Research Square

Preprints are preliminary reports that have not undergone peer review.
They should not be considered conclusive, used to inform clinical practice,
or referenced by the media as validated information.

Prospects for the Use of Artificial Intelligence (AI) in Educational Quality Assurance Agencies: A Multi-Method Qualitative Study

Lika Kutelia

l.kutelia@eqe.ge

LEPL - National Center for Educational Quality Enhancement (NCEQE)

Lasha Zivzivadze

LEPL - National Center for Educational Quality Enhancement (NCEQE)

Lasha Margishvili

LEPL - National Center for Educational Quality Enhancement (NCEQE)

Research Article

Keywords: Artificial Intelligence, NCEQE, Georgia, Educational Quality Assurance, ENQA, AI in Higher Education QA, AI in Organizational Development

Posted Date: March 23rd, 2026

DOI: https://doi.org/10.21203/rs.3.rs-9136139/v1

License: This work is licensed under a Creative Commons Attribution 4.0 International License.
Read Full License

Additional Declarations: No competing interests reported.

Abstract

The integration of artificial intelligence (AI) into educational systems is progressively discussed, offering opportunities for policy development, improved teaching and learning, and streamlined administration. This Thematic Analysis, aligned with The Standards and Guidelines for Quality Assurance (ESG) in the European Higher Education Area (EHEA), standard 3.4, initiated by the National Center for Educational Quality Enhancement (NCEQE), examines how AI is used by 52 selected full-member agencies of European Association for Quality Assurance in Higher Education (ENQA). The study explores AI adoption in organizational processes and external educational quality assurance (QA) mechanisms to identify trends, good practices and challenges. A multi-method qualitative approach was applied, combining desk research and an online survey. Desk research highlights AI's potential to enhance teaching quality, assessment, and personalized learning in higher education, necessitating adjustments in QA mechanisms. Survey responses from 18 agencies indicate early-stage AI adoption, with six agencies (33%) implementing it to streamline workflows, analyse data, or increase administrative efficiency, primarily using ChatGPT and Microsoft Copilot. Three agencies reported AI use in external educational QA processes: HAKA - in piloting phase, for documenting council decisions and drafting meeting minutes; NOKUT - for program accreditation screening, in Thematic Analysis, and statistical analysis of external evaluations; and, ZEvA - for textual analysis of higher education institutions' (HEI) self-assessment reports. Only NOKUT has a formal AI regulatory framework. Key challenges include data protection and staff expertise issues. Remaining 12 agencies plan future adoption of AI. These insights support NCEQE in exploring AI integration and advancing understanding of AI's role in higher education QA.

Introduction

In 2024 Georgia became one of the first signatory countries to the Council of Europe's Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law [1, 2]. The Convention is the first binding international agreement aimed at ensuring that the development and use of AI systems align with the principles of human rights, democracy, and the rule of law [2]. Although it does not explicitly focus on the education sector, its general principles are applicable across all domains, including the education system.

In the context of expanding opportunities for the use of AI, the system of QA in education cannot be overlooked, as its primary objective is to support, evaluate, and continuously monitor the compliance of educational institutions and programs with established standards. Accordingly, it is suggested to consider the potential and future prospects of utilizing AI within the activities of educational quality assurance agencies.

This study aims to identify opportunities for applying AI in both external quality assurance mechanisms in higher education and the internal institutional processes of a national quality assurance agency - specifically, LEPL - National Center for Educational Quality Enhancement (hereafter - NCEQE). In order to achieve this aim, the study pursues the following objectives:

- To examine international best practices regarding the use of AI in quality assurance processes in HEIs.
- To explore the use of AI within the internal quality mechanisms of European Association for Quality Assurance in Higher Education (hereafter – ENQA) member agencies, including its application in administrative, analytical, and data management processes;
- To analyze the application of AI in external quality assurance mechanisms in education, with a particular focus on the authorization (institutional accreditation) of higher education institutions;
- To outline key challenges based on international practice and, in the context of Georgia, to develop context-relevant recommendations for integrating AI into the operation of the NCEQE.

To address the study objectives, multi-method qualitative approach was applied, combining desk research and an online survey.

Methods

The study used a multi-method qualitative research design, combining desk research, an online survey, and comparative analysis to explore the use of AI in quality assurance processes in higher education. The study was conducted during the period from March to June 2025.

Desk research was conducted as part of a scoping review approach to examine international practices of using AI in higher education institutions. Inclusion criteria for the desk research included studies/academic publications and institutional reports published between 2015 and 2024, on the application of AI in processes under external educational or internal/institutional QA systems, conducted in the European Union (EU). Exclusion criteria included studies without empirical or policy-relevant content, and inaccessible full texts. The aim of the desk research was to examine international practices and initiatives that gives the opportunity to open discussion for integrating AI into the external quality assurance mechanisms in higher education system in Georgia and to illustrate potential applications. The collected sources were analyzed using qualitative thematic analysis to identify key international trends and existing practices of AI application in higher education systems.

