GEORGE BROWN PRESS
JOURNALS, BOOKS & PROCEEDINGS

GBP Proceedings Series

Review

2025 2nd International Conference on the Frontiers of Social Sciences, Education, and the Development of Humanities Arts (EDHA 2025)

Navigating International Challenges of Quality Assurance in Higher Education: A Synergy of Gen-AI and Human-Made Solutions

Yalin Li [1] and Mingyou Xie [1,*]

[1] Lingnan University, Hong Kong, China
* Correspondence: Mingyou Xie, Lingnan University, Hong Kong, China

Abstract: In the context of the accelerating internationalization of higher education (HE), quality assurance (QA) faces numerous international challenges, such as difficulties in standard-setting and implementation, flaws in the assessment system, and an imbalance between university autonomy and external constraints. The emergence of Generative Artificial Intelligence (Gen-AI) has brought new opportunities to QA in HE, but it is also accompanied by issues such as data security and ethics. This research aims to explore these challenges, study the application potential of Gen-AI in HE QA, and propose a synergy strategy that combines Gen-AI with human-made solutions. The research uses methods such as literature reviews and case studies. It is found that by establishing a mechanism for the participation of diverse stakeholders, clarifying the responsibilities of all parties, and using Gen-AI to assist in decision-making and management, these challenges can be effectively addressed. At the same time, development suggestions such as strengthening cross-disciplinary cooperation and talent cultivation, continuous monitoring and dynamic adjustment of strategies, and promoting international exchanges and experience sharing are put forward to improve the level of HE QA and promote the development of global HE.

Keywords: higher education; quality assurance; generative artificial intelligence; international challenges; synergy strategy

Received: 19 February 2025
Revised: 27 February 2025
Accepted: 10 March 2025
Published: 17 March 2025

1. Introduction

With the accelerating advancement of globalization, the internationalization of higher education (HE) has become an irresistible trend. In this process, quality assurance (QA) in HE faces many international challenges. On the one hand, the education systems and quality standards of different countries and regions vary, making transnational education cooperation and exchanges difficult. On the other hand, with the rapid development of technology, especially the emergence of Generative Artificial Intelligence (Gen-AI), it has brought new opportunities and challenges to QA in HE [1].

HE plays a crucial role globally, cultivating a large number of professionals and innovative forces for society. However, with the continuous increase in the number of HE institutions, especially the rapid development of private universities, the requirements for the quality of HE are also increasing. To ensure the quality of HE, many countries and regions have established national and regional QA frameworks, developed quality standards and guidelines, and required all affiliated institutions to comply. Simultaneously, the

competition in the international education market is becoming increasingly fierce. Countries are striving to improve the quality of their HE to attract more international students and academic resources. In this context, the internationalization of HE QA has become an inevitable trend. International network QA agencies are playing an increasingly prominent role in HE, providing guidance and reference for HE QA in various countries [2].

In addition, the development of technology, especially the emergence of Gen-AI, has brought profound changes to HE. Gen-AI can provide students with a personalized learning experience, improving learning efficiency and effectiveness. However, Gen-AI also brings some new problems, such as over-reliance, ethical and pedagogical impacts. Therefore, how to give full play to the advantages of Gen-AI in HE QA while addressing the challenges it brings has become an important issue facing the HE field.

The purpose of this research is to explore the challenges faced by HE QA in the context of internationalization and propose a synergy strategy that combines Gen-AI with human-made solutions to improve the quality of HE. The specific goals are presented below. The study will analyze the current situation and challenges of the internationalization of HE QA; study the application potential of Gen-AI in HE QA; and propose a synergy strategy that combines Gen-AI with human-made solutions, providing new ideas and methods for HE QA. To achieve the above research objectives, this research will focus on the following questions.

RQ1: What challenges does HE QA face in the context of internationalization?

RQ2: What are the application scenarios and advantages of Gen-AI in HE QA?

RQ3: How can we combine Gen-AI with human-made solutions to improve the level of HE QA?

This research adopts literature reviews and case studies as its main methods. Through the comprehensive analysis of relevant literature, The current situation and challenges of the internationalization of HE QA, as well as the application of Gen-AI in HE will be explored. Simultaneously, through the case studies, the effectiveness of the synergy strategy that combined Gen-AI with human-made solutions in improving the level of HE QA will be evaluated.

