical awareness, digital andragogical competence, and policy interpretation. One dichotomous item measured familiarity with institutional artificial intelligence policies, and open-ended prompts allowed participants to elaborate on their responses. A pilot with 15 teachers outside the study site confirmed the clarity, producing Cronbach's alpha coefficients between 0.81 and 0.87.

Teaching artefacts were collected as part of the professional development activities. These artefacts consisted of artificial intelligence -integrated assignment designs and ethical use guidelines. They were evaluated using a four-dimensional rubric that assessed ethical safeguards, alignment with institutional policy, pedagogical integration, and transparency. Two trained raters independently applied the rubric, achieving strong inter-rater reliability ($\kappa = 0.85$).

Engagement logs were used to capture levels of participation across the eight weeks of the professional development program. An engagement index combined three weighted dimensions: attendance (40 per cent), task completion (40 per cent), and reflective participation (20 per cent). Reflective logs were further rated on a three-point scale to assess depth of engagement. These elements were standardized into a composite score ranging from 0 to 100, which correlated positively with artefact performance, supporting concurrent validity.

Semi-structured interviews provided qualitative depth by exploring educators' reflections on the professional development program, the ethical dilemmas they encountered, and their perceptions of institutional responsibility. The interview protocol was reviewed by experts in artificial intelligence ethics and language education to ensure contextual validity. Interviews were conducted via secure video conferencing, recorded with the participants' informed consent, and

transcribed verbatim. Thematic analysis was conducted using Braun and Clarke's (2006) six-phase framework, and intercoder reliability was established at $\kappa \approx 0.85$.

Data Collection Procedures

Data collection was structured around the eight-week professional development program and aligned with its activities. Prior to the intervention, all participants completed a baseline survey measuring ethical awareness, digital andragogical competence, and policy interpretation. During the program, participants engaged in weekly workshops and asynchronous Learning Management System activities that produced artefacts and reflective logs, while engagement was tracked through attendance and task-completion records. At the conclusion, participants completed a follow-up survey and submitted final artefacts. In addition, a subsample of 15 educators participated in semi-structured interviews to provide deeper insights. Data were gathered through a blended format combining synchronous workshops with asynchronous activities, as outlined in Table 4. Challenges included intermittent internet connectivity, scheduling conflicts, and reluctance to share artefacts, but these were mitigated through flexible scheduling, asynchronous options, and confidentiality assurances to maintain completeness and credibility. Ethical approval for the study was obtained from the Institutional Review Board of the parent institution (Approval No. IRB/25/067). Informed consent was obtained from all participants after a clear explanation of the aims, procedures, and withdrawal rights. Confidentiality was maintained through coded identifiers and secure, restricted data storage.

Data Analysis

Quantitative and qualitative data were analysed separately and then integrated. For the quantitative strand, paired-samples t-tests were used to measure changes in pre- and post-program survey subscales and artefact rubric scores. Correlations examined relationships among ethical awareness, digital andragogical competence, and policy familiarity. Analysis of covariance models was conducted to control for confounding variables, such as teaching load and prior artificial intelligence familiarity, and subgroup analyses were used to compare outcomes across gender, experience, and nationality. For the qualitative strand, thematic analysis was conducted using Braun and Clarke's (2006) six-phase framework. Coding frequencies reflected the breadth of participants' perspectives, and intercoder reliability was established at a $\kappa \approx$ of 0.85. Integration occurred during the interpretation phase, where survey and rubric results were triangulated with interview narratives to provide a comprehensive understanding of the outcomes.

Rigour was ensured across both strands. In the qualitative component, credibility was supported through member checking and peer debriefing; transferability through thick description; dependability through systematic documentation; and confirmability through audit trails and reflexive journaling. In the quantitative component, internal validity was ensured by the pre–post design, construct validity was established using adapted instruments, and reliability was assessed through Cronbach's alpha and inter-rater agreement. The diverse international sample enhanced external validity, while triangulation across surveys, artefacts, and interviews reinforced robustness.

