BALE LITERASI

Journal of Educational Studies

2025-Volume 03, Issue 03, 208-215
https://ejournal.baleliterasi.org/index.php/Jes
DOI: 10.58218/jes.v6i1.2638 | e-ISSN 3031-4232

Bridging the Skills Gap: The Impact of Internal Quality Assurance on Educational Outcomes

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Article Info
Received: Sept 22, 2025
Revised: Nov 07, 2025
Accepted: Dec 17, 2025

Keywords:
internal quality assurance
vocational education
student skills
skill gap
quality culture

Abstract
This study aims to analyze the impact of internal quality assurance systems in bridging students' skill gaps in vocational education. A qualitative approach with a case study design. Data were collected through interviews, documentation, and surveys, and analyzed using the interactive model of Miles, Huberman, and Saldaña, which includes data condensation, data display, and conclusion drawing. The findings reveal that the internal quality assurance system has been implemented across all stages of the quality cycle, including standard setting, quality mapping, planning, implementation, as well as monitoring and evaluation. However, the implementation remains largely procedural and has not been fully integrated to produce optimal educational outcomes. Students demonstrate adequate technical skills, yet still face limitations in non-technical skills such as communication, adaptability, and problem-solving. These gaps are attributed to the suboptimal use of data in decision-making, limited involvement of industry stakeholders, and the underdeveloped quality culture within schools. This study concludes that internal quality assurance contributes to improving educational processes but has not been fully effective in bridging students' skill gaps. Therefore, strengthening the integration of the quality cycle, adopting data-driven approaches, and enhancing collaboration with industry are essential to improve the relevance and quality of educational outcomes.

To cite this article: Arhas, S.H., Nasir, N., Jamaluddin, J., & Arismunandar, A. (2025). Bridging the Skills Gap: The Impact of Internal Quality Assurance on Educational Outcomes. *Journal of Educational Studies, 3*(3), 208-215.

1. Introduction

Vocational secondary education plays a strategic role in producing competent and work-ready human resources amidst an increasingly competitive and technology-driven labor market. The importance of skills mastery in vocational education is inseparable from its primary goal, which is to prepare graduates ready to enter the workforce directly. Vocational education is designed to bridge the gap between industry needs and graduate competencies, making the emphasis on skills development a crucial aspect. These skills are not limited to technical abilities (hard skills), but also encompass non-technical skills (soft skills) such as communication, adaptability, teamwork, and critical thinking, which are increasingly needed in the modern workplace.

Furthermore, the success of vocational education is determined not only by the curriculum and learning process, but also by an effective quality assurance system. In this context, Internal

Quality Assurance (IQA) plays a strategic role in ensuring that the entire educational process meets established standards. IQA serves not only as an evaluation tool but also as an instrument for continuous quality control and improvement through a systematic monitoring and evaluation process.

In this context, internal quality assurance is a crucial foundation for ensuring that the educational process runs effectively, efficiently, and accountably. "This system serves as a systematic and sustainable mechanism that enables each educational unit, including vocational high schools (SMK), to independently and continuously conduct quality control over the implementation of educational services." (Arhas & Haryoko, 2024). This aligns with the President and Vice President's fourth Asta Cita (Asta Cita), namely: Strengthening human resource development (HRD), science, technology, education, health, sports achievements, gender equality, and strengthening the roles of women, youth, and persons with disabilities. In the context of vocational education, particularly Vocational High Schools (SMK), the demand for quality improvement extends beyond academics to job skills, discipline, and readiness for the industrial world.

"An internal quality assurance system is a crucial foundation for maintaining and improving the quality of education in vocational schools." (Arhas et al., 2025; Hadriah et al., 2019). In the context of vocational education, which emphasizes employability skills and graduates' readiness to enter the industrial world, this system is becoming increasingly strategic. The Internal Quality Assurance System (SPMI) serves not only as a monitoring tool for educational implementation but also as a mechanism for continuous development, enabling institutions to adapt to current demands and stakeholder needs.