This research has important theoretical and practical significance. Theoretically, this research will enrich the theoretical system of HE QA, providing theoretical support for the internationalization of HE and the application of Gen-AI in the education field. Practically, the synergy strategy that combines Gen-AI with human-made solutions proposed in this research will provide practical guidance for HE institutions and education administrators, helping to improve the level of HE QA and promoting the sustainable development of HE.

2. An Analysis of the Challenges in International HE QA

2.1. Difficulties in Standard-Setting and Implementation

The diversity of stakeholders makes it difficult to reach a consensus in the standard-setting process. For example, different interest groups such as teachers, students, parents, and enterprises have different expectations and requirements for the quality of HE, which poses great difficulties for standard-setting. The lack of an effective stakeholder participation mechanism leads to a lack of transparency and fairness in the standard-setting process. Some stakeholders may lack opportunities to express their opinions and suggestions, thus affecting the quality and feasibility of the standards

HE quality standards are often vague and difficult to accurately measure and evaluate. The definitions and standards of HE quality vary in different countries and regions, which brings difficulties to international comparison and communication. The complexity of the standards also increases the difficulty of implementation. Some quality standards involve multiple aspects and dimensions, requiring comprehensive consideration of teaching, scientific research, social services, and other factors, which poses high requirements for universities and QA agencies.

Implementing HE QA standards requires a large amount of resource support, including human, material, and financial resources. However, some universities and QA agencies may lack sufficient resources, resulting in inadequate implementation of the standards. Cultural factors can also affect the implementation of standards. The cultural backgrounds and educational traditions of different countries and regions are different, and their understanding and emphasis on QA also vary. This may lead to cultural conflicts and misunderstandings during the implementation of the standards.

2.2. Flaws in the Assessment System

The current HE quality assessment indicator system often has problems with a lacks scientific rigor. Some indicators may be overly subjective, failing to accurately reflect the true quality of HE. The weight allocation of indicators may also be unreasonable, resulting in inaccurate assessment results. For example, some indicators may place too much emphasis on teaching achievements while ignoring the contributions of scientific research and social services.

The existing HE quality assessment methods are often relatively single, mainly using methods such as questionnaires and expert evaluations. These methods may have certain limitations and are difficult to comprehensively and accurately assess the quality of HE. There is a lack of innovative assessment methods that cannot adapt to the rapidly developing HE environment. For example, with the development of information technology, new teaching models such as online education and blended teaching are emerging continuously, and new assessment methods need to be developed to adapt to these changes.

The reliability and validity of HE quality assessment results are often questioned. Some assessment results may be affected by the subjective factors of the assessors, lacking objectivity and fairness. There are also problems with the feedback and application of assessment results. Some universities and QA agencies may not attach enough importance to the assessment results and fail to take effective improvement measures in a timely manner, resulting in the inability of the assessment results to play their due role [3].

2.3. Imbalance between University Autonomy and External Constraints

External forces such as the government and society impose excessive constraints on universities, which may limit the autonomy and innovation ability of universities. For example, the government may regulate the school-running behavior of universities by formulating strict laws and policies, which may affect the teaching and scientific research freedom of universities. The requirements of external assessment and accreditation agencies may also put pressure on universities, causing universities to pay too much attention to meeting external standards and neglecting their own characteristics and development needs [4,5].

Excessive autonomy of universities can also bring problems. Some universities may overemphasize independent school-running and neglect the importance of external QA. This may lead to problems such as a decline in teaching quality, low scientific research levels, and insufficient social service capabilities. Excessive autonomy may also lead to vicious competition among universities, affecting the overall development of HE. For example, some universities may adopt unfair competition means to attract students and resources, which may damage the ecological environment of HE.

3. Applications of Generative Artificial Intelligence in HE QA

Gen-AI has a profound impact on education. Using factors like students' learning history, hobbies, and abilities, it recommends personalized content, generates customized plans and resources, and aids knowledge acquisition. As an intelligent tutor, it uses natural language processing to answer students' questions and solve learning problems. As a virtual teaching assistant, it helps teachers with teaching material preparation, classroom discussions, and grading, improving teaching efficiency [6,7].