Limitations

Despite methodological strengths, the study faced constraints. Internet disruptions occasionally interrupted interviews, heavy teaching loads created scheduling conflicts, and a few participants

were hesitant to share artificial intelligence -related artefacts. These issues were mitigated by offering flexible scheduling, asynchronous participation options, and assurances of confidentiality. The single-institutional setting limits statistical generalizability, but the international profile of the teaching staff and explicit measures for validity and reliability support analytical generalizability to theory and transferability to comparable contexts in the Global South. Table 5 presents the alignment of research questions with data sources, instruments, analysis methods, and rationales. This design and execution were chosen to yield findings that are analytically generalizable to theory and transferable to comparable Global South contexts, while maintaining methodological rigor through explicit reliability and validity measures. These measures ensured full compliance with ethical standards while fostering professional dignity and trust among participants.

Table 5

Methodology Matrix

Research Question	Data Source	Instrument	Analysis Method	Rationale
Influence of GenAI professional development on ethical awareness and digital andragogical competencies	Pre- and post-professional development surveys; artefact analysis	Adapted Likert-scale survey (Lim et al., 2023); artefact rubric	Descriptive statistics, paired-samples t-tests, effect sizes, and rubric scoring	Triangulates self-reported and performance-based measures to assess both perceived and demonstrated competence
Ethical dilemmas encountered	Semi-structured interviews	Interview protocol reviewed by artificial intelligence ethics experts	Braun & Clarke (2006) thematic analysis	Captures complex, context-specific challenges beyond survey scope
Institutional navigation of GenAI ethics	Semi-structured interviews; institutional document review (if available)	Interview protocol; artificial intelligence policy review checklist	Thematic analysis; content analysis	Links educator perspectives with policy gaps and potential institutional responses

Results

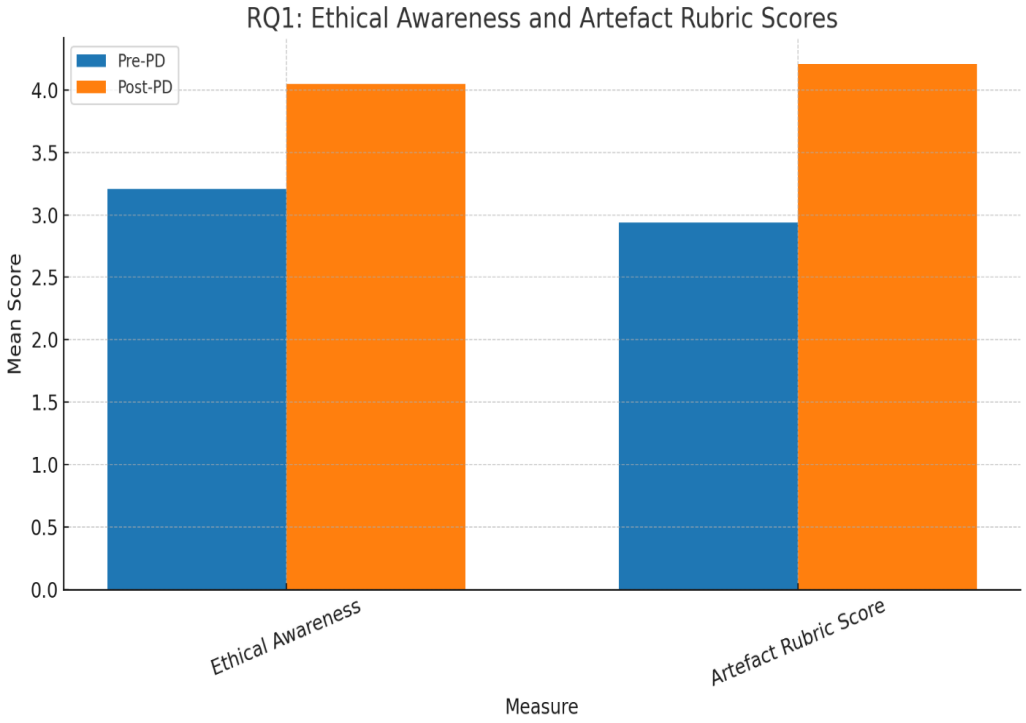
The results are presented by integrating quantitative and qualitative findings to address each research question. This approach ensures that measurable outcomes are considered alongside participants' lived experiences, providing a comprehensive account of the impact and implications of the professional development program.