An online survey using a mixed-type questionnaire (including both closed and open-ended questions) was administered to representatives of educational quality assurance agencies. The selection criteria for agencies included: Full membership in ENQA and operation within the European continent. A total of 52 QA agencies met these criteria and were included in the study. The survey was designed to explore the following dimensions [Table 1]. The full survey instrument is provided as Supplementary Information [Online Resource 1].

Table 1
Survey criteria and indicators. This table presents the main criteria used to evaluate AI integration in QA agencies and the specific indicators used to assess each criterion

Criteria	Indicators
Adaptation of administrative processes to AI technologies	Areas of AI application in agency activities (internal quality mechanisms, analytics, and external quality assurance processes)
	Forms and impact of AI integration into processes
	Existence and purpose of a regulatory framework for AI
Challenges and barriers	Obstacles to the implementation and use of AI; Approaches to overcoming them
Human resources and organizational adaptation	Staff acceptance and adoption of AI
Effectiveness of AI use	Manifestations of AI effectiveness in QA processes

The collected data were analyzed using a mixed-method approach. Qualitative data from open-ended survey questions were analyzed thematically to identify key categories and patterns. And, the occurrence of these categories was subsequently analyzed, alongside quantitative data derived from closed-ended survey items, to determine their frequency and prevalence.

A qualitative comparative analysis was conducted to cross-examine the experiences of surveyed based on the defined criteria. The goal was to identify shared trends, contextual differences, and innovative practices relevant to the use of AI in QA.

Exploring AI integration initiatives and experiences within the QA agencies will significantly support NCEQE to determine the potential for its use in both internal institutional and external education quality assurance processes.

To support the development of this paper, ChatGPT (OpenAI, 2024) was used as an AI-powered writing assistant, primarily for structuring the content, editing language and style, and locating relevant source material. All AI-generated suggestions were critically reviewed and revised by the authors to ensure academic integrity and alignment with the study's goals.

Results

Results of Desk Research - AI in Higher Education Institutions

European Policy Frameworks and Strategic Documents

While not explicitly addressing educational quality assurance, several European initiatives provide foundational guidance for integrating AI into education more broadly:

The *Digital Education Action Plan 2021–2027* promotes digital transformation in education systems across the European Union. The plan includes key activities, the results/products of which can help identify the needs within the education quality assurance system for AI integration:

- Action 6 - Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning for educators [3].
    - In 2022, the Commission published relevant guidelines to help educators understand the potential and possible risks of using artificial intelligence and data in education, enabling them to use AI systems productively and ethically.
- Action 7 - Common guidelines for teachers and educators to foster digital literacy and tackle disinformation through education and training.
    - In 2022, the Commission developed a relevant guideline, which includes practical advice and activity plans for teachers and educators on the topic.
- Action 8 - Updating the European Digital Competence Framework to include AI and data-related skills [3].
- As a result, the European Commission has updated the Digital Competence Framework (DigComp 2.2) which introduces AI-related competencies and includes over 70 practical examples of AI in everyday life [4].

The *European Strategy for Artificial Intelligence* emphasizes a human-centric and trustworthy AI ecosystem, while the AI Continent Action Plan 2025 outlines strategic steps to foster AI adoption across sectors, including education [5].

These documents establish a policy environment that supports the responsible integration of AI technologies in education, laying the groundwork for institutional and quality-related adaptation.

AI Application in Higher Education

The desk research revealed that the integration of AI into QA systems in higher education has not yet been directly explored on a European scale. Consequently, the research aimed to identify studies that indirectly inform the role of AI in educational QA, particularly through the lens of AI applications in HEIs.

Recent studies across Europe offer practical insights into the integration of AI in HEIs, particularly in teaching, learning, and student assessment processes.

AI in Teaching, Learning and Assessment

A notable example is the systematic review by Víctor González-Calatayud et al., which examined 449 studies conducted between 2010 and 2020 on the use of AI in student assessment. From this pool, 22 studies were selected for in-depth analysis based on predefined criteria. The findings revealed that AI is primarily used in STEM disciplines, language learning, and health sciences. Importantly, the review highlights AI's growing role in formative assessment through platforms such as *dotLRN*, [1]which support collaborative student learning environments [6].

More than a dozen studies have examined the use of AI in automated student assessment. For example, Rhienmora et al. introduced a system using AI and virtual reality (VR) to assess dental procedures through real-time performance monitoring [7]. Other studies explore AI's use in evaluating learning outcomes in programming [8], in automatically evaluating engineering essays and English language proficiency as reported in the systematic review [6].

