

# Developing Internal Quality Audit Instruments (AMI) for Study Programs Based on Independent Accreditation Agency (LAM) and National Accreditation Board for Higher Education (BAN-PT) Guidelines

**Rudi Hartono<sup>1</sup>, Andryan Setyadharma<sup>2</sup>, Eram Tunggal Pawenang<sup>3</sup>**

<sup>1</sup>English Department, Faculty of Languages and Arts, Universitas Negeri Semarang, Semarang, Indonesia

<sup>2</sup>Economics Development Department, Faculty of Economics and Business, Universitas Negeri Semarang, Semarang, Indonesia; <sup>3</sup>Society Health Sciences, Faculty of Medicine, Universitas Negeri Semarang, Semarang, Indonesia

\*Corresponding author: rudi.hartono@mail.unnes.ac.id

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**Abstract.** This research aims to develop an Internal Quality Audit (AMI) instrument for study programs that is integrated with the latest accreditation guidelines from the Independent Accreditation Institute (LAM) and the National Accreditation Board for Higher Education (BAN-PT), to answer the needs of Semarang State University (UNNES) in improving the quality of higher education. The background to this research is that a gap still exists between the internal audit process carried out in accordance with national and international quality standards, and the implementation of audits has not been optimal in encouraging continuous improvement. This research is essential to create an audit system that is more uniform, flexible, and evidence-based, as well as supporting a sustainable quality culture at UNNES. The research design employs the ADDIE (Analysis, Design, Development, Implementation, Evaluation) model, which involves identifying needs, designing instruments based on LAM and BAN-PT standards, validating them with expert input, conducting trials in study programs, and integrating them into the internal quality assurance system (SPMI). The research results indicate that most of the study program quality achievement standards have been met, particularly in terms of stakeholder involvement, Outcome-Based Education (OBE)- based curriculum, and student involvement in research and community service. However, there are still areas that need improvement, such as human resource funding and infrastructure. In conclusion, the development of the AMI instrument serves not only as an evaluation tool but also as a managerial strategy for ensuring the quality of education. It is recommended that UNNES conduct regular auditor training, strengthen digital audit support systems, improve infrastructure, and continue to involve stakeholders in enhancing instruments to create an adaptive and sustainable higher education quality system.

**Keywords:** Independent Accreditation Agency; Internal Quality Audit instrument; Internal Quality Assurance System; National Accreditation Board for Higher Education

## INTRODUCTION

Higher education in Indonesia is experiencing global pressure to improve its quality systemically and sustainably. The quality of a higher education institution is now not only measured based on academic achievements, but also through institutional ability to implement a quality assurance system that is in line with national and international standards [4], [7]. Therefore, implementing internal quality audits (AMI) is an important pillar in maintaining accountability, efficiency and transparency of higher education institutions.

One of the main instruments in the quality assurance system is the implementation of internal quality audits in accordance with the guidelines of the National Accreditation Board for Higher Education (BAN-PT) and the Independent Accreditation Institute (LAM) [4], [5]. Both regulate an accreditation framework based on learning outcomes and overall institutional performance. BAN-PT through IAPS 4.0 and LAM through various sectoral guidelines, such as LAM Engineering and Education, underline the importance of evidence-based assessment in ensuring the quality of education [3], [12].

Unfortunately, the implementation of internal quality audits in various universities still faces many obstacles. Problems such as the unavailability of standardized audit instruments [2], an evaluation process that is still manual, and a lack of technology integration [10], [11], cause audit results to be not optimal in encouraging continuous quality improvement [12], [13]. At Semarang State University (UNNES), this situation is also felt, considering the complexity of the study programs managed and the dynamics of regulations that continue to change.

UNNES, as one of the major universities in Indonesia, has a strategic responsibility in creating a strong quality system. An internal quality audit instrument is needed that is not only institutionally uniform but also flexible so that it can accommodate the characteristics of each study program. This aligns with a stakeholder-based approach, which emphasizes the active involvement of all parties in designing and implementing audits [15]. Benchmarking can also support systematic comparison of instrument coverage and institutional practices across quality standards [16].

The demand for higher-quality education also encourages UNNES to adopt international best practices. The quality assurance system must not only comply with national regulations but also align with global standards, such as ISO 21001:2018, which prioritizes transparency, process effectiveness, and sustainability [7], [8], [9]. By integrating this standard, it is hoped that the audit process at UNNES will enhance the competitiveness of institutions on both national and international scales.

In this context, the development of AMI instruments based on LAM and BAN-PT is a crucial strategy to enhance the quality culture at UNNES. The goal is not only to meet accreditation standards, but also to create an adaptive, data-driven quality improvement cycle. For this reason, a systematic, valid, and reliable instrument design is necessary to ensure that it can be relied upon in making quality-based managerial decisions [1], [14].