Significant Gains in Ethical Awareness and Reasoning After Professional Development

Quantitative analysis indicated a significant improvement in participants' ethical awareness scores, as measured by the Scenario Rubric, rising from a pre-professional development mean of 3.21 (SD = 0.48) to a post-professional development mean of 4.05 (SD = 0.42), $t(96) = 15.12$, $p < .001$, with a large effect size (Cohen's $d = 0.93$). The Artefact Rubric results similarly reflected growth, with post-professional development assignments averaging 4.21/5 compared to 2.94/5 pre-professional development, demonstrating substantial gains in integrating GenAI tools into pedagogy. Inter-rater reliability for artefact evaluation was high ($\kappa = 0.87$). Engagement data further revealed that highly engaged participants achieved greater gains across both rubrics ($p < .01$).

Figure 1

Pre- and Post-Professional Development Ethical Awareness and Artefact Rubric Scores



Qualitative interview data supported these findings, with participants reporting that they felt "more prepared to respond" to artificial intelligence misuse and more capable of designing assignments that blended GenAI affordances with pedagogical safeguards. Many described the professional development tasks as "immediately usable" in their classrooms and credited the hands-on nature of the activities for helping them apply new skills. The convergence of rubric-based performance gains with narratives of increased confidence and transferability underscores the effectiveness of the professional development in bridging conceptual understanding and classroom application. As illustrated in Table 6, the most frequently reported themes were preparedness to respond to misuse of artificial intelligence (18 participants), the capability to design artificial intelligence-integrated assignments (15 participants), and hands-on activities that aid skill application (16 participants). Other salient, but slightly less frequent, themes included the immediate classroom usability of professional development tasks (14 participants) and the bridging of conceptual

understanding with classroom practice (12 participants). Together, these qualitative themes reinforce the quantitative improvements, highlighting that professional development engagement not only enhances technical competence but also cultivates reflective, ethical awareness among educators.

Table 6.

Frequency of Perceived Professional Development Impacts

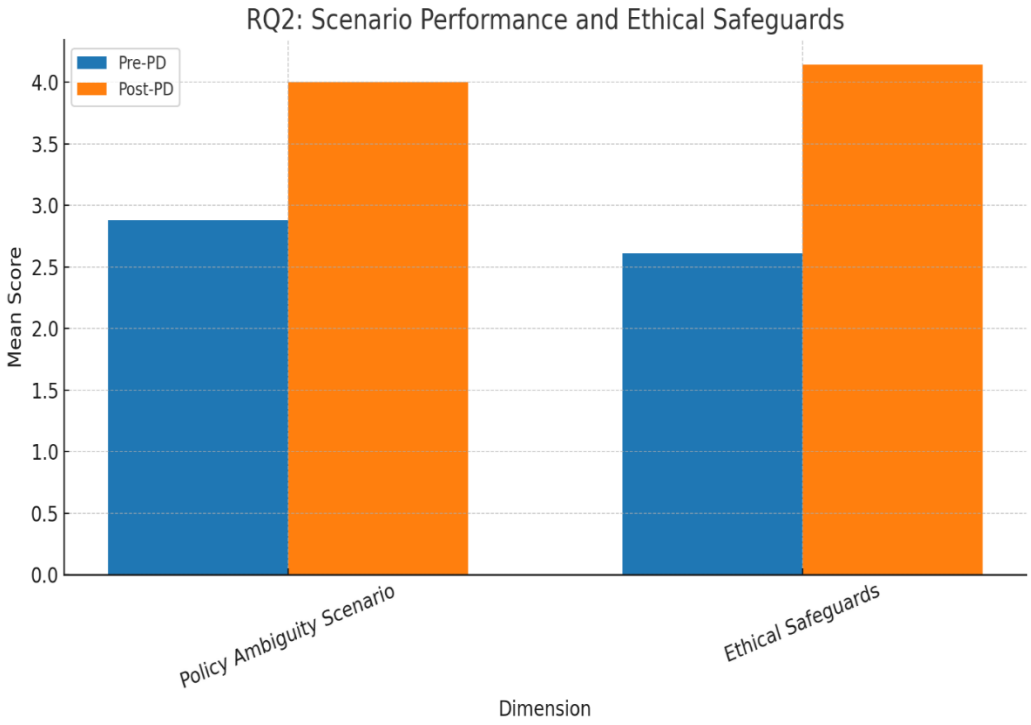
Perceived Impact Theme	Number of Participants Mentioning Theme
Preparedness to respond to artificial intelligence misuse	18
Hands-on activities aiding skill application	16
Capability to design artificial intelligence-integrated assignments	15
Immediate classroom usability of professional development tasks	14
Bridging conceptual understanding and classroom practice	12