Several studies also emphasize AI-driven automated feedback mechanisms. Goel and Joyner for instance, showcase AI's ability to assist educators in managing large student cohorts by generating timely and personalized feedback [9]. Additionally, AI contributes to competency-based learning, including applications such as patient information gathering and personalized e-learning via Computer Adaptive Testing (CAT) [6].

Comparative research supports the reliability of AI-based assessments. According to a systematic review, AI-generated scores in the study by Grivokostopoulou et al. were strongly correlated with teacher evaluations, although instructors tended to give slightly higher marks [8, 7]. Furthermore, students using AI-supported platforms during the learning process outperformed their peers: Samarakou et al. report that students using AI scored 17% higher on written assessments compared to those who did not [24].

Williams examines the use of generative AI in assessment, arguing that it can improve both the design of evaluations and the delivery of feedback. His case study illustrates how AI can support more authentic, flexible, and individualized assessments. However, widespread implementation remains challenging due to institutional preferences for traditional methods and concerns over academic integrity [10].

In response, Webb outlines three institutional strategies:

1. A return to in-person exams;
2. The development of assessments beyond the current capabilities of AI;
3. The redesign of assessments to incorporate AI use responsibly.

The third approach includes student training on ethical AI use and developing critical evaluation skills for AI-generated outputs [10].

Generative AI, such as ChatGPT, can also provide continuous formative feedback [11], support self-directed learning, generate assessment rubrics [12], and simulate real-life scenarios for case-based learning in fields like medicine and law.

Researchers further call for a reevaluation of assessment strategies to uphold academic integrity, promote critical thinking, and support the responsible use of AI [13]. Collectively, these studies suggest that integrating AI into teaching and assessment requires not only technological readiness but also pedagogical innovation, ethical frameworks, and institutional support.

AI and Academic Integrity

The integration of artificial intelligence into higher education provides both opportunities and ethical challenges. As AI technologies are increasingly integrated into academic settings, there is a growing consensus on the need for educational regulations that promote the responsible use of AI [14, 15].

Within the framework of the European Network on Academic Integrity (ENAI), Foltynek et al. emphasize that the absence of ethical guidelines risks undermining education quality and academic integrity. Universities are urged to develop clear internal policies on AI use, raise awareness of AI's risks and benefits, and implement monitoring mechanisms [16].

Cotton et al. explore challenges and benefits of ChatGPT use, noting its potential to support personalized learning and assessment. However, risks such as plagiarism, unfair advantages, and challenges in verifying authentic student knowledge remain. Recommended strategies include plagiarism awareness, draft submissions, robust detection tools, clear usage guidelines, mixed automated and manual assessments, and promoting critical thinking and original work through diverse evaluation formats [17].

Aler Tubella et al. reviewed key EU initiatives - such as the Ethics Guidelines for Trustworthy AI (2019) and the AI Act (2021) - highlighting challenges in translating these principles into educational practice. Their study, based on expert interviews and literature review, similarly, proposes educational strategies including integration of AI ethics across curricula, active problem-based learning, interdisciplinary collaboration, and relevant legislation related to educational activities. Core competencies recommended for students cover technical AI understanding, ethical awareness (fairness, accountability, transparency), social impact assessment, and skills in communication and reflection. Institutional support through faculty training, open resources, updated curricula, and assessment tools is essential [18].

Joudieh et al. examine the challenges to academic integrity posed by AI, highlighting the risks that teaching and learning may be constrained if AI use is mandated without appropriate safeguards. They propose strategies such as ethical AI use agreements, disclosure requirements, updated plagiarism definitions, and mixed verification methods to uphold academic integrity [19].

Survey Results on European QA Agencies' Experience

Authors surveyed 52 ENQA member agencies and received responses from 18 (35%). Key findings, based on the defined methodology, are summarized below.

Despite the growing global trend of AI usage, its integration within the selected agencies is still at an early stage. Only six out of 18 agencies (33.3% of the total) have started processes of AI integration in their activities. These agencies are: Canary Islands Agency for University Quality and Educational Evaluation (ACCUEE) [Spain, Canary Islands]; Estonian Quality Agency for Education (HAKA) [Estonia]; Norwegian Agency for Quality Assurance in Education (NOKUT) [Norway]; Andalusian University Quality Agency (AQUIB) (Spain); Central Evaluation and Accreditation Agency Hannover (ZEvA) [Germany]; Slovenian Quality Assurance Agency for Higher Education (SQAA) [Slovenia]. Notably, in these agencies AI is primarily used for data processing and analysis, administrative automation, text and language-related tasks and information/idea generation support. Among the given agencies, three agencies explicitly stated that they use AI in external QA processes: HAKA uses it in the piloting phase (not yet systematically), for preparing decisions of the councils and working groups, and drafting meeting minutes; NOKUT utilizes AI in the thematic analysis of NOKUT's periodic review cycle (from 2017–2024); in the application screening process - to filter out incomplete applications for accreditation (to streamline workflow); for analyzing and summarizing textual data/responses to open-ended questions; using generative AI tools (e.g. Copilot, ChatGPT) and, in statistical analysis for external evaluations. ZEvA uses AI for textual analysis of HEI's self-assessment reports.