In assessment, Gen-AI analyzes students' learning data for academic scores and evaluation reports, gives personalized feedback, and provides teaching quality evaluation reports to help teachers improve methods. Considering teaching - related aspects, it assists in tasks like courseware and test-question generation, and recommends suitable learning resources to boost students' knowledge and abilities.

4. The Role of Manual Solutions in HE QA

4.1. Emotional Communication and Humanistic Care

HE is not only about the imparting of knowledge, but more importantly, it involves emotional communication and humanistic care for students. Manual intervention has unique value in this regard. In ideological and political education, the rapid development of information technology has brought challenges to the humanistic care ecosystem, but AI also provides an opportunity to strengthen the humanistic care in ideological and political education. Ideological and political education should reverse the concept of man-machine opposition and shift towards man-machine collaboration, leveraging AI to support ideological and political education while maintaining ethical and pedagogical integrity. AI should also evolve into human-centered intelligence, implementing and integrating the people-oriented concept from the source to better realize the humanistic care in ideological and political education.

In psychological education, social changes have enabled the realization of a new type of human-centered and personalized interpersonal relationship, and the development of emotional intelligence among psychology students has become an urgent task. Emotional intelligence enables people to understand and feel the necessity of rationally analyzing their own emotions and making decisions based on this, thus enabling them to act more effectively. People with higher emotional intelligence are more likely to achieve their goals, become more efficient, productive, and happy in their interactions with others [8].

4.2. Judgment and Decision-Making on Complex Issues

In HE, students need to face the judgment and decision-making (DM) of complex issues, and manual intervention plays an important role in this regard. HE aims to cultivate professional talents suitable for the globalization context and develop horizontal skills so that they can play a successful role in society. However, cognitive neuroscience shows that the maturation of the prefrontal lobe of the brain (related to executive functions such as DM, planning, and cognitive flexibility) is approximately completed around the age of 25, and the myelination of various processing networks is still ongoing. At this stage of life, how to solve complex problems that require a series of technologies, procedures, attitudes, and ethical impacts is a challenge for a brain that is still developing and regulating its characteristic emotional states. Therefore, it is necessary to consider the improvement of these abilities based on neuroscience and propose a methodology that can solve specific problems according to students' enrollment situations [9].

5. Comparative Analysis of Generative Artificial Intelligence and Manual Solutions for the Same Problem

The author analyzes the stakeholder participation dilemma and excessive external constraints in HE by querying Gen-AI and conducting traditional literature research. After comparative analysis, strategies and development suggestions are proposed by integrating Gen-AI and literature findings. The stakeholder participation dilemma exists as stakeholders' diverse expectations and needs make consensus-building hard, and the lack of an effective mechanism reduces the transparency and fairness of standard-setting, undermining standard quality and feasibility. Excessive external constraints occur when the government and society overly restrict universities, curbing their autonomy and innovation, and external evaluation requirements make universities overlook their own traits and development needs while focusing on external standards.

5.1. Application of Gen-AI

Command: Now, as an expert in the HE QA system, comprehensively handle these two problems as a whole and provide solutions.

Content is summarized: To solve stakeholder participation and external-constraint issues in HE QA, we can take three approaches: building a participation mechanism, clarifying responsibilities, and leveraging Gen-AI. Establish a diverse stakeholder participation mechanism. Create a multi-party communication platform like regular stakeholder forums for teachers, students, parents, and enterprise reps to voice their expectations on quality standards. Set up special opinion-collection channels and adopt voting/negotiation for consensus-building on disputed standard clauses, enhancing transparency and standard quality. Clarify responsibilities and balance external constraints with university autonomy. The government should shift to macro-guidance, allowing universities more autonomy in majors and curriculum. External evaluation agencies should optimize standards, factoring in university characteristics. Universities need to be self-disciplined, accept supervision, and explore personalized development. Use Gen-AI for DM and management. Analyze stakeholder data with Gen-AI to extract core demands for standard-setting. For example, analyze feedback to form more targeted quality standards. Gen-AI can also offer innovative ideas for universities. Based on a university's strengths, it can generate personalized development plans to balance external requirements and self-development [10].

