International Journal of Business, Management & Economics
e-ISSN: 2746-1351
Vol. 7, No. 4, November 2026

The Effectiveness of Lecturer Competency Development Budgets in Supporting Higher Education Institution Performance: An Integrative Literature Review

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Article Information:

Received: October 16, 2026; Accepted: October 26, 2026; Published: November 19, 2026

Abstract

Higher education institutions invest resources in lecturer competency development to strengthen teaching, research, community service, and institutional capacity. However, budget realization and participant numbers do not in themselves demonstrate that these investments generate sustainable competencies or improve institutional performance. This article aims to develop an integrative framework for evaluating the effectiveness of lecturer competency development budgets by synthesizing literature on lecturer professional development, performance-based budgeting, human capital, organizational capabilities, and higher education financing published between 2021 and 2026. An integrative literature review was conducted through an exploratory search and thematic synthesis; it is not presented as a preregistered systematic review or a PRISMA review. The synthesis identifies six linked dimensions: strategic alignment, budget adequacy, implementation quality, competency outputs, workplace application, and institutional contribution. Across the literature, professional development is more likely to generate sustained benefits when programs address documented competency gaps and are supported by mentoring, peer learning, managerial support, opportunities to apply learning, and traceable performance data. The article translates these findings into a budget-to-performance pathway and proposes indicators covering strategic relevance, cost and budget deviations, implementation, measurable competency change, application of new competencies, equity of access, and evidence of contribution to institutional outcomes. The framework is an analytical synthesis rather than a validated causal model; empirical testing is needed across different types of higher education institutions in Indonesia.

Keywords: Lecturer Development, Budget Effectiveness, Performance-Based Budgeting, Higher Education, Value for Money, Integrative Literature Review;

JEL Classification: H52, I23, M53

1. Introduction

Higher education institutions face simultaneous demands to improve teaching quality, research productivity, community service, accountability, and financial sustainability. Lecturers play a central role in achieving these objectives. However, investments in lecturer development are often monitored through readily available administrative indicators, such as budget realization, participant numbers, certificates, or study completion. These indicators are useful for monitoring inputs and outputs, but they cannot yet demonstrate whether new knowledge is

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applied in academic work or contributes to institutional performance.

Recent literature on lecturer development indicates that professional learning can improve pedagogical knowledge and teaching practices, but the outcomes vary according to program characteristics and organizational environments. Several reviews identify the importance of continuous development, mentoring, pedagogical collaboration, and structured opportunities to apply learning outcomes (Hervas, 2021; Sánchez-Tarazaga et al., 2024; Vreekamp et al., 2024; Smith & Wyness, 2025). Empirical research also indicates that the relationship between lecturer development and student learning outcomes does not occur automatically. Program content, implementation support, and the suitability of interventions to teaching contexts also determine the outcomes (Adams et al., 2023; McCarthy Hintz et al., 2025).

The studies reviewed further clarify that development outcomes depend on program design and institutional conditions, rather than merely on participant attendance. Through a systematized literature review of 16 scholarly articles covering 13 international perspectives, Smith and Wyness (2025) identified pedagogical collaboration, peer review, professional communities, relevance, program structure, and voluntary participation as elements associated with lecturer engagement. Nallaya et al. (2026), through a longitudinal mixed-methods evaluation of a ten-week program, reported that program relevance to participants' roles, authentic tasks, reflection, and the integration of technology, content, and pedagogy supported both short-term teaching improvements and long-term professional development. These findings suggest that budget proposals need to explain learning mechanisms and post-program application plans, rather than only the number of training participants.

At the same time, performance-based budgeting aims to connect public resources with results and improve the use of performance information in budgetary decision-making. International evidence cautions that performance indicators should not be treated as mechanical formulas for determining allocations; in many systems, performance information is used to support managerial discussions rather than automatically determine budget increases or cuts (OECD, 2025b). In Indonesian higher education, studies of performance-based budgeting indicate implementation constraints and difficulties in tracing expenditures to specific performance indicators when a single activity contributes to several indicators simultaneously (Handayani et al., 2024; Sriyono et al., 2024).

The research gap lies at the intersection of three bodies of literature: lecturer professional development, performance-based budgeting, and institutional performance. These areas are often discussed separately, making it difficult to trace how financial inputs are translated into competency development and institutional benefits. The objective of this integrative literature review is to synthesize these research streams and develop an evidence-informed framework for evaluating lecturer competency development budgets. Specifically, the review asks: (1) which dimensions and indicators can be used to evaluate budget effectiveness; (2) what conditions help translate individual competency development into academic practice and institutional contribution; and (3) how can institutions trace expenditure, competency change, workplace application, and performance evidence?

The article contributes an integrative framework that connects budget decisions with competency and performance evidence, rather than claiming that particular expenditures causally improve higher education institution performance. Its central analytical proposition is that budget effectiveness should be judged through a linked set of indicators: strategic relevance of the program; adequacy and justification of costs; implementation quality and

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explained budget deviations; measurable competency gains; application of competencies in teaching, research, community service, or academic leadership; equitable access to development opportunities; and plausible contribution to institutional outcomes. The framework provides transparent questions and evidence categories for planning, monitoring, and post-program evaluation in Indonesian higher education institutions.