Key factors and underlying rationale that influenced the six participating agencies' decision to implement AI in their operations, are as follows (numbers represent mentions, as one respondent may report multiple factors underlying AI use): work efficiency and process optimization (n = 5); alignment with technological developments (n = 2); national policy and governance requirements including financial support (n = 1).

As for the key barriers/challenges associated with the adoption and utilization of AI, according to these six agencies, they were (numbers represent mentions of barriers rather than the number of agencies): Data Protection/legal issues (n = 5); competency in AI use (n = 2); and technological issues (n = 1).

In order to mitigate abovementioned risks of utilizing AI, the agencies have not yet developed formal strategies. However, several measures were implemented by five of the participants. The primary measures to minimize data protection risks were the use of licensed versions of AI and choosing AI tools that do not transmit internal data externally (n = 2): ZEvA started using the Adobe AI assistant, ("because it does not use internal data to train its AI and does not send internal data to an external server"); NOKUT prohibited the use of ChatGPT for work, and allowed only the licensed version of MS Copilot. Another approach involved risk-benefit analysis and receiving training on AI (n = 3): HAKA was analyzing risks and possibilities related to AI use in the agency (in addition, stated: "we strive to prevent inputting personal data into the system"). AQUIB was undergoing training and experimenting with AI in minor tasks to develop competence in its use. The ACCUEE was also receiving training on AI, but regarding the implementation ESG-driven processes the agency is taking cautious approach (has not yet applied AI in it).

Regarding the extent to which staff members are embracing and involved in the implementation of AI, agencies mostly report that their employees are still testing AI (n = 5). In addition, there are a few

separated cases of other supporting initiatives towards AI integrations within the agencies: some employees have participated in capacity-building activities related to AI use; some colleagues are working on mapping the possibilities of AI within the workflow of quality agency (HAKA); The agency has established a separate digitalization committee to look at the needs, strategies and challenges related to digitalization and the use of AI tools across it various work processes (NOKUT).

On the extent of AI's operational efficiency and the areas in which its benefits are mostly established, the results are as follows (numbers represent thematic mentions, as one agency may contribute to multiple themes): Four mentions were related to benefits in administrative and analytical tasks (e.g. Chatbots providing help on the agency website; handling repetitive and routine tasks, technical work, translation, and data analysis); Two mentions reflected an overall positive attitude and recognized the potential of AI. Two mentions referred to benefits for external QA processes (one expressed caution, while the other was willing to use AI primarily to assist in external QA procedures). In addition, four mentions emphasized that AI is still in the testing stage/not yet adopted a systematic approach, and noted the need for time to build a repertoire and make staff comfortable with its use.

Among the remaining 12 agencies (66.7%) not yet using AI, five agencies (41.7%) - Agency for Quality Assurance and Accreditation Austria (AQ) [Austria], Romanian Agency for Quality Assurance in Higher Education (ARACIS) [Romania], Quality and Qualifications Ireland (QQI) [Ireland], Valencian Agency for Assessment and Forecasting (AVAP) [Spain], and Swiss Agency for Accreditation and Quality Assurance (AAQ) [Switzerland] - have indicated plans to integrate AI in the nearest future.

Regarding the regulatory frameworks or institutional policies governing AI deployment in managerial, core, or supporting operational processes, out of all survey participants (n = 18), only NOKUT (Norway) reports having "internal regulations on AI" (which cannot be shared externally), aligned with national policy documents (National Strategy for Artificial Intelligence [24], Information and Communication Technology (ICT) Policy documents [25], NOKUT's Strategy for 2023–2030 [26], in line with its status as a public agency. Additionally, four from the surveyed agencies discuss forthcoming regulatory or institutional frameworks for AI governance:

- AQ (Austria): Policy adoption is expected by the end of 2025, covering both internal and external agency processes.
- ARACIS (Romania): AI regulations in higher education are under consideration at the national level. ARACIS is exploring the potential of AI in quality assurance through functions such as document structuring, information extraction, and completeness verification of HEI-submitted documents.
- QQI (Ireland): No policy has been adopted yet, but AI is currently being piloted in specific areas of agency activity.
- HAKA (Estonia): Guidelines are under the development.

