Navigating the Nexus: AI Technologies and Robust Quality Assurance in Higher Education

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Keywords: Quality Assurance, Faculty Competencies, Sustainability, AI Technologies

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Abstract

Recent trends show that universities are searching for new solutions to improve their quality assurance effectively, for example by integrating artificially intelligent technologies in such systems. For the competitive edge, incorporation of such technologies that improve efficiency and effectiveness is indispensable and must include key stakeholders in order to conduct risk analysis to develop an effective IQA approach that ensure short and long-term sustainability of the education quality.

This research explores the evolving excellence in quality assurance frameworks within higher education institutions (HEIs), in the era of Artificial Intelligence (AI) technologies. As AI reforms curriculum development, assessment methods, and teaching delivery and pedagogy, understanding its implications for IQA practices in more robust ways becomes paramount.

This research aims to study how HEIs are adapting their quality assurance processes in the backdrop of rapid AI technologies development, focusing on curriculum development and education delivery. Utilizing a qualitative research approach, video online semi-structured interviews were conducted with Quality Assurance and AI experts across various universities in the Netherlands and other countries. This approach facilitates a deep dive into the extent to which educational or curriculum changes are AI facilitated.

This paper contributes to the growing discourse on the crossroads of AI advancement and robust quality assurance in higher education to manage latest trends affectively. It delivers insights into how HEIs can leverage AI technologies to foster sustainable IQA systems. It is hoped that the findings can shed more light on the significance of holistic approaches in metamorphosing quality assurance frameworks to the evolving educational landscape due to AI technologies.

***Keywords**: Quality Assurance, Faculty Competencies, Sustainability, AI Technologies*

Introduction

Artificial Intelligence (AI) has been introduced for many decades in different fields and its recent integration in higher education (HE) is particularly becoming an interesting research focus. The rapid advancement of AI technologies is overwhelmingly restructuring HE arena, presenting both unprecedented opportunities and complex challenges for quality assurance (QA) practices in this respect. As AI systems become increasingly sophisticated and pervasive across academic domains, higher education institutions (HEIs) find themselves at a critical stage, compelled to reevaluate and adapt their QA practices and approaches to ensure robust educational standards are in place in this evolving HE landscape. This research paper aims to explore the intricate relationship between AI technologies and QA in HE, with a particular focus on how institutions are navigating this nexus to maintain and enhance the quality of their educational programmes when it comes to didactical and pedagogical approaches (Bond et al., 2024).

The integration of AI into HE is not limited to standard technological adoption, but encompassing fundamental shifts in curriculum development, assessment practices, and pedagogical approaches (Kumar et al., 2024). The introduction of AI generative tools with mushroom growth has enormously impacted the learning environment at HEIs, necessitating a need for schools, universities, and organisations to address to generative AI's growing impact on in this respect (Bond et al., 2024; Bozkurt et al., 2023).

As AI competencies are increasingly becoming vital skills across disciplines, HEIs must deal with questions of how to effectively incorporate AI-related knowledge and skills into their curricula while ensuring alignment with established quality standards. Moreover, the potential of AI to revolutionize personalized learning and automate administrative tasks raises important considerations about the changing roles of educators and internal quality assurance (IQA) departments. This study seeks to investigate how HEIs are adapting their QA processes in response to these rapid developments, understand the extent to which AI facilitates educational curriculum changes, and explore the impact of these technologies on the robustness of IQA practices. By examining these critical aspects, this research aims to contribute valuable insights to the ongoing discourse on maintaining educational excellence in an AI-driven era (Bond et al., 2024), while also addressing the ethical implications and potential biases inherent in AI systems within the context of HE quality assurance. This investigation emphasized on the transformative potential of AI-based tools, in uplifting the learning environment particularly in HEIs. Based on these, the main research objective is to explore the evolving role of AI in IQA processes and how HEIs can leverage AI to improve QA while addressing related challenges. The research questions are as follows:

1. What are the key challenges faced by HEIs in implementing AI-driven IQA practices?
2. What solutions and best practices have been effective in overcoming these challenges?
3. How do advancements in AI technologies impact the principles, practices, and effectiveness of IQA systems in HEIs?

The next section start with a critical analysis based on the contemporary literature.