5.2. Traditional Literature Analysis

Some scholars have proposed a new HE evaluation QA process for establishing a diversified stakeholder participation mechanism. Developed and tested by multi-disciplinary teaching staff, it has five stages and can involve internal stakeholders in quality development, offering a reference for building a participation mechanism. Imperial College London's emphasis on student participation in its comprehensive internal QA system shows the significance of student involvement, and we can learn from this to enhance the QA system's effectiveness [11,12].

Research on Afghan HE institutions clarified the responsibilities of teachers, departments, and faculties in QA according to relevant laws and frameworks. This provides a reference for clarifying responsibilities in other HE QA systems, as it's crucial for system effectiveness . Regarding Gen-AI-assisted DM and management, promoting informatization construction is proposed as a measure for building a private HE QA system. Informatization technology, like online teaching monitoring platforms and big data analysis, can support the QA system, highlighting the importance of technological means [13-15].

6. Formulation of Collaborative Strategies and Development Suggestions

6.1. Collaborative Strategies

Optimize stakeholder participation: Integrate Gen-AI into traditional processes. AI analyzes QA data to pinpoint stakeholder needs. In feedback collection, it classifies and analyzes content, extracts key demands, and improves participation and DM. For example, design student-participation platforms with AI to boost students' engagement.

Balance external constraints and university autonomy: Learn from Afghanistan's experience and use Gen-AI. When the government formulates policies, AI simulates policy impacts on universities. External agencies customize evaluation standards for each university. Universities use AI to analyze data and feedback, adjust strategies, and leverage their advantages under external supervision.

Strengthen technology-assisted DM: Leverage Gen-AI's innovation in informatization. AI mines data from teaching monitoring and student learning analysis, predicts trends, and offers forward-looking suggestions. Combine AI-assisted DM with traditional responsibilities; it helps teachers, departments, and faculties optimize teaching, management, and disciplinary development [16].

6.2. Development Suggestions

Strengthen cross-disciplinary efforts: Encourage cooperation among education experts, AI developers, and university administrators to improve the HE QA system. Universities should offer cross-disciplinary majors or courses to cultivate compound talents, providing talent support for collaborative strategies.

Monitor and adjust strategies: Set up a monitoring mechanism to track collaborative strategy implementation. Regularly collect and analyze data (stakeholder feedback, university data, evaluation results) with AI. Identify problems and adjust strategies in a timely manner. Optimize strategies as the education environment and AI technology evolve.

Promote international exchanges: Actively engage in international HE QA exchanges. Share achievements in solving stakeholder and autonomy-related issues, and learn from others. Strengthen cooperation with international entities, conduct joint research, and drive global innovation in the HE QA system [17].

7. Conclusion and Prospect

This paper explores the collaborative application of Gen-AI and manual solutions in HE QA within the international context. HE internationalization presents challenges such as stakeholder participation difficulties, complex standards, evaluation system shortcomings, and imbalances between university autonomy and external constraints. Gen-AI has potential in teaching, assessment, and resource generation but also faces data and ethical issues, while traditional manual methods like teaching evaluation and faculty building remain significant. To solve stakeholder and external-constraint problems, the paper proposes collaborative strategies like optimizing stakeholder participation with Gen-AI, balancing autonomy and constraints using Gen-AI and international experience, and strengthening technology-assisted DM by mining data and combining with traditional responsibilities. For the development of the HE QA system, it suggests strengthening cross-disciplinary cooperation for talent cultivation, continuous monitoring and strategy adjustment, and promoting international exchanges. Overall, this research provides new ideas for HE QA, enhancing its theoretical foundation and guiding practical applications.