SPMI serves as a bridge between educational institutions and the Business and Industry World (DUDI), particularly in aligning graduate competencies with job market needs. "This alignment is achieved through an internal evaluation process involving strategic planning, implementation of quality standards, and follow-up for continuous improvement." (Arismunandar et al., 2025; Evans et al., 2021; Janssens et al., 2022; Javed & Alenezi, 2023; Pedro, 2020). In addition, this system also allows for active involvement from various parties such as teachers, students, and education staff in the quality evaluation process, thereby creating a sense of ownership and shared responsibility for the quality of educational services. (Habibi et al., 2022; Nisa et al., 2024; Rincón-Moreno & Gordillo-Ramírez, 2025; Schipf, 2020).

The quality of education is the main foundation in developing superior and competitive human resources. (Khaerani et al., 2024; Nasrullah & Arhas, 2025). Based on data from the Education Report at Vocational High Schools under the authority of South Sulawesi Province (Rapor Pendidikan Indonesia Provinsi Sulawesi Selatan, 2025), The results showed that student character improved, while learning quality declined compared to the previous year.

Furthermore, the implementation of IQA enables educational institutions to make data-driven decisions to identify weaknesses and formulate appropriate corrective measures. This system also contributes to ensuring alignment between the curriculum and industry needs, ensuring highly competitive graduates.

An interview with a vice principal for curriculum revealed that the school's current standards are still limited to the National Standards for Education (SNP), while the industrial and industrial sectors (DUDI) require skills relevant to the current context, namely digital literacy. Therefore, quality standards more contextualized to DUDI are needed. Furthermore, interviews with productive subjects revealed the lack of a definitive instrument related to internal quality assurance because schools are just beginning to make improvements to internal quality assurance. Furthermore, an industry participant revealed that the desired work skills are those that align with industry needs; there are currently gaps, particularly in soft skills.

At the practical level, various challenges remain that hinder the effectiveness of this implementation. These challenges include suboptimal system development, lack of information technology integration, limited quality documentation, and a weak quality culture involving all stakeholders.

2. Methods

2.1 Participants

Participants in this study were selected using purposive sampling based on their direct involvement in vocational education implementation and internal quality assurance systems. The informants included the school principal, the school quality assurance team, teachers, and representatives from industry and business sectors (DUDI). The principal acted as the key decision-maker, the quality assurance team managed and evaluated quality processes, teachers implemented instructional practices, and industry representatives provided external perspectives on workforce needs.

2.2 Data Collection

2.2.1 Instrument of Collecting Data

This study employed two main instruments: an interview guide and a document analysis sheet. The interview guide was developed using open-ended questions aligned with the research focus, allowing systematic yet in-depth data exploration. Its flexible structure enabled adaptation to field conditions without limiting the richness of responses.

The document analysis sheet was designed to systematically examine written sources. It included key aspects to be identified within documents, facilitating data categorization and interpretation of both administrative and descriptive information.

2.2.2 Techniques for Collecting Data

Data were collected through interviews and document review. Interviews were conducted to gain in-depth insights into practices and experiences relevant to the research focus, using an approach that encouraged dynamic and context-sensitive interaction.

Document review was carried out by examining relevant records as supporting data sources. Findings from both techniques were integrated to develop a comprehensive understanding, while also strengthening the consistency of results through cross-source comparison.

2.3 Data Analysis

Data analysis in this study followed the interactive model proposed by Miles, Huberman, and Saldaña, which operates cyclically and continuously from data collection to conclusion drawing. The analytical process consisted of three main stages: data condensation, data display, and conclusion drawing and verification.

Data condensation involved selecting, focusing, and simplifying relevant information aligned with the research objectives. The data were then organized and presented in the form of narratives and matrices to facilitate the identification of patterns and relationships. Finally, conclusions were drawn and continuously verified to ensure the consistency and credibility of the research findings.

3. Results

The research results indicate that schools have established quality standards as a reference in the implementation of education, including in the development of student competencies. These standards are reflected in curriculum documents and learning plans that focus on mastering vocational skills. Conceptually, these standards accommodate the basic needs of the workforce, particularly the technical skills required by students.