Literature Review

The integration of AI technologies in HE presents both immense opportunities and significant challenges for curriculum development, assessment, and quality assurance. This literature review examines key studies exploring AI applications in educational contexts, ethical considerations

surrounding AI implementation, and frameworks for ensuring responsible AI use in academia. By synthesizing findings across these areas, this critical analysis aims to provide insights into navigating the complex nexus of AI and QA in HE.

AI in Curriculum Development and Assessment

In order to educate young adults to prepare to be successful employees collaborating with AI, HE should set out fostering AI literacy (Laupichler et al., 2022; Centindamar et al. 2022). In their review of AI literacy investigations in research and education, Laupichler et al. (2022) note that Europe and Africa and South-America are regions that should invest more into investigating AI literacy to ensure the required quality in education. Furthermore they note that the relevance of AI literacy will further increase being of crucial importance to students of any study field as all fields are being shaped by AI. AI has a transformative impact on education and the curricula with a lot of potential to make learning more efficient and tailored to the need of the individual student, while also ensuring the alignment with national standards and keeping in check the evolving needs of the technology-driven world (Hodhod et al. 2018; Braiki et al. 2020). The study of Braiki et al. (2020) also discusses many AI applications in education such as automated essay scoring, teacher-bots and virtual learning companions. Another study by Tavakoli et al. (2022) advocate for the combination of AI and crowdsourcing to create dynamic and personalised curricula in the context of informal learning environments, as this combination would help to overcome scalability challenges of personalised learning and would provide labour-market driven learning pathways.

Gonzalez-Calatayud (2021) advocate for the need of stronger pedagogical foundation behind the use of AI, as it is being applied increasingly in student assessments. Another study by Cope et al. (2020) support the view that AI can support new methods of assessment and provide ongoing feedback to learners, but also argue that AI should be complementary to educational practices, rather than replacing human teachers.

Abdelwahab et al., (2023) and Padovano & Cardamone (2024) analysed AI content and/or application in the curriculum in case of industrial engineering and management education to meet the evolving demand of the industry and they conclude that AI can play a central role in designing and maintaining competency-based curricula (CBC) by leveraging data-driven insights. They argue that AI aids identifying education gaps and helps with the development of the curricula, better aligned with the industry needs, advocating a collaborative human-AI approach to curriculum design. Similarly, an earlier study by Bae et al. (2020) proposes a new framework for developing AI curricula in graduate schools of educations, whereby emphasising the incorporation of essential AI concepts, machine learning and practical information as well. Their curriculum design ensures progressive learning by relying on Bloom's digital taxonomy (Churches, 2008; Anderson & Krathwohl, 2001) and Bruner's spiral curriculum (Bruner, 1960).

Ethical Considerations and Bias in AI

AI presents a significant opportunity when it comes to economic growth and societal improvements, but some experts also raised ethical concerns such as issues with data bias, security, privacy and ethical behaviour. Siau & Wang (2020) clarified these challenges and suggests careful attention in establishing robust frameworks and guidelines for AI systems to behave ethically and to align with societal values.

There is clearly a need for stronger ethical frameworks, as suggested by Eitel-Porter (2020) claiming that ethical AI foundations are crucial, but they are not sufficient for ensuring responsible AI implementations. While their study mainly concludes in case of frameworks for business, suggesting the development of strong governance controls and creating audit trails, such practices are equally relevant in HEIs to deal with compliance issues. Furthermore, the importance of ethics boards is also mentioned by Eitel-Porter (2020) and the continuous trainings as critical factors for successful and ethical use of AI.

There are significant divergences between how ethical guidelines are interpreted and implemented, especially concerning bias, and according to Jobin et al. (2019) there is still need for substantive ethical analysis and practical implementation strategies in AI systems. Mittelstadt (2019) argues that translating ethical principles into practice is more complex in AI, mainly because it has so diverse applications.

There are numerous guidelines for AI ethics, that emphasise principles such as fairness, accountability, transparency (Memarian & Doleck , 2023), however when it comes to practice, they often fall short as they often focus on technical solutions for issues like bias (Hagendorff, 2020). Similarly, findings of Prem (2023) suggest that ethical AI frameworks are often too abstract to be implemented effectively into practice and there is still substantial work required to address ethical concerns appropriately. In the opinion of Hagendorff (2020) ethical frameworks for AI fail to address the broader social, political and ecological impact of AI and he calls the AI industry to a more enforceable approach to truly address the bias and ethical concerns in AI systems.