The survey dataset is provided as Supplementary Information [Online Resource 2].

Discussion

Exploring the Possibilities for Integrating AI into the Authorization Standards of Georgian Higher Education Institutions

Findings from the desk research confirm the inevitability of integrating AI into the teaching and learning processes in higher education, while highlighting both emerging opportunities and persistent challenges. On the one hand, the findings point to the vast potential of AI to enhance quality of teaching and learning (particularly personalized learning pathways), as well as to improve the efficiency of student assessment and feedback delivery. On the other hand, there is a growing consensus on the need for educational regulations that ensure the responsible use of AI and uphold academic integrity. Taken together these developments naturally raises important implications for quality assurance systems in higher education. It is advisable to commence the discussion with introduction and use of artificial intelligence within the framework of the authorization (institutional accreditation) standards for Georgian Higher Education Institutions [23].

The main domains of the authorization standards for HEIs operating in Georgia are discussed below, indicating areas where it is appropriate to integrate AI based on the requirements of modern reality:

1. Mission and strategic development of HEI

The current version of the authorization standards places significant emphasis on the strategic vision and developmental goals of HEIs. Specifically, under Substandard 1.2 Strategic Development, it is advisable to include evaluation criteria and relevant indicators that address the implementation and use of AI [23]. The desk study highlights that a specific action plan is needed at the institutional level, which, in turn, ensures the reality of AI integration. Accordingly, it is recommended that the HEI's action plan clearly outline the activities to be carried out in connection with or through AI engagement, with specific implementation timelines, performance criteria, and resources (material, financial, and human) required for implementation.

2. Organizational structure and management of HEI

The Substandard 2.3 - Observing principles of ethics and integrity is one where the integration of AI is directly related to ethical frameworks. As discussed by Foltynek et al. [16], Cotton et al. [17] and Aler Tubella et al. [18], integrating AI requires clear institutional policies that establish explicit usage guidelines, and ensure transparency and accountability. Although the current substandard includes plagiarism detection, it does not address AI-generated content. In this regard, it is advisable that the substandard’s evaluation criteria reflect the following responsibilities of the higher education institution:

- Codifying AI use in the institution’s code of ethics;
- Promoting awareness and responsible AI use across the university community;

- Establishing procedures for responding to unethical AI use.

In Addition, it is advisable for the HEIs to begin considering the integration of AI in their internal/organizational processes.

3. Educational Programs

There is significant potential for AI integration in the development of educational programs (in line with substandard 3.1 [23].

A systematic review by Víctor González-Calatayud et al. reveals that AI is successfully applied in STEM disciplines, language learning, and health sciences [6]. Additionally, Guo and Wang highlight that Generative AI can simulate real-life scenarios to support case-based learning in fields like medicine and law [11]. Since the design and development of educational programs require HEIs to regularly update programs in response to changing conditions, this creates a timely opportunity to consider the use of AI as a methodological tool within program structures, particularly in STEM disciplines medicine, health sciences, law and linguistics.

Studies by Grivokostopoulou et al. and Samarakou et al. show that AI can accurately assess assignments in ways consistent with human evaluation, while reducing bias [8, 24]. Accordingly, as part of Substandard 3.3 (Assessment of Learning Outcomes assessment) [23], the gradual integration of AI-supported assessment methods could be considered as an alternative or supplementary approach in higher education.

4. Staff of the HEI

Based on the data obtained in the study, it is clearly confirmed that the integration of AI is also possible in the direction of developing the skills and competencies of university staff. The effective use of AI depends on the readiness of academic and administrative staff for such technological adaptation.

Accordingly, it is advisable for HEIs to consider Integrating AI-related training into professional development programs for academic and administrative staff. In addition, offering retraining modules specifically tailored to faculty members, would be beneficial in equipping them with practical AI-related competencies [20, 21, 22].

5. Research, development and/or other creative work

The research activities of HEIs, which includes scientific work in collaboration with society and aimed at creating public benefit, allow for the integration of AI as an auxiliary tool at both the content and procedural levels. This would support improving the quality of university research and innovation projects and saving human and administrative resources.

Opportunities for the integration of AI into NCEQE operations

Drawing on the experiences of the surveyed QA agencies, several opportunities can be identified for integrating AI into the operations of the NCEQE. Accordingly, the priority areas for AI integration on the level of internal organizational processes, might include: administrative automation, document management, data organization, sorting and analysis, as well as strategic communication activities.