Field findings indicate that the established standards do not fully accommodate broader skill needs, particularly soft skills. Interviews revealed that learning standards place a greater emphasis on technical skills, while communication and adaptation skills are not a primary focus. This situation impacts educational outcomes, with students being assessed as quite good in technical skills but still facing difficulties adapting to the dynamics of the work environment.

The involvement of the business and industrial world in the standards-setting process remains limited. This results in the standards being used not being fully based on actual industry needs. As

a result, from the initial stage, there is a potential gap between the competencies designed by schools and the competencies required in the workforce.

During the quality mapping stage, schools have evaluated student learning outcomes and conditions through various instruments, including self-evaluation reports and learning assessment results. This data provides an overview of students' level of skill mastery, both in academic and vocational aspects.

The research results show that quality mapping has identified students with sufficient technical skills, but still lacking in non-technical skills. This is reinforced by informants' statements that students are capable in practice, but when faced with real-world work situations, they still need significant adjustments. These findings indicate that quality mapping has successfully identified skills gaps.

The utilization of these mapping results has not been optimal. The resulting data has not been fully utilized as a basis for designing learning strategies that are more relevant to industry needs. As a result, the identified skills gaps have not been systematically addressed in subsequent stages.

The school's quality improvement plan includes various programs aimed at improving educational outcomes, such as teacher training, strengthening practice-based learning, and collaborating with industry. These programs demonstrate efforts to improve students' competencies to better prepare them for the world of work.

The research results indicate that the planning is not fully oriented towards strengthening weak skills. Interviews revealed that the quality improvement program largely continues existing activities and does not fully focus on improving students' weaknesses. This indicates that the planning is not fully based on the results of the quality mapping.

Consequently, the impact on educational outcomes is less than optimal. Although various programs have been implemented, student skill improvement has not shown significant changes in the aspects most needed by the workforce, particularly soft skills and work readiness.

The implementation of the quality improvement program has been carried out through various concrete activities, such as industrial work practices, competency-based learning, and skills training. These activities have made a positive contribution to improving students' technical skills, as evidenced by their ability to complete practical assignments.

The research results indicate that the implementation's impact on student skills has been uneven. Interviews revealed that students are technically proficient, but still lack confidence and are not yet accustomed to working in teams in the workplace. This indicates that the program implementation has not fully developed holistic skills.

Furthermore, there is variation in the quality of program implementation, influenced by limited resources and coordination. This situation results in uneven educational outcomes achieved by students. Therefore, although the program has been implemented, its effectiveness in bridging the skills gap remains limited.

Monitoring and evaluation have been conducted to assess the effectiveness of the quality improvement program, including assessing student skill development. The school has an evaluation mechanism through activity reports and assessments of learning outcomes.

The results of the study indicate that the evaluation conducted has not been fully oriented towards student skill outcomes. Interviews revealed that the evaluation focused more on program implementation than on its impact on student job readiness. This results in the information obtained being insufficiently robust to serve as a basis for specific improvements.

Consequently, the quality improvement cycle has not fully addressed the existing skills gap. Without evaluation focused on educational outcomes, the improvement process tends to be repetitive without producing significant changes in graduate quality.

Overall, the results of this study indicate that the implementation of the internal quality assurance system has been systematic at each stage of the cycle, but has not been fully integrated to produce an optimal impact on educational outcomes. Although the system has been able to improve students' technical skills, gaps remain in the non-technical skills aspects, which are the primary demands of the workforce. These findings indicate that the relationship between quality assurance and educational outcomes is not yet linear, with mapping data not yet fully translated into planning, implementation, and evaluation oriented to industry needs. Thus, internal quality

assurance has not yet fully functioned as a strategic mechanism for bridging the skills gap. Instead, it remains at a procedural implementation stage and has not yet fully transformed graduate quality.