This research uses a design and development (Research and Development) approach by adapting the ADDIE (Analysis, Design, Development, Implementation, Evaluation) model. This model was chosen because it provides a planned structure, allowing for the gradual testing and refinement of the instrument [14]. Thus, the instrument developed is expected to address the specific needs of study programs within the UNNES environment.

The initial stage of development involves analyzing the needs and gaps between existing audit conditions and the expected standards. Data was collected through surveys, interviews, and a review of internal and regulatory documents. Furthermore, the instrument design was prepared based on dimensions and quality indicators from LAM and BAN-PT, then validated by education quality management experts to ensure content accuracy [4], [6].

The validated instruments were then tested in various study programs as a representation of faculty heterogeneity at UNNES. The trial results were analyzed using content validity and statistical reliability tests, such as Cronbach's Alpha, to measure the consistency of the instrument [14]. From this process, important feedback is obtained, which is used to revise and refine the audit instrument before it is fully implemented.

Overall, it is hoped that this research will make a significant contribution to enhancing the quality assurance system at UNNES. Apart from that, the results of the AMI instrument's development are also designed to be replicable by other universities, particularly in supporting the implementation of national policies, such as the Independent Learning-Free Campus (MBKM) [17]. This instrument is expected to serve as the foundation for establishing a digital, adaptive, and internationally recognized standard quality audit system.

## METHODS

This research employs a Research and Development (R&D) approach, adopting the ADDIE (Analysis, Design, Development, Implementation, Evaluation) development model. The ADDIE model was chosen because it has a systematic and flexible stage structure and is often used in the development of instructional tools and educational evaluation systems [14]. Through five main stages, this model allows researchers to design, develop, and evaluate internal quality audit instruments that are relevant to national accreditation standards.

The first stage is Analysis, which begins with identifying the need for internal quality audit instruments within the UNNES environment. This activity includes a gap analysis between ongoing audit practices and accreditation standards from BAN-PT and LAM. Data collection techniques were carried out through documentation studies of accreditation guidelines such as IAPS 4.0, IAPT 3.0, and LAM Engineering and LAM Education guidelines [4], [5], [6]. Additionally, interviews and surveys with stakeholders were conducted to gain a deeper understanding of the challenges encountered during the audit process.

The second stage, namely Design, aims to develop an initial framework for criteria-based audit instruments from BAN-PT and LAM. At this stage, the dimensions, indicators, and sub-indicators that will be used in the instrument are designed. The Design also pays attention to the measurability and understandability of the indicators by internal auditors and other users [1], [15]. The initial Design of the instrument was then prepared in a questionnaire and observation sheet format, allowing for practical use and standardization.

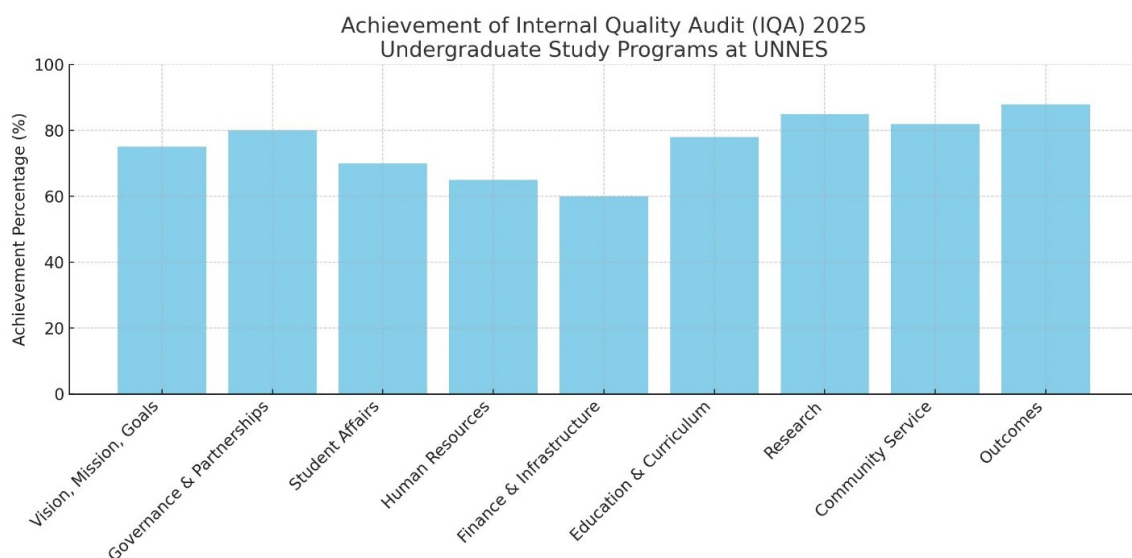
The third stage is Development, where the initial design of the instrument is refined into a prototype that is ready for testing. Researchers formed a team of experts to validate the contents of the instrument using an expert validation approach (expert judgment). The refined instrument was then tested for construct validity and reliability using exploratory factor analysis and Cronbach's Alpha test, according to standard quantitative methods in educational evaluation [4, 13].