The key concerns, identified by the agencies, associated with the adoption and utilization of AI, include data protection/legal issues, staff competency in AI use and organizational level of technological readiness. These factors should be carefully considered prior to the implementation of AI. To mitigate these relevant risks, NCEQE should develop a strategic approach for the effective and responsible adoption of AI and ensure adequate technological and staff readiness. First, Institutional governance and policy frameworks should be established or adapted to guarantee compliance with global/national ethical and legal standards for the use of AI technologies. Based on the measures implemented by the surveyed agencies, NCEQE should ensure that AI use within the organization complies with data protection regulations. This includes the implementation of properly licensed AI platforms and tools configured to prevent the external transmission of internal data, thereby safeguarding personal and confidential information.

To develop AI competencies among staff members, the agencies were participating in capacity-building activities, which are also recommended for NCEQE. These include providing training and retraining, for the staff members, on the technical and ethical use of AI, including Generative AI. In addition, it is advisable to promote the use of specialized tools (e.g., MAXQDA AI Tool) for efficient analysis of large-scale qualitative and quantitative data.

For other organizational benefits, considering the practices of the surveyed agencies, the following measures are recommended for NCEQE: specifying the potential applications of AI within the agency's workflow; designating responsible units or staff to oversee AI-related activities, and, encourage small-scale pilot projects as an initial step toward AI integration.

As regards the use of AI in external QA processes, although such use is not yet systematic, several existing practices in the European agencies, can be taken into account by NCEQE, including the application of AI in thematic analysis as outlined in ESG 3.4 [25], the analysis of HEI's self-assessment reports, the screening of authorization/accreditation applications for compliance with formal requirements, statistical and qualitative analysis, and the drafting council decisions and meeting minutes. Furthermore, AI may also prove effective in other activities. This would be supported by mapping the procedures within the external QA mechanisms, where AI could be introduced. At the same time, as discussed above, issues that require a cautious approach, particularly, data protection and the responsible use of AI, must be considered accordingly.

Key Limitations

While the study offered valuable insights into the needs of educational QA system of Georgia (particularly, in the authorization process of HEIs) to respond to modern technological advancements, several limitations should be acknowledged.

Although the qualitative responses provided rich insights, the quantitative analysis of the data was limited by relatively low response rate (18 out of 52 agencies; 35%) which constrained the representativeness of the targeted population and limited generalization of the findings.

The survey didn't distinguish between different forms of AI, and, as a result, QA agencies may have had differing understanding of AI, which reduced the specificity of responses in this regard.

Finally, scarcity of existing studies on the use of AI in Educational QA, which could have served as a foundation for the given research, may have limited our understanding of the full spectrum of potential AI implications in this context.

Conclusions

To contribute to the emerging debate on AI's use in the educational process, this study provides a valuable foundation for initiating discussion on integrating the responsible use of AI into Georgia's education quality assurance system, particularly in the process of authorization/institutional accreditation of HEIs, considering the inevitability of AI utilization in daily life. Launching this discussion is highly dependent on the interest of higher education system representatives, with particular emphasize on HEIs, and should be grounded in scientific evidence.

The study provides the very first exploration of Authorization Standards domains of Georgian higher educational system, where AI integration might be applicable and requires further investigation and discussion to assess its potential implementation and impact, drawing on existing research on AI in teaching, learning and assessment and considering the perspective of academic integrity. Despite the lack of prior studies, this research lays a foundation for future study initiatives exploring the potential of AI in educational quality assurance. And, this aspect can be considered as an added value of the present research.

Furthermore, the study explored the experiences of QA agencies to identify areas for AI integration into the internal organizational processes and external educational QA mechanisms of NCEQE. Identified areas included administrative and data management processes, application screening, various types of analysis and reporting, and strategic communication activities. Valuable decision-making in this context could be further supported by mapping the procedures within the QA agency and its external educational QA mechanisms, where AI integration may be both efficient and effective.

Abbreviations

AAQ
Swiss Agency for Accreditation and Quality Assurance (Switzerland)
ACCUEE
Canary Islands Agency for University Quality and Educational Evaluation (Spain)
AI

Artificial Intelligence

AQ

Agency for Quality Assurance and Accreditation Austria (Austria)

AQUIB

Andalusian University Quality Agency (Spain)

ARACIS

Romanian Agency for Quality Assurance in Higher Education (Romania)

AVAP

Valencian Agency for Assessment and Forecasting (Spain)

CAT

Computer Adaptive Testing

EHEA

European Higher Education Area

ENAI

European Network on Academic Integrity

ENQA

European Association for Quality Assurance in Higher Education

HAKA

Estonian Quality Agency for Education (Estonia)

HEI

Higher Education Institution

ICT

Information and Communication Technology

LMS

Learning Management System

NCEQE

LEPL - National Center for Educational Quality Enhancement (Georgia)

NOKUT

Norwegian Agency for Quality Assurance in Education (Norway)

QA

Quality Assurance

QQI

Quality and Qualifications Ireland (Ireland)

SQAA

Slovenian Quality Assurance Agency for Higher Education (Slovenia)

ZEvA

Central Evaluation and Accreditation Agency Hannover (Germany)

Declarations

Funding

The research has not received any financial support from the funding organizations.