Persistent Ethical Dilemmas: Plagiarism, Student Overreliance, and Policy Gaps

Pre-professional development scenario performance was lowest in cases involving policy ambiguity and cultural mismatches (M = 2.88, SD = 0.55), but these items saw the largest improvements post-professional development (+1.12 points). The Artefact Rubric's *Ethical Safeguards* sub-dimension improved substantially from 2.61/5 to 4.14/5, indicating a marked increase in the incorporation of protective measures within teaching materials. Engagement index scores correlated positively with higher scenario performance on plagiarism and authorship dilemmas ($r = .41$, $p < .01$). As shown in Figure 2, participants demonstrated significant post-professional development gains across both dimensions. Scores in the *Policy Ambiguity Scenario* improved notably, reflecting participants' enhanced ability to navigate unclear or conflicting institutional guidelines. Similarly, scores for *Ethical Safeguards* increased, evidencing stronger integration of protective strategies into assignment design. Together, these findings confirm that the professional development intervention not only addressed immediate classroom dilemmas but also cultivated sustainable ethical practices among educators.

Figure 2

Pre- and Post-Professional Development Scenario Performance and Ethical Safeguards



Interview findings illuminated these statistical patterns. Educators expressed difficulty navigating the lack of formal institutional policies on artificial intelligence, noting uncertainty about what constitutes acceptable use of artificial intelligence in student work. Following the professional development, participants described adopting clear artificial intelligence use agreements, integrating plagiarism detection protocols, and embedding reflective tasks that required students to explain their use of artificial intelligence. Those with higher professional development engagement not only implemented more safeguards but also articulated more nuanced understandings of ethical grey areas, suggesting that active participation enhanced their ability to anticipate and address potential misuse. As shown in Table 7, the most frequently cited challenges were the difficulty navigating the absence of artificial intelligence policies (15 mentions) and uncertainty over acceptable artificial intelligence use (12 mentions). Participants also highlighted adopting clear artificial intelligence use agreements (10 mentions), integrating plagiarism detection (9 mentions), and embedding reflective artificial intelligence tasks (8 mentions) as strategies that helped them regulate their classroom practice. Additionally, higher professional development engagement was linked to the introduction of more safeguards (7 mentions) and a deeper recognition of ethical grey areas (6 mentions). These themes illustrate how the professional development intervention enabled educators to transition from uncertainty to proactive ethical decision-making.

Table 7.