Next, at the Implementation stage, the instrument was tested on several study programs at UNNES, which had different characteristics. This implementation process is also an opportunity to evaluate the effectiveness and efficiency of instruments in quality audit practices. Input from auditors and the internal quality assurance team became the basis for final revisions. The final stage involves a comprehensive assessment of the instrument's implementation and readiness for integration into the UNNES internal quality audit digital system, which supports the Independent Learning-Free Campus (MBKM) policy [17], [7].

## RESULTS AND DISCUSSION

### Results

**Table 1. The Result of Internal Quality Audit**



The research results indicate that the implementation of the Internal Quality Audit (AMI) instrument in the undergraduate study program at Semarang State University (UNNES) encompasses nine main aspects. The graph above illustrates the percentage achievement of each element based on the indicators set out in the BAN-PT and LAM guidelines. In general, the results are pretty good, with most aspects exceeding 70%.

The "Output" aspect received the highest achievement score of 88%, which encompasses student achievements at national and international levels, an ideal study period, and the level of user satisfaction among graduates. These findings demonstrate that the study program at UNNES has produced graduates who are competitive and relevant to the job market's needs [4]. Followed by the "Research" aspect (85%) and "Community Service" (82%), which shows that the involvement of lecturers and students in the tridharma of higher education is quite optimal, in line with the Independent Learning-Free Campus (MBKM) policy [17].

In the "Education and Curriculum" aspect, achievement reached 78%, with the Outcome-Based Education (OBE) based curriculum having been widely implemented. Most lecturers have implemented learning according to the RPS and involve at least 20% field practice [7]. However, the "Human Resources" and "Finance & Infrastructure" aspects show achievements that still need improvement, at 65% and 60%, respectively. This suggests the need to increase the number of lecturers with doctoral qualifications and allocate more operational funds per student to support the quality of learning [4], [9].

The aspect of "Service Management and Cooperation" received 80%, driven by documented international and national cooperation as well as evaluation of partner satisfaction. The "Student Affairs" aspect achieved a 70% success rate, thanks to an adequate admission system and effective coaching services. Meanwhile, "Vision, Mission, Goals and Strategy" attained a minimum of 75% of the target, indicating that most academics understand the strategic direction of the institution, as suggested by the ISO 21001:2018 standard [7].

Thus, the results of the AMI 2025 findings indicate that the developed instrument can measure overall quality achievement. However, several aspects need special attention, especially in terms of funding, strengthening human resources, and modernizing infrastructure to support superior accreditation and international competitiveness [6], [9].

## Discussion

The results of the 2025 Internal Quality Audit (AMI) indicate that most aspects of undergraduate study program management at UNNES have met the standards set by the Independent Accreditation Institute (LAM) and the National Accreditation Board for Higher Education (BAN-PT). The achievement graph displays nine main components, with an achievement range of 60% to 88%, reflecting the success of implementing a comprehensive internal quality assurance system [4], [5].

The aspect with the highest achievement is "Outcomes" (88%), which encompasses student achievements at national and international levels, the average ideal study period (3.5–4.5 years), and a graduate user satisfaction level of 80% or higher. This indicates that the study program has been able to produce graduates who are not only competitive in the job market but also globally competitive [4]. This achievement aligns with the requirements of ISO 21001:2018, emphasizing the importance of educational outcomes that can be objectively measured and have a positive impact [7].

The "Research" aspect is in second place with an achievement of 85%, indicating that more than 75% of research carried out by permanent study program lecturers (DTPS) involves students. This is important because student involvement in research is an essential indicator in strengthening research-based learning and improving academic quality [5], [17]. These results also demonstrate that the research roadmap has been well-designed and has become an active reference for lecturers [6].

Followed by "Community Service" with an achievement of 82%, which also shows students' active involvement in service activities. This reflects the balanced implementation of the tridharma of higher education, as well as alignment with the Independent Learning-Free Campus (MBKM) policy, which aims to build students' social sensitivity through direct experience in society [17]. Student participation in service not only strengthens their competence but also reflects the relevance of the study program to local needs.