Ethics Approval and Consent to Participate

Ethical Approval

At the time of the study, there was no national or institutional ethics committee or formal review board in Georgia applicable to this type of non-clinical, social science research. Therefore, formal ethical approval was not required.

All procedures performed in this study were conducted in accordance with internationally recognized ethical standards for research involving human participants, including the principles of the Declaration of Helsinki and general ethical guidelines for social science research. The study was designed and conducted by a researcher with certified training in research ethics (bioethics) from the Bioethics Commission of the Association of Addictologists of Georgia (completed in 2019), including expertise in informed consent procedures and ethical considerations in social and behavioral research. The team also included a PhD candidate and a PhD holder; both have published in international peer-reviewed journals. Together, these qualifications ensured adherence to ethical principles throughout the study.

Informed Consent

a) Consent to Participate

This study involved voluntary completion of an online questionnaire by representatives of educational quality assurance agencies. Participants were informed about the purpose of the study, the voluntary nature of participation, and the use of their responses in the invitation email and the survey introductory section. Respondents were required to provide the name of their organization; no personal identifying information such as individual names or email addresses was collected. Submission of responses was taken as providing informed consent to participate in the study.

Formal informed consent (as defined in research involving human subjects) was not obtained due to the minimal risk to participants, and professional, organizational nature of the survey.

b) Consent for Publication

Not applicable. The manuscript reports organizational-level information and practices; no personally identifiable data of individual participants are included. Direct quotes included are anonymized and do not contain personally identifiable information of individual participants.

Authors' Contributions

The corresponding author (L.K.) conducted 60% of work, including study design and methodology, data collection and analysis, and manuscript drafting. The remaining 40% of the work was equally contributed

by other two authors (L.Z. and L.M.), who assisted with developing the methodology, interpretation of results and manuscript revisions. All authors reviewed and approved the final version of the manuscript.

Conflict of Interests

The authors declare that they have no competing financial or non-financial interests.

Dual Publication

The authors confirm that the manuscript is original, has not been published previously, and is not under consideration for publication elsewhere.

Availability of Data and Materials

All data generated or analyzed during this study are included in this published article and its supplementary information files. The survey questionnaire used for data collection is provided in Supplementary Information - Online Resource 1; the raw survey dataset is provided in Supplementary Information - Online Resource 2.

Permission to Use Third-Party Materials

All figures and tables included in this manuscript were created by the authors and have not been previously published.

Acknowledgements

The authors would like to thank the representatives of ENQA member agencies who participated in the survey and contributed valuable insights to this research.

References

1. Council of Europe. Council of Europe Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law. Council of Europe Treaty Series No. 225. Strasbourg: Council of Europe; 2024. https://rm.coe.int/1680afae3c.
2. Council of Europe. The Framework Convention on Artificial Intelligence and Human Rights, Democracy and the Rule of Law. Council of Europe – Artificial Intelligence. 2025. https://www.coe.int/en/web/artificial-intelligence/the-framework-convention-on-artificial-intelligence
3. European Commission. Digital Education Action Plan 2021–2027: Resetting education and training for the digital age. Publications Office of the European Union. 2022. https://op.europa.eu/en/publication-detail/-/publication/1769859d-7c76-11ed-9887-01aa75ed71a1/language-en
4. Vuorikari R, Kluzer S, Punie Y. DigComp 2.2: The Digital Competence Framework for Citizens — With new examples of knowledge, skills and attitudes (JRC128415, EUR 31006 EN). Publications Office of

the European Union; 2022. https://publications.jrc.ec.europa.eu/repository/handle/JRC128415.