4. Discussion

The limited impact of internal quality assurance systems on student skill development cannot be separated from the weak internalization of quality culture within schools. Quality culture extends beyond the existence of formal standards and reflects a collective commitment to continuous quality improvement (Hildesheim, 2020; Stalmeijer et al., 2023). In practice, however, quality assurance systems are often oriented toward administrative compliance rather than transformative improvement in teaching and learning. This condition aligns with findings that such systems tend to operate as "tick-box" mechanisms, focusing on procedural fulfillment without generating significant improvements in educational quality (Tavares et al., 2017).

Another critical challenge lies in internal organizational factors, including resistance to change, limited understanding of quality assurance objectives, and the perception that these systems impose additional burdens. In some contexts, quality assurance is even viewed as an "added bureaucracy" that does not directly contribute to improving educational quality (Cardoso et al., 2019). This perception reduces stakeholder engagement in implementing the system meaningfully. As a result, although quality assurance processes may function procedurally, their impact on student skill development remains limited and insufficient to meet labor market demands (Al-Jaghoub et al., 2019).

In addition to quality culture, the effectiveness of quality assurance systems is closely linked to data-driven decision-making practices. Ideally, such approaches enable schools to identify skill gaps, monitor student progress, and design targeted interventions. However, in practice, data utilization is constrained by several factors, including limited data literacy among educators, time constraints, and insufficient support systems.

Furthermore, data are often used primarily for administrative purposes, such as reporting and accountability, rather than for improving instructional practices. This is reflected in findings that "data is often used for compliance or accountability purposes rather than for instructional improvement" (Rojas-Bravo et al., 2024). This indicates that data have not yet been fully leveraged as a strategic tool for enhancing educational outcomes, particularly in terms of student skill development.

These limitations are further compounded by the lack of stakeholder involvement in data-driven decision-making processes. Limited participation from teachers, students, and external partners results in decisions that lack contextual relevance and fail to address real needs (Carvalho, 2015). Integrating diverse perspectives is essential to ensure that quality improvement strategies are both relevant and impactful.

Conceptually, quality assurance, quality culture, and data-driven decision-making are interdependent and mutually reinforcing elements. A strong quality culture fosters reflective and continuous use of data, while effective data utilization strengthens quality assurance practices (Cheng, 2024). However, when these elements are not well integrated, quality assurance systems are unlikely to produce significant improvements in student skills. Therefore, a paradigm shift is required, moving from an administrative approach toward one that emphasizes continuous improvement and strengthens data analysis capacity within educational institutions.

5. Conclusions

This study concludes that the implementation of the internal quality assurance system in SMK 1 and SMK 4 has been carried out systematically across all stages of the quality cycle, including standard setting, quality mapping, planning, implementation, and evaluation. Structurally, the system has fulfilled administrative requirements and reflects the institutions' commitment to maintaining and improving educational quality. This is evidenced by the availability of quality-related documents and the implementation of various programs aimed at enhancing teaching and learning processes. However, the findings indicate that the impact of internal quality assurance on

educational outcomes, particularly in bridging students' skill gaps, remains limited. While students generally demonstrate adequate technical competencies, they still face challenges in non-technical skills such as communication, adaptability, and problem-solving. This condition highlights a misalignment between the competencies developed in schools and the demands of the labor market. Furthermore, the study reveals that the limited impact is largely due to the lack of integration across the stages of the quality assurance cycle. The results of quality mapping have not been fully utilized as a basis for planning, implementation efforts have not been entirely aligned with actual skill needs, and evaluation practices have not been sufficiently focused on educational outcomes. In addition, the system tends to operate at a procedural level and has not yet evolved into a sustainable quality culture. In conclusion, while internal quality assurance has contributed to improving educational processes, it has not yet been fully effective in producing graduates whose competencies align with industry demands. Therefore, strengthening the integration of the quality cycle, enhancing data-driven decision-making, and increasing the involvement of industry stakeholders are essential to ensure that internal quality assurance systems can effectively improve educational outcomes.

6. Declaration of Conflicting Interest

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

7. Acknowledgments

The authors would like to express their sincere gratitude to the Institute for Research and Community Service (LP2M) of Universitas Negeri Makassar and the Faculty of Social Sciences and Law, Universitas Negeri Makassar, for their financial support in conducting this research.

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