Reported Ethical Dilemmas and Safeguards

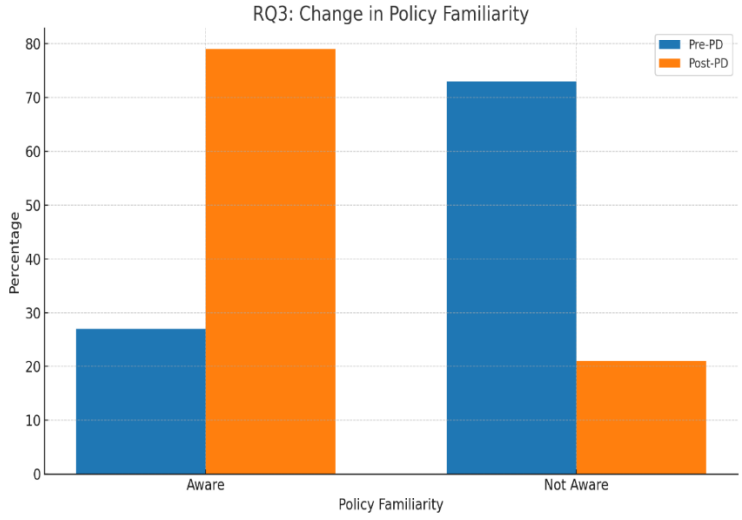
Reported Ethical Dilemmas and Safeguards	Frequency (Number of Mentions)
Difficulty navigating the absence of artificial intelligence policies	15
Uncertainty over acceptable artificial intelligence use	12
Adopting clear artificial intelligence use agreements	10
Integrating plagiarism detection	9
Embedding reflective artificial intelligence use tasks	8
Higher engagement requires additional safeguards	7
Nuanced understanding of ethical grey areas	6

Institutional Strategies: Ethics Committees, Policy Literacy, and Ongoing Training

Post-professional development surveys revealed a substantial increase in policy familiarity, with affirmative responses to policy knowledge rising from 27% to 79% ($p < .001$, McNemar's test). Artefact rubric scores in the *Alignment with Policy* dimension were higher among participants who self-reported policy awareness, indicating a direct relationship between familiarity and practice. Engagement also correlated with more substantial policy alignment in artefacts ($r = .36$, $p < .05$). As illustrated in Figure 3, participants' familiarity with policy shifted dramatically following the professional development intervention. The proportion of educators reporting awareness of artificial intelligence -related policies rose sharply, while those indicating a lack of awareness decreased significantly. This shift suggests that the professional development not only improved individual competence but also fostered broader institutional literacy around artificial intelligence ethics.

Figure 3

Change in Policy Familiarity Before and After Professional Development



In qualitative interviews, participants proposed strategies for institutionalizing ethical use of artificial intelligence, such as establishing artificial intelligence ethics committees, creating centralized repositories of vetted artificial intelligence tools, and embedding artificial intelligence

policy literacy across all professional development programs. Many emphasized the need for ongoing, rather than one-off, training to keep pace with rapidly evolving artificial intelligence technologies. Those who demonstrated higher engagement during professional development frequently positioned themselves as “change agents” within their departments, influencing colleagues’ adoption of responsible artificial intelligence practices. As shown in Table 8, participants most frequently highlighted establishing artificial intelligence ethics committees (12 mentions), embedding artificial intelligence policy literacy into professional development (11 mentions), and creating centralized repositories of vetted artificial intelligence tools (10 mentions) as key institutional strategies. Other recurring themes included ongoing training to keep pace with artificial intelligence (9 mentions), the role of highly engaged educators acting as change agents (8 mentions), and the importance of institutional structures that sustain professional development gains (7 mentions). The convergence of these themes with quantitative findings underscores the pivotal role of institutional support in maintaining and scaling the benefits of integrating ethical artificial intelligence.

Table 8.

Proposed Institutional Strategies

Proposed Institutional Strategies	Frequency (n = 15)
Establishing artificial intelligence ethics committees	12
Embedding artificial intelligence policy literacy into professional development	11
Centralized repositories of vetted artificial intelligence tools	10
Ongoing training to keep pace with artificial intelligence developments	9
Change agents influencing colleagues	8
Institutional structures sustaining professional development gains	7

Convergent Findings: Engagement Boosts Professional Development Gains and Institutional Needs

Across all research questions, the integration of quantitative and qualitative findings suggests that the GenAI-integrated professional development program not only improved measurable competencies but also fostered a proactive, reflective approach to artificial intelligence ethics in teaching. High engagement emerged as a cross-cutting factor that amplified both learning gains and participants’ capacity to act as advocates for ethical practice. The combination of robust pre- and post-intervention measures, high inter-rater reliability, and thematic convergence strengthens confidence in the transferability of these findings to similar educational contexts in the Global South. Table 9 presents a convergent synthesis of the quantitative gains and qualitative insights aligned with the research questions.