5. European Commission. Artificial Intelligence for Europe (COM(2018) 237 final). European Commission. 2018. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2018:237:FIN
6. González Calatayud V, Prendes Espinosa P, Roig Vila R. Artificial intelligence for student assessment: A systematic review. Appl Sci. 2021;11(12):5467. https://doi.org/10.3390/app11125467.
7. Rhienmora P, Haddawy P, Suebnukarn S, Dailey MN. Intelligent dental training simulator with objective skill assessment and feedback. Artif Intell Med. 2011;52(2):115–21. https://doi.org/10.1016/j.artmed.2011.04.003.
8. Grivokostopoulou F, Perikos I, Hatzilygeroudis I. An educational system for learning search algorithms and automatically assessing student performance. Int J Artif Intell Educ. 2017;27(1):207–40. https://doi.org/10.1007/s40593-016-0116-x.
9. Goel AK, Joyner DA. Using AI to teach AI: Lessons from an online AI class. AI Magazine. 2017;38(2):48–59. 10.1609/aimag.v38i2.2732.
10. Williams A. Integrating artificial intelligence into higher education assessment. Intersection: J Intersection Assess Learn. 2025;6(1):128–54. 10.61669/001c.131915.
11. Guo K, Wang D. To resist it or to embrace it? Examining ChatGPT's potential to support teacher feedback in EFL writing. Educ Inf Technol. 2023;29:8435–63. 10.1007/s10639-023-12146-0.
12. Rajabi M, McGahan C, Akgun S. Generative artificial intelligence for assessment rubric creation. Educ Technol Res Dev. 2023;71:1023–45. 10.1007/s11423-023-10140-5.
13. Alkouk WA, Khlaif ZN. AI–resistant assessments in higher education: practical insights from faculty training workshops. Front Educ. 2024;9:1499495. 10.3389/feduc.2024.1499495.
14. Floridi L, Cowls J, Beltrametti M, Chatila R, Chazerand P, Dignum V, Luetge C, Madelin R, Pagallo U, Rossi F, Schafer B, Valcke P, Vayena E. AI4People—An ethical framework for a good AI society: opportunities, risks, principles, and recommendations. Minds Mach. 2018;28(4):689–707. 10.1007/s11023-018-9482-5.
15. Smuha NA. Trustworthy artificial intelligence in education: pitfalls and pathways. SSRN Electron J. 2020. 10.2139/ssrn.3742421.
16. Foltýnek T, Bjelobaba S, Glendinning I, Khan ZR, Santos R, Pavletic P, Kravjar J. ENAI recommendations on the ethical use of artificial intelligence in education. Int J Educ Integr. 2023;19:12. 10.1007/s40979-023-00133-4.
17. Cotton DRE, Cotton PA, Shipway JR. Chatting and cheating: ensuring academic integrity in the era of ChatGPT. Innov Educ Teach Int. 2024;61(2):228–39. 10.1080/14703297.2023.2190148.
18. Aler Tubella M, de la Higuera C, Navas M. Translating EU AI ethical guidelines into educational practice. AI Ethics. 2023;3:45–67. 10.1007/s43681-023-00219-3.
19. Joudieh N, Harb H, Zaki C, Ramadan A, Saker L, Mostafa N, Tannoury L. Higher education in the era of artificial intelligence: academic freedom as a case study. Discov Sustain. 2024;5:220. 10.1007/s43621-024-00425-w.

20. Norwegian Government. National Strategy for Artificial Intelligence. Ministry of Local Government and Modernisation / Ministry of Digitalisation and Public Governance. 2020. https://www.regjeringen.no/en/documents/nasjonal-strategi-for-kunstig-intelligens/id2685594/
21. Norwegian Government. The Digital Norway of the Future: National Digitalisation Strategy 2024–2030. Prime Minister's Office & Ministry of Digitalisation and Public Governance. 2024. https://www.regjeringen.no/en/documents/the-digital-norway-of-the-future/id3054645/
22. NOKUT. Strategi for utvikling av NOKUT 2023–2030. Norwegian Agency for Quality Assurance in Education. 2023. https://www.nokut.no/publikasjoner-og-kunnskap/strategi-for-utvikling-av-nokut-20232030/
23. NCEQE. Annex 3: Authorization Standards for Higher Education Institutions. National Center for Educational Quality Enhancement. 2025. https://eqe.ge/res/NewFolder%2024/NewFolder/NewFolder/NewFolder/NewFolder/Annex%203%20-%20Authorization_Standards_for_Higher_Education_Institutions.pdf
24. Samarakou M, Fylladitakis ED, Karolidis D, Früh WG, Hatziapostolou A, Athinaios SS, Grigoriadou M. Evaluation of an intelligent open learning system for engineering education. Knowl Manag E-Learn. 2016;8(3):496–513.
25. Standards and Guidelines for Quality Assurance in the European Higher Education Area (ESG). Adopted by the Ministerial Conference. May 2015. European Association for Quality Assurance in Higher Education (ENQA), European Students' Union (ESU), European University Association (EUA), European Association of Institutions in Higher Education (EURASHE), Education International, Business Europe, European Quality Assurance Register for Higher Education (EQAR); 2015. Available from: https://ehea.info/media.ehea.info/file/ESG/00/2/ESG_2015_616002.pdf

Footnotes

1. dotLRN is an open-source learning management system (LMS) designed to support online learning and collaborative work. It helps provide feedback to students and track their progress over time, making dotLRN effective for personalized learning and assessment (chatgpt.com).

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- SIOnlineResource1.pdf
- SIOnlineResource2.xlsx