AI represents a significant potential in education, but its integration is vital given that ethical concerns are being mitigated as underlined by O'Connor (2023) and in Kumar et al.(2024). In business education there are a myriad of tools that can be explored, such Python-based programming tools for business analytics, but also generative AI, such as ChatGPT can be used in a manner to enable and enhance student learning focusing on complex tasks (Laker & Sena, 2023). Sweeney (2023) highlight that there are broader implications with ethical challenges for HEIs, not only in the areas of recruitment strategies, support for learners and addressing student achievements, but also student mental health and overall well-being, especially in the case of international students. Kumar et al. (2024) advocate for the use of AI tools to improve the educational outcomes, however, the development of ethical practices is needed to ensure the new technologies are being used in responsible and effective manner.

Memarian & Doleck (2023) recommend bridging the gap between lay people and experts, as well as linking qualitative and quantitative studies to better address ethical concerns in AI. Slimi & Carbadillo (2023) emphasise the need for stakeholders, including policymakers and educators, to join forces in ensuring responsible AI deployment. Similarly, Chinta et al. (2024) call for the need of collaborative working among educators, technologists and policymakers to address AI biases and create optimal, fair, ethical and inclusive AI driven educational environments.

Faculty and Staff Readiness for AI Integration

The readiness of faculty and staff to integrate AI into the educational process is one of the topics that is becoming more important than ever, as the rapid development of AI technologies has a significant impact on the quality of learning and the efficiency of HEIs (Laupichler et al., 2022). The successful implementation of AI in higher education depends not only on technological infrastructure but also on faculty competence, institutional support, and policy frameworks (Zawacki-Richter et al., 2019). Several key aspects influence faculty and staff readiness for AI integration.

A major factor determining faculty readiness is AI literacy, i.e. the ability to understand, evaluate, and effectively use AI-powered tools in teaching and learning (Ng, 2021). Studies indicate that many educators lack formal training in AI, creating barriers to its adoption (Laupichler et al., 2022). To address this gap, professional development programmes are essential. AI-focused faculty training programmes and workshops can enhance educators' skills in AI-driven instructional design, adaptive learning, and ethical use (Miao et al., 2021). Institutions such as MIT and Stanford University have already incorporated AI training for faculty to improve AI competency in educational settings (Luckin, 2017).

HEIs must ensure the necessary technical infrastructure to facilitate AI integration. This includes providing access to AI-powered learning platforms, data analytics tools, and digital assistants (Bozkurt et al., 2023). Faculty members are more likely to embrace AI when universities allocate funding and offer technical support for I implementation (Siau & Wang, 2020). Additionally, the establishment of AI advisory committees and cross-disciplinary collaborations can further enable AI adoption in teaching and learning (Bond et cl., 2024).

While AI offers significant benefits, faculty members often express concerns over data privacy, algorithmic bias, and the ethical implications of AI-driven decision-making (Jobin et al., 2019). Resistance to AI integration is often linked to fears that AI may replace human educators rather than support them (Cope et al., 2020). Therefore, AI readiness should include institutional policies ensuring human oversight, transparency, and fairness in AI-based education models (Hagendorff, 2020).
In short, the successful integration of AO in HEIs requires a multifaceted approach involving AI literacy training, institutional investment in infrastructure, and ethical guidelines to ensure responsible AI use in education (Sweeney, 2023). AI's potential in HE will be fully realised only when faculty and staff are adequately trained, equipped, and supported for its integration.

AI-Driven Quality Assurance Frameworks

AI is revolutionising QA systems in HE, enhancing monitoring, evaluation, and continuous improvement of educational programmes (Memarian & Doleck, 2023). AI-powered QA frameworks utilise machine learning, predictive analytics, and automation to optimise institutional performance, streamline accreditation processes, and ensure compliance with academic standards (Bozkurt, 2023). AI-driven QA systems assist universities in real-time monitoring of institutional performance. AI-powered dashboards analyse student learning outcomes, faculty effectiveness, and curriculum quality, providing data-driven insights that improve decision-making (Padovano & Cardamone, 2024). For example, Georgia State University has implemented AI-based predictive analytics to track student engagement and academic performance, resulting in improved student retention rates (Chalfin et al., 2022). Similarly, accreditation agencies such as the UK Quality Assurance Agency (QAA) and Singapore's Ministry of Education are integrating AI-driven tools to enhance institutional audits and compliance evaluations (Singapore National AI Strategy, 2023).