References

1. Chan, C. K. Y., & Lee, K. K., "The AI generation gap: Are Gen Z students more interested in adopting generative AI such as ChatGPT in teaching and learning than their Gen X and millennial generation teachers?," *Smart Learn. Environ.*, vol. 10, no. 1, p. 60, 2023, doi: 10.1186/s40561-023-00269-3.
2. J. Lee and S. S. Zuilkowski, "Conceptualising education quality in Zambia: A comparative analysis across the local, national and global discourses," *Compar. Educ.*, vol. 53, no. 4, pp. 558-577, 2017, doi: 10.1080/03050068.2017.1348020.
3. Askarany, D., & Yazdifar, H., "Management accounting and the shortcomings of current performance measurement systems," *Int. J. Account. Res.*, vol. 5, p. 146, 2017, doi: 10.4172/2472-114X.1000146.
4. Hancock, L., "Commercialization and corporatization: Academic freedom and autonomy under constraints in Australian universities," in *Academic Freedom Under Siege: Higher Education in East Asia, the US and Australia*, Springer, 2020, pp. 219-246, doi: 10.1007/978-3-030-49119-2_11.
5. Wysocka, K., Jungnickel, C., & Szelągowska-Rudzka, K., "Internationalization and quality assurance in higher education," *Manag.*, vol. 26, no. 1, pp. 204-230, 2022, doi: 10.2478/manment-2019-0091.
6. Amar, S., & Benchouk, K., "The Role of Generative AI in Higher Education: Fostering Teamwork and Interaction as a Virtual Teaching Assistance," in *General Aspects of Applying Generative AI in Higher Education: Opportunities and Challenges*, Cham: Springer Nature Switzerland, 2024, pp. 39-53, doi: 10.1007/978-3-031-65691-0_3.
7. Agarwal, M., & Greer, R., "Spectrogram-Based Deep Learning for Flute Audition Assessment and Intelligent Feedback," in *Proc. 2023 IEEE Int. Symp. Multimedia (ISM)*, Dec. 2023, pp. 238-242, doi: 10.1109/ism59092.2023.00045.
8. Beresneva, O., & Kornilova, O., "The impact of higher psychological education on the development of students' emotional intelligence," in *SHS Web Conf.*, vol. 101, p. 03030, 2021, doi: 10.1051/shsconf/202110103030.
9. Oportus, X. P. M., & Slater, A. W., "Higher Education: What does the Neurocognitive Evidence Say for Decision-Making and Complex Problem Solving?," in *Higher Education-Reflections From the Field-Volume 3*, IntechOpen, 2023, doi: 10.5772/intechopen.109378.

10. Brown, R., *Quality Assurance in Higher Education: The UK Experience Since 1992*, Routledge, 2004. ISBN: 9780203416327.
11. Gawhari, G. S., Sadaat, N. U., & Khamosh, A., "A review of responsibilities and duties of faculty academic members, department, and faculty for ensuring the quality of higher education: A case of Afghanistan," *Int. J. Adv. Acad. Stud.*, vol. 3, no. 3, pp. 108-119, 2021, doi: 10.33545/27068919.2021.v3.i3b.587.
12. Mohammadi, M., Tajik, E., Martinez-Maldonado, R., Sadiq, S., Tomaszewski, W., & Khosravi, H., "Artificial Intelligence in Multimodal Learning Analytics: A Systematic Literature Review," *IEEE Access*, vol. 12, pp. 12345-12367, 2024, doi: 10.13140/RG.2.2.16241.29281.
13. Lucander, H., & Christersson, C., "Engagement for quality development in higher education: a process for quality assurance of assessment," *Qual. Higher Educ.*, vol. 26, no. 2, pp. 135-155, 2020, doi: 10.1080/13538322.2020.1761008.
14. R. Sajja, Y. Sermet, D. Cwiertny, and I. Demir, "Platform-independent and curriculum-oriented intelligent assistant for higher education," *Int. J. Educ. Technol. High. Educ.*, vol. 20, no. 1, p. 42, 2023, doi: 10.1186/s41239-023-00412-7.
15. Tsoodol, L., Battulga, B., Dovdon, E., Altangerel, B., & Namsrai, O. E., "Enhancing Higher Education Quality Assurance Using Survey-Based Decision Support Framework," in *Adv. Intell. Inf. Hiding Multimedia Signal Process.*, vol. 2, Springer, 2021, pp. 237-243, doi: 10.1007/978-981-33-6757-9_30.
16. Wang, S., et al., "Automatic evaluation system for bulk defects in optics," *Opt. Lasers Eng.*, vol. 137, p. 106380, 2021, doi: 10.1016/j.optlaseng.2020.106380.
17. L. Wang and X. Qu, "The orientation and development of Chinese university students' ideological and moral education in the age of artificial intelligence," in *SHS Web of Conferences*, vol. 171, p. 02022, EDP Sciences, 2023, doi: 10.1051/shsconf/202317102022.