Table 9. *Convergent Findings: Synthesis of Quantitative Gains and Qualitative Insights*

Finding Area	Quantitative Findings	Qualitative Findings	Integrated Interpretation
Gains in Ethical Awareness and Reasoning After Professional Development	Significant increase in ethical awareness scores (d = 0.93) post-professional development; high inter-rater reliability (κ = 0.85).	Participants reported feeling “more prepared to respond” to misuse of artificial intelligence and more confident in designing ethically aligned assignments.	Both data strands confirm that the professional development strengthened ethical reasoning and practical readiness, with skill gains translating into tangible classroom applications.
Persistent Ethical Dilemmas: Plagiarism, Overreliance, and Policy Gaps	(If any quant measure existed here; otherwise, N/A)	Participants noted difficulty navigating policy gaps and ethical grey areas, as well as adopting artificial intelligence-use agreements and plagiarism protocols.	Quantitative improvements were reinforced by qualitative accounts, which showed that professional development equipped educators to mitigate risks despite institutional policy limitations.
Institutional Strategies: Ethics Committees, Policy Literacy, and Ongoing Training	Policy interpretation scores improved, but some variability remained.	Participants proposed establishing artificial intelligence ethics committees, embedding artificial intelligence policy literacy into professional development, and creating centralized repositories of vetted artificial intelligence tools.	Quantitative improvements were reinforced by qualitative accounts, which showed that professional development equipped educators to mitigate risks despite institutional policy limitations.
Convergent Findings: Engagement Boosts Professional Development Gains and Institutional Needs	High engagement correlated with higher post-test scores and rubric performance.	Highly engaged participants emerged as “change agents,” influencing departmental artificial intelligence practices.	Engagement served as a multiplier, enhancing learning outcomes and leadership in promoting the responsible integration of artificial intelligence.

Discussion

The findings indicate that structured, practice-oriented professional development strengthens educators’ ethical awareness and digital andragogical competence in integrating generative artificial intelligence within higher education. The large effect size observed in ethical awareness suggests that sustained engagement with authentic dilemmas enhances decision-making confidence and professional judgment. These results align with evidence that targeted professional development supports meaningful technology integration (Lim et al., 2023), while

extending the literature through attention to multicultural Global South contexts where institutional policy infrastructures remain uneven.

The ethical tensions identified, particularly around transparency, authorship, and academic integrity, resonate with existing JUTLP scholarship. Perkins (2023) argues that risks associated with large language models concern transparency more than mere usage. The emphasis that participants placed on disclosure guidelines and classroom agreements regarding the use of artificial intelligence reflects this orientation. Crawford et al. (2023) similarly advocate ethical leadership grounded in character development and authentic assessment. The professional development model operationalizes this approach by positioning educators as active ethical agents rather than passive recipients of technological mandates. These findings also support Isiaku et al. (2024), who stress the necessity of moral standards in contexts characterized by rapid technological adoption and limited policy clarity. Qualitative analysis highlights persistent dilemmas, including plagiarism detection, student overreliance on artificial intelligence outputs, and tension between creative flexibility and academic rigor. A particularly salient issue concerns misalignment between institutional policy ambiguity and educators' personal ethical frameworks. In the absence of formal governance structures, peer consultation and self-evaluation emerged as interim regulatory mechanisms. While collaborative dialogue fostered shared responsibility, uneven participation and dominant voices in critique sessions revealed the need for more structured engagement protocols within professional development design.