AI enhances Qa by automating data collection, analysis, and reporting (Slimi & Carbadillo, 2023). AI-driven analytics can identify teaching effectiveness, detect gaps in student learning outcomes, and recommend curriculum improvements based on student feedback (Gonzalez-Calaayud, 2021). At Stanford University, AI-powered tools are being developed to evaluate faculty performance based on student feedback and engagement metrics (Stanford AI Teaching Initiatives, 2023).
Despite its many advantages, AI-driven QA frameworks raise ethical concerns, particularly data privacy, bias, and accountability (Hagendorff, 2020). AI models trained on historical educational data may reinforce biases in grading, student evaluations, or faculty assessments (Eitel-Porter, 2020). To mitage this, institutions must adopt transparent AI governance frameworks, ensuring algorithmic

fairness and explainability (Jobin et al., 2019). Furthermore, faculty involvement in AI-driven assessments is crucial to ensure human oversight in QA processes (Kumar et al., 2024).
To summarise, AI-powered QA frameworks present unparalleled opportunities to enhance institutional monitoring, accreditation, curriculum evaluation. However, ethical safeguards, faculty engagement, and transparent AI governance must be prioritised to ensure fair and accountable AI-driven QA systems (Sweeney, 2023). As AI technologies advance, universities must embrace responsible AI adoption strategies to sustain quality in HE.

Research Methodology

This research adopted an interpretivist philosophy drawing on both primary and secondary data (Dehalwar, and Sharma, 2023). The research design was qualitative and as argued by Yin (2009), qualitative research methods address the “how” questions. Grounded theory was adopted as it uses an inductive approach and it is used to uncover patterns, behaviours, or concepts that emerge from the collected data (Glaser, 2007). This theory also assisted in interpreting the data and explaining what actually occurs in practice. The inductive research approach was pertinent in this case, to understand how humans interpret the situations, in this case, how the QA experts interpreted the effect of AI on the quality of education at HEIs. This approach allowed for comprehensive exploration of participants' experiences and perspectives, offering valuable qualitative data on the integration of AI in quality assurance systems (Dehalwar and Sharma, 2023).

Between 1st of March and 31st of May 2024, a series of interviews with five QA experts who have worked in different HEIs in the Netherlands and other countries, was conducted. The data collection process involved using semi-structured, open-ended questions (Weller, et al., 2018) to the participants in a one-on-one online interview via MS Teams and literally transcribed (See appendix 1 for interview questions). All interviews were conducted in English, as the experts are all well-versed in the language. Interview questions were developed based on the key conclusions and themes derived from the literature review and previous studies on this topic. A limited pilot study was conducted by interviewing two QA experts to finalize the interview questions. The questions were designed to elicit rich but specific insights into how AI is being leveraged to facilitate educational or curriculum changes and its impact on the robustness of IQA practices in HEIs.

Five IQA experts were selected using a non-probability technique of purposive sampling. Experts were selected based on subjective judgement and it was focused on particular characteristics / qualities of the population in question. In this case, the participants were those who serve the specific purpose of this research’s main objectives (Fife, and Gossner, 2024)For this, the eligibility criteria are as follows:

(1) QA experts with more than five years’ experience in higher education
(2) QA experts actively involved in internal or external quality assurance in higher education
(3) Academics directly involved in accreditation of higher education

Relying on these criteria and individual profiles, five IQA experts were identified. The experts were contacted and informed of the aim of the research in writing via email. The demographic profile of each of the experts is given in the table in Appendix 2. All experts had agreed to their profile being shared in this research and for the interview sessions to be recorded (both video and audio) and literally transcribed. However, their names were excluded for anonymity as per research ethics and they were coded and will be identified as E1, E2, E3, E4 and E5.

The sample size of five expert participants may appear limited; however, it was essential to prioritize the recruitment of research participants possessing in-depth expertise on the topic and a willingness to voluntarily contribute to the study. Some experts were contacted after the initial data analysis for clarification and additional input on emerging themes. This approach proved more effective than engaging a larger number of participants at the potential expense of data quality. The focused selection of highly knowledgeable subjects ultimately yielded richer and more pertinent insights than a broader but potentially less specialized participant pool might have provided.