The "Governance & Partnerships" aspect achieved an 80% success rate. These findings indicate that the collaboration carried out by the study program is quite active, both at the international ( $\geq 2$ ), national ( $\geq 6$ ), and local ( $\geq 9$ ) levels. This collaboration is crucial for enhancing institutional capacity and fostering opportunities for developing cross-sector academic programs [6]. In addition, partner satisfaction with ongoing collaboration is at least 50%, indicating a mutually beneficial synergy.

"Education & Curriculum" recorded an achievement of 78%, indicating that the curriculum has been designed based on Outcome-Based Education (OBE), and most lecturers have implemented learning in accordance with the Semester Learning Plan (RPS). An up-to-date, OBE-based curriculum is crucial to ensure that graduates not only master theory but also have applicable skills according to the needs of the world of work [7], [14]. The "Vision, Mission, Goals" aspect achieved a minimum of 75%, indicating that most academics understand the strategic direction of the institution. This is crucial in fostering a synergy of vision among study programs, faculties, and universities. A good understanding of the study program's vision and objectives will promote the development of a quality culture internally. [1], [7].

However, some aspects still show weaknesses. "Student Affairs" achieved only 70%. Although the new student admission system has been well-documented, this achievement indicates that student development services, including the development of interests, talents, and welfare, still require improvement. To create holistic graduates, non-academic development aspects require greater attention [17].

The aspect with the next lowest achievement is "Human Resources" (65%). Data shows that the ratio of permanent study program lecturers (DTPS) who have doctoral qualifications and competency certificates still does not meet the optimal target. In fact, the quality of human resources really determines the quality of teaching, research, and service [4]. According to BAN-PT standards, a minimum of 30% Masters/S3 lecturers are required to ensure the quality of the learning process [6].

The "Finance & Infrastructure" aspect shows the lowest achievement, namely 60%. This is a serious concern because the availability of operational funds of at least \$ 20 million/student/year and investment in human resources and infrastructure of at least \$ 3.5 million is still not fully achieved. In fact, adequate financing is the primary foundation in supporting learning facilities and academic development [7], [9].

Learning facilities, such as laboratories, digital classrooms, and technological devices that support online learning and practicum, remain a challenge. ISO 21001:2018 emphasizes the importance of providing a learning environment that supports effective and meaningful learning experiences [7].

Therefore, investing in the development of educational infrastructure is necessary to improve the quality of academic services.

According to the evaluation results, the AMI instrument developed has proven effective in measuring the achievement of quality indicators in accordance with BAN-PT and LAM standards. Its content validity and reliability have been tested, showing that this instrument can be used as a powerful monitoring tool in internal quality assurance processes [13], [14]. The use of quantitative data from audit results also supports evidence-based decision-making at the managerial level.

These findings indicate that the development of AMI instruments not only functions as an administrative audit tool but is also an essential part in building a sustainable quality culture. Integration of audit results into the strategic planning cycle will strengthen institutional responsiveness to regulatory changes and global demands [6], [17].

Furthermore, involving stakeholders such as lecturers, students, alumni, and industry partners in the instrument validation and implementation process makes the audit process more participatory. This approach aligns with the principle of stakeholder engagement, which characterizes modern quality assurance systems [15]. This involvement also assures that the instrument reflects the real needs and expectations of graduate users.

Overall, the results of the nine aspects in the AMI 2025 graph indicate that UNNES is on the right track in developing a quality system that is accountable, data-driven, and oriented towards continuous improvement. However, several aspects require special attention in the form of human resource training, increased education funding, and strengthened digital quality audit systems [12], [17].

## CONCLUSION

The research results indicate that the development and implementation of the Internal Quality Audit (AMI) instrument, based on LAM and BAN-PT guidelines, at Semarang State University has enabled the systematic and accurate mapping of study program quality achievements. The instrument developed through the ADDIE approach successfully evaluated nine main aspects of education quality, with most indicators showing good achievement. The three aspects with the highest achievements —namely, Outcomes, Research, and Community Service —indicate the success of the study program in producing superior graduates, as well as encouraging active involvement in the tridharma of higher education.

However, several aspects still require further attention, such as Human Resources and Finance & Infrastructure. These two aspects show achievements below 70%, indicating the need to increase investment in developing qualified human resources, as well as educational financing that supports learning facilities and infrastructure. Apart from that, Student Affairs is also an area that needs to be strengthened, especially in developing student development services that are more holistic and responsive to student needs.

Overall, this research concludes that the developed AMI instrument is not only an administrative evaluation tool but also plays a strategic role in data-driven quality planning and institutional decision-making. It is hoped that the comprehensive implementation of this instrument will strengthen the internal quality assurance system at UNNES, as well as serve as an example of best practice for other universities in building a culture of quality that is sustainable and adaptable to the dynamics of national and global higher education.

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