Demographic diversity shaped how participants interpreted and enacted ethical integration. Variations in national background and professional trajectory influenced responses to policy gaps, resource constraints, and institutional expectations. These findings reinforce the need for professional development in transnational higher education settings to be culturally responsive and contextually adaptable rather than based on uniform implementation assumptions. Several limitations warrant consideration. The single-institution setting restricts statistical generalisability, and self-selection may have favored educators predisposed toward innovation. Although immediate gains were measurable, the absence of longitudinal follow-up limits claims regarding sustained classroom transformation and student-level impact.

Practical Implications

Higher education institutions seeking responsible integration of generative artificial intelligence should embed ethical reasoning within technical professional development rather than treating these domains separately: case-based analysis, reflective dialogue, and artefact development support the translation of conceptual awareness into classroom application. Policy literacy should be incorporated explicitly, particularly in contexts where formal governance frameworks remain underdeveloped. Structured participation mechanisms are necessary to ensure equitable engagement and balanced discourse. Institutions should also recognize highly engaged participants as potential catalysts for broader cultural change and sustainable ethical practice.

Theoretical Implications

The findings extend transformative learning theory into contemporary discussions of the integration of generative artificial intelligence. Movement from disorienting dilemmas to reflective discourse and the creation of applied artefacts illustrates how ethical competence develops through structured professional learning environments. Ethical integration of artificial intelligence emerges as a socio-cultural process shaped by institutional context, policy ambiguity, and

educator agency. By foregrounding a multicultural Global South setting, the analysis supports analytical generalisation. It contributes to a more globally inclusive account of professional development, governance, and ethical technology adoption in higher education.

Conclusion

This study shows that a systematic GenAI-integrated professional development program can have a significant impact on the ethical awareness and digital andragogical competencies of English for Academic Purposes practitioners in higher education, even in the absence of artificial intelligence policies in their institutions. The increase in self-reported competencies, along with deeper, more sophisticated understandings of moral practices, suggests the possibility and relevance of integrating GenAI ethics into professional development programs. This study adds to theory by applying transformational learning to GenAI ethics in a multicultural higher education context, to practice by providing a working professional development program model, and to methodology by using mixed-methods to generalize to other under-investigated settings analytically.

There are three key takeaways from the study. Firstly, participants experienced an overall increase in confidence in ethical decision-making and practical GenAI literacy skills after the professional development program. Secondly, the commonly encountered ethical issues (i.e., academic dishonesty, GenAI dependency, and lack of policies) require immediate attention from the institution. Lastly, peer support played a key role in enhancing confidence and the sense of shared responsibility for ethical GenAI practices. Apart from local implications, the culturally, linguistically, and professionally diverse profile of the participants allows for analytical generalization to comparable contexts in the Global South. This study offers a practical professional development program model that can be contextualized across different institutional settings, contributing to the global conversation about the responsible use of GenAI in education. The study's findings align with global policy recommendations that emphasize the importance of responsible use of artificial intelligence (UNESCO, 2023).

The research makes several contributions: (1) the development and testing of an adaptable GenAI-integrated professional development program model; (2) the exploration of GenAI ethics and English for Academic Purposes pedagogy; (3) the creation of dependable tools for assessing GenAI literacy of teachers; and (4) a research methodology to achieve analytical generalization from contextually diverse, yet localized, research sites. Policymakers, administrators, and professional development providers must now prioritize the embedding of ethical GenAI use into teacher education programs, establish timely institutional policies, and promote GenAI literacy conversations among teachers, technologists, and policymakers in order to ensure that the potential of GenAI can be harnessed without undermining academic integrity, equity, and the quality of education.

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conceptualization, methodology, formal analysis, investigation, writing, supervision, project administration, and related scholarly activities. **Alharbi:** Conceptualization, Methodology, Formal analysis, Investigation, Writing – Original Draft, Writing – Review & Editing, Supervision, Project administration; **Hamid:** Conceptualization, Methodology, Formal analysis, Investigation, Writing – Original Draft, Review & Editing; **Abbas:** Conceptualization, Methodology, Formal analysis, Investigation, Writing – Original Draft, Review & Editing; **Salieva:** Conceptualization, Methodology, Formal analysis, Investigation, Writing – Original Draft, Review & Editing.

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