The automatically recorded transcripts were reviewed for accuracy and corrected where necessary as per the literal responses. The data was then fed into qualitative data analysis software (Atlas.ti) after initial analysis of the quality of the responses in connection to the research focus. All five responses proved to be valid to consider for this analysis. An open coding process was used which generated first order codes/themes in Atlas.ti (Gooyabadi, GorjianKhanzad, and Lee, 2023), via the identification of key themes and patterns in connection with AI integration in IQA systems. This list of initial codes was developed based on evaluation of sentences and paragraphs in the transcripts and then assigned to relevant data segments. In-vivo coding was also used, that is, codes developed from participant's actual words or phrases.

After refining and merging similar codes to ensure consistency, the codes were organised into broader themes or categories to identify patterns in the data. Subsequently, through an iterative process of developing, revising, comparing and recategorizing codes, they were then organised into hierarchies, with main categories and sub-categories.

Findings and Discussion

This section presents the findings based on the interviews of the five QA experts. Three major themes emerged after the analysis. They are (1) Key Challenges in AI-driven IQA Implementation, (2) Best Practices for Overcoming IQA Implementation Challenges and (3) AI's role in IQA Processes. Each of these themes with their respective sub-categories is further detailed below.

Key Challenges in AI-driven IQA Implementation

One of the most significant challenges in implementing AI-driven IQA is faculty resistance. Several experts highlighted concerns regarding the reluctance of educators to modify their traditional teaching and assessment methods. E1 emphasised, "*When people have been teaching a certain module for the last 20 years in the same way, they may not understand why they should start doing things a little differently now.*" He added, *"They don't want to spend time on these kind of internal quality processes because they think you know, for my personal career as well as for the university, it is better if I write a good article for a good journal*." Similarity, E3 observed that faculty members are often too occupied with teaching, research, and administrative duties to engage in internal quality processes. "*Many professors, many teachers will say, I'm already too occupied. I'm too busy….I just don't have time*". These perspectives align with Zawacki-Richter et al. (2019), who argued that faculty buy-in is a major barrier to educational technology adoption. Faculty resistance often stems from fear of change, lack of familiarity with AI tools, and concerns over academic freedom (Laupichler et al., 2022).
Another challenge in AI-based IQA adoption is low engagement from key stakeholders, particularly students. E4 noted that student input is often deprioritised, stating: "*In my experience, student input is often too low on the list, and it's more about faculty and administrators*.". E5 mentioned that students

and external stakeholders often hesitate to participate in IQA processes, leading to a lack of diverse perspectives in decision-making. E5 said, *"There is a general fatigue in the age of constant online presence, about all the surveys and all the emails…*"This reflects previous research by Slimi & Carbadillo (2023) which found that effective AI-driven QA systems require multi-stakeholder participation. Without active engagement, AI-based IQA risks being top-down and disconnected from students' needs.

For AI to be effectively integrated into IQA, strong institutional commitment is essential. E1 noted that many universities lack a centralised system to coordinate AI-based QA or that "*University doesn't have a system yet to get everybody on board*". E3 stated that AI-based IQA can only succeed if senior leadership explicitly supports it, emphasising: "*The institution must have commitment from the very highest levels to integrate AI effectively*."

AI integration in IQA faces several logistical and financial barriers, including resource constraints, bureaucracy and profile differences between universities. Resource constraints, especially in developing institutions, limit the ability to invest in AI infrastructure as noted by E3. E4 stated that AI-based IQA systems tend to become bureaucratic, which can slow down institutional decision-making. E4 also noted that institutional differences in size, structure, and culture make it difficult to replicate best practices across universities. These findings are consistent with Padovano & Cardamone (2024), who note that financial limitations and excessive bureaucracy can hinder AI-driven education reform.

Best Practices for Overcoming IQA Implementation Challenges

One key strategy to overcoming resistance is cultivating a culture of quality in HEIs. E1 emphasised that institutions must foster a mindset where internal quality is a shared responsibility, stating, *"Creating a culture of internal quality is probably the first, very important step….and that everybody needs to be involved… and everybody understands that and not just the accreditation manager*." This view is echoed by the rest of the interviewees, with E4 arguing that QA should focus on people rather than systems, "*It's not about the system, it's about the people making education happen: faculty, staff, and students*." E1 said, "*….staff has to support it that they have to work together in a different way to actually deal with these processes*," while E3 said, "*….professors, professional staff, administrators, alumni and others, their commitment to fully execute and embrace IQA*." These views align with Siau & Wang (2020) who found that institutions with strong quality cultures are more likely to implement AI-driven assessment and curriculum reform successfully. All the experts also agree that leadership commitment and a structured vision and strategy are important in successful implementation of AI-driven IQA. Expert 2 said, "*It will be important that leading professors or Deans are really supportive, who demonstrate the value and get all those dominant stakeholders on board*." E3 echoed these and added, "*…the institution is committed to investing time, talent, resources into the process*."

Another effective approach is to benchmark AI-driven IQA frameworks against successful models from other universities. E3 recommended that HEIs should visit peer institutions to evaluate their AI systems, software choices, and quality assurance processes and "*…so that you can avoid common errors, learn from the good work of others, and enhance upon that work as well*." E3 also suggested that regional and international IQA forums are valuable for sharing best practices and common challenges. This aligns with Memarian & Doleck (2023), who argue that peer benchmarking accelerates AI integration in HEIs by reducing trail-and-error approaches.
Several experts emphasised the need for active student, professional staff, faculty and external stakeholders involvement in AI-driven IQA, as aligned with research by Hagendorff (2020) who stated that transparency and inclusivity in AI-based IQA increase institutional credibility and effectiveness. E4

stated, "….*like staff and faculty, students are also involved and they have a fully fledged decision in the system of quality assurance….to put it bluntly, students matter*." E3 emphasised support from professional staff and said, "*..it's important that faculty know that they won't be responsible for all this work on their own – they will have support from professional staff and others…..there must be professional staff that are responsible for the overall shepherding of the process*."
Transparency, trust and regular communication are also important as stated by E4, "*So it has to be transparent to them. Why it's there? How it works and what their contribution is? And that gives trust and students trust is kind of the oxygen for an institution of higher education…they trust that you provide the education they need and they acquired the qualifications they need in the labor market*." E4 also added that, "*When faculty and staff and students are involved and they have trust in the system, then external stakeholders also can have more trust in the institution…..and they support what's going on*." E3 stressed that, "*The strategy and the commitment to IQA needs to be effectively communicated across the institution….and there must be regular updates about progress that's being made, milestones that are being met and the timetable that we're on that's critically important*."

AI's Role in IQA Processes

AI plays a crucial role in optimising assessments by improving grading efficiency, personalising assignments, and providing real-time feedback. Experts in the study highlighted that AI enhances assessment methods in multiple ways. E1 noted that AI has the potential to personalise assignments, ensuring that students receive tailored learning experiences based on their unique progress and needs. E3 pointed out that AI-driven grading systems can automate feedback, reducing faculty workload while maintaining accuracy and fairness in student assessments. E3 said, "*AI can help us because if you can feed it in and have a first draft of what each student did then, you can make a perfect feedback in a much faster time …something that is very much appreciated by* students."
Similarly, E5 emphasised the benefits of AI in student learning analytics, allowing institutions to track academic performance trends and intervene when necessary to support struggling students. These findings align with previous research by Gonzalez-Calatayud (2021), who reported that AI-powered assessment improves grading efficiency and student engagement. Automated grading and real-time feedback mechanisms enable students to understand their strengths and weaknesses more quickly, fostering a more interactive and responsive learning environment. Moreover, AI's ability to analyse vast amounts of student performance data allows educators to refine instructional strategies, ensuring that assessment methods align with desired learning outcomes. However, for AI to be effectively integrated into IQA processes, institutions must ensure that AI-driven assessments complement traditional evaluation methods rather than replace human judgement entirely.

Expert 1 opined that AI can be used as an enabler in IQA systems, "*If you have defined certain learning objectives then you can use AI to see whether those learning objectives have been properly formulated in all the modules in a particular programme….AI will play a role in a programme development both from a content point of view, from an assessment point of view and from an internal quality assurance point of view*." He also added that using AI to analyse university programmes can accord more time for faculty to look at the analysis and make the improvements needed. In addition to this, according to E3, AI can be used in advising and counselling students, in coaching and providing them with tutorial support and it can be part of "*part of our tool box….it can operate 24 hours a day, seven days a week, to engage with our various stakeholders*."

Despite the numerous benefits AI offers in assessment and evaluation, its adoption in IQA processes raises ethical concerns related to algorithmic bias, data privacy, and governance frameworks. Expert 1 pointed out that AI systems, particularly those trained on historical data, may exhibit algorithmic bias,

potentially leading to unfair assessments of students from different backgrounds. E1 said, "*…the database is what it is, so that includes also biased information…sometimes even fake* information." E2 echoed, "*…there is no fact checking in it, you really notice it not only the language but also there are mistakes and* mistakes." If AI models are not properly calibrated, they risk reinforcing existing inequalities rather than promoting fairness in education. E3 warned, "*AI platforms are only as valuable and dependable as the way they've been constructed and they are always learning, they're always improving, and what we have to be very cautious about is depending upon AI generated responses as being 100% valid or correct*."

Another major concern is the reliability of AI-generated feedback. Expert 3 emphasized that while AI can assist in marking assignments and providing recommendations, it lacks the human judgment required for nuanced evaluations. AI-driven feedback may sometimes misinterpret students' responses, leading to inaccurate assessments. Therefore, human oversight remains a critical component of AI-assisted evaluations, ensuring that automated systems do not compromise the integrity of grading and feedback processes.

Furthermore, Expert 5 highlighted the need for structured AI governance frameworks to regulate how AI is deployed in IQA. Without clear policies, institutions may struggle to maintain transparency in AI-driven decision-making. This aligns with research by Eitel-Porter (2020), who warns that higher education institutions must implement robust AI governance frameworks to ensure accountability and ethical use of AI in quality assurance. Institutions must establish guidelines on AI transparency, data protection, and fairness in assessment to prevent AI from being misused or leading to unintended negative consequences.

To address these ethical challenges, universities should implement regular audits of AI-driven IQA tools to detect and mitigate bias. Additionally, faculty and students should be educated on the responsible use of AI in assessments, ensuring they understand both its benefits and limitations. By adopting a well-structured governance model, institutions can harness the power of AI while safeguarding academic integrity and promoting equitable educational opportunities for all students.

The integration of AI into Internal Quality Assurance (IQA) processes requires comprehensive capacity building and training for both faculty and students to ensure effective adoption and utilization. Expert 1 emphasized that "faculty members have to at least learn about these tools…students also need to be aware that it is not perfect" and that "everybody in the university should take a course on AI to understand its implications in education." The lack of AI literacy among educators is a significant barrier to its implementation, as 95% of faculty members teaching today have never had AI training as part of their education, "*faculty members probably have to go back to school and learn about what AI can mean for them in their particular education."* (E1). This sentiment aligns with Laupichler et al. (2022), who argue that AI readiness in higher education is contingent on structured faculty training programs that move beyond informal learning into institutionalized curricula. Faculty members unfamiliar with AI often approach it with scepticism or fear, which can hinder its adoption in teaching and assessment. Expert 1 further pointed out that structured AI training would enable faculty to engage in meaningful discussions about its integration into curricula, rather than resisting it due to uncertainty. This aligns with Ng (2021), who emphasized that AI literacy is not just about using the tools but also about understanding their ethical implications, biases, and limitations.

Beyond basic AI literacy, institutions must integrate formal AI training programs into research and quality assurance processes. Expert 2 mentioned that some universities have begun offering courses in research design that incorporate AI tools for literature searches, research question formulation, and

data analysis. However, strict ethical guidelines must be in place to prevent AI misuse, such as using AI for idea generation and text enhancement rather than allowing it to replace academic writing entirely. Expert 3 highlighted the need for ongoing assessment of AI tools to ensure they truly enhance faculty and student performance, reinforcing the idea that AI adoption should be continuously monitored and adjusted to meet institutional needs. This perspective is consistent with Memarian & Doleck (2023), who argue that AI training should be dynamic and responsive, evolving alongside technological advancements. Additionally, Expert 5 noted that AI should be incorporated into student performance evaluations, ensuring that its role in learning remains constructive rather than disruptive. Ultimately, for AI to be effectively embedded into IQA frameworks, institutions must prioritize structured training programs, continuous evaluation, and ethical AI governance, ensuring that both faculty and students are adequately prepared for AI-driven educational transformation.

Conclusion

The findings indicate that AI has the potential to revolutionize IQA processes by automating assessments, personalizing learning, and enhancing institutional monitoring. However, its success depends on faculty readiness, stakeholder engagement, and strong governance frameworks. These results align with Sweeney (2023), who argues that AI should complement—not replace—human educators in quality assurance processes. While some experts were sceptical about AI's role in academic assessments, others acknowledged that AI tools provide essential real-time feedback, plagiarism detection, and performance tracking (Bond et al., 2024).

One of the most critical insights from the research is that successful AI integration in HEIs requires cultural transformation. Faculty resistance remains a significant barrier, and AI literacy training must be prioritized (Laupichler et al., 2022). Additionally, students must be included in AI-driven quality assurance discussions, as their perspectives enhance decision-making (Slimi & Carbadillo, 2023). Furthermore, AI ethics and governance remain key concerns. Experts highlighted that institutions must adopt AI policies that prevent algorithmic bias and ensure transparency (Jobin et al., 2019). Universities that proactively address these challenges will be better positioned to integrate AI into IQA frameworks in a sustainable and responsible manner.

There are three recommendations highlighted by experts. Firstly, they must develop a quality culture in the institution. A strong quality culture is essential to ensuring the successful implementation of QA and specifically AI-driven QA processes. AI can significantly enhance assessments, accreditation, and institutional monitoring, but without a deeply embedded culture of quality, its integration may face resistance, inefficiencies, and ethical challenges. AI alone cannot improve quality unless faculty, staff, students and other stakeholders actively engage in the process (Bozkurt et al., 2023). This perspective aligns with Siau & Wang (2020) who argue that technology is only as effective as the institutional mindset and governance structures supporting it. A well-developed quality culture ensures that AI implementation is not seen as a mere compliance requirement but as a valuable tool for continuous improvement.

Secondly, for HEIs to fully harness the potential of AI in IQA processes, they must prioritize AI literacy training for staff, faculty and students. As AI becomes increasingly integrated into teaching, learning, and assessment, faculty members must develop the skills necessary to navigate AI-powered tools effectively. Many educators, particularly those who have been in academia for decades, lack exposure to AI and may resist its adoption due to uncertainty or scepticism. Similarly, students must receive AI training to ensure they understand both its benefits and limitations. This aligns with Ng (2021), who argues that developing AI literacy among students ensures they can critically evaluate AI-

generated content and avoid over-reliance on automated tools. Universities should invest in mandatory AI training courses, workshops, and certification programs that build both technical proficiency and ethical awareness, ensuring AI is leveraged effectively to enhance educational quality. Thirdly, beyond AI literacy, universities must ensure that AI-driven quality assurance frameworks are transparent, inclusive, and ethical. AI has the power to streamline accreditation processes, automate assessments, and monitor institutional performance, but without clear governance, it may introduce biases, data privacy concerns, and opaque decision-making. AI must also be inclusive, ensuring that decisions about curriculum adjustments, faculty evaluations, and student assessments are informed by diverse perspectives. Stakeholder engagement is crucial to AI's successful implementation. This perspective aligns with Eitel-Porter (2020), who stresses that AI governance in HEIs must be structured to prevent algorithmic bias and ensure human oversight. To achieve this, universities should establish AI ethics committees, provide transparent reporting on AI-generated assessments, and create open channels for feedback from students and faculty. By fostering a culture of inclusivity and accountability, institutions can maximize AI's benefits while ensuring that its integration into IQA aligns with academic integrity, institutional goals, and ethical standards.

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Appendix

Table 1: Profile of Research Participants

Participant Code	Position	Country of Origin	Duration of Interview
E1	• Held a top position in AACSB (Association to Advance Collegiate Schools of Business • Professor in Higher Education and Active Researcher • has contributed to various international accreditation organisations such as AACSB, EFMD and AMBA • has published more than	The Netherlands	47 min 32 sec
E2	• Professor at a top university in Amsterdam, the Netherlands • Has been involved as a panel chair for both FIBAA and NVAO • Has chaired review panels for accrediting programmes, including at Wittenborg University of Applied Sciences	The Netherlands	27 min 34 sec
E3	• Held a top position in AACSB (Association to Advance Collegiate Schools of Business) • Ex-President of top university in Georgia, USA • Has a long history in academic leadership and business education • Has been involved in many accreditation and quality enhancement activities in higher education	United States of America	34 min 4 sec
E4	• An ex-board member of NVAO (Accreditation Organisation of the Netherlands and Flanders) • Has a strong background in higher education quality assurance • Has contributed to policy development at national level in the Netherlands	The Netherlands	24 min 37 sec

E5	• Senior Expert in Quality and Handset and Accreditations at a university in Budapest • Specializes in maintaining high academic standards and has been instrumental in managing quality assurance processes, particularly within higher education institutions seeking international accreditations and recognition	Hungary	57 min 29 sec