In the context of Indonesian national policy, the effectiveness of lecturer competency development budgets is grounded in Law No. 14 of 2005 concerning Teachers and Lecturers (Republic of Indonesia, 2005), particularly its provisions on developing the lecturer profession and supporting funding to improve professionalism. Furthermore, Minister of Higher Education, Science, and Technology Regulation No. 39 of 2025 (Ministry of Higher Education, Science, and Technology of the Republic of Indonesia, 2025) concerning Higher Education Quality Assurance and the 2025–2029 Strategic Plan of the Ministry of Higher Education, Science, and Technology provide a context for higher education institutions to connect human resource development with improvements in educational quality, relevance, and institutional performance. Within an accountability framework, the relationship among the Strategic Plan (Rencana Strategis or Renstra), Key Performance Indicators (KPIs), and budget plans needs to be translated into indicators that measure not only expenditure realization and the number of lecturers participating in training, but also competency changes, the application of development outcomes, and their contribution to the performance of the three pillars of higher education. Accordingly, budget effectiveness needs to be evaluated based on the relationship between inputs, competency development outcomes, and institutional impact, while taking into account other factors that influence higher education institution performance.

2. Literature Review

2.1 Design and Scope of the Review

This article uses an integrative literature review to combine conceptual contributions, findings from previous reviews, and empirical evidence on lecturer development and budget effectiveness. The integrative approach was selected because the research questions encompass various types of evidence, namely studies on lecturer development, performance-based budgeting, and policy analyses of higher education financing. The review focuses on publications from 2021 to 2026, while retaining earlier foundational theories to explain the conceptual framework.

2.2 Search Strategy and Eligibility Criteria

The search began in early 2026 and combined the terms “lecturer competency development,” “faculty professional development,” “higher education,” “performance-based budgeting,” “budget effectiveness,” “university performance,” “human capital,” and “value for money.” Search sources included publisher websites, journal pages linked to DOI records, PubMed/PMC, OECD publications, and relevant Indonesian journal and institutional sources. Studies were considered eligible when they addressed at least one of four areas: professional development outcomes in higher education; the relationship between budgets and performance; institutional capacity or staff development; or higher education financing. Publications were excluded when they were unrelated to higher education staff development or budgeting, or when their bibliographic metadata could not be sufficiently verified for citation. Because the search was exploratory and a complete screening log was not retained, the article does not

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report an invented total of records identified, screened, or included.

The synthesis was thematic rather than statistical. The authors organized findings into six analytical categories: strategic alignment, budget adequacy, implementation quality, competency outputs, competency application, and institutional contribution. These categories were used to compare recurring findings across the literature on lecturer development, budgeting, and organizational capability. The synthesis distinguishes claims directly reported by individual studies from the framework proposed by this article. Because study designs, settings, and outcome measures differ, the findings were compared conceptually rather than treated as directly equivalent effect estimates. The search was not preregistered and a complete screening log was not retained; accordingly, the article is an integrative review, not a systematic review claiming comprehensive coverage.

An exploratory literature search began in early 2026 using a web search engine with five Indonesian- and English-language queries focused on funding for lecturer competency development, academic training, academic staff productivity, and higher education institution performance. The search generated several source records, including journal articles, institutional repositories, and policy documents.

2.3 Synthesis and Quality Considerations

Each source was examined based on its objectives, context, methods, reported findings, and relevance to the review questions. Review articles were used to identify recurring patterns in lecturer development; empirical studies were used to explain specific relationships and limitations; while policy publications provided context for performance-informed budgeting and higher education financing. This synthesis distinguishes findings reported by the sources from the framework proposed in this article. Because the studies vary in design and context, comparisons were conducted conceptually, rather than assuming that all impact measures could be compared directly.

3. Research Method

3.1 Research Design and Scope

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verified were excluded. The search was exploratory; therefore, the review does not claim exhaustive coverage or full PRISMA reporting.

The final synthesis was conducted thematically rather than through meta-analysis. The findings were coded into six analytical categories: strategic alignment, budget adequacy, implementation, competency outputs, competency application, and institutional contribution. Because this article is an integrative review and the search process was not preregistered, it does not claim to be a PRISMA systematic review or to have covered all publications during the period.

An exploratory literature search began in early 2026, focusing on funding for lecturer competency development, academic training, academic staff productivity, and higher education institution performance. The search generated several source records, including journal articles, institutional repositories, and policy documents. This activity is provisionally treated as an exploratory literature search and is not yet a systematic review with complete PRISMA reporting.

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4. Findings and Discussion

4.1 Budget Effectiveness Beyond Absorption

Performance-based budgeting is intended to incorporate performance information into resource allocation and management decisions. OECD reports indicate that performance-informed approaches are widely used, but their application varies and does not constitute an automatic formula linking a single indicator to budget increases or cuts (OECD, 2025b). This is important in lecturer development because program benefits may emerge over different periods and be influenced by academic discipline, career stage, and institutional support.

In the Indonesian context, Handayani et al. (2024) identify budget constraints as one of the obstacles to implementing performance-based budgeting in private higher education institutions. Sriyono et al. (2024) report that budget realization at a public higher education institution increased alongside progress in several key performance indicators. However, tracing specific expenditures to individual indicators remained difficult because one activity could support several indicators. Both studies show that absorption is a process indicator, not an adequate measure of effectiveness when considered in isolation. This interpretation is consistent with the Indonesian higher education literature, which identifies implementation constraints in performance-based budgeting and cautions that financial and performance information must be connected to be useful for decision-making (Lorensius et al., 2021).

In lecturer development programs, differences between planned and actual budgets need to be interpreted in context. Low realization may indicate unrealistic planning, recruitment or

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procurement delays, participant eligibility constraints, changing needs, or the availability of alternative funding sources. Conversely, high realization may occur alongside low competency application or limited program outcomes. Therefore, evaluation needs to explain deviations and their implications rather than classify programs solely according to the percentage of the budget spent.

Evidence on internal funding links budget inputs with educational practices. Illingworth (2025), through a study of internally funded teaching and learning projects at a Scottish university, identified reported benefits in the form of improved pedagogical skills and cross-disciplinary collaboration. The study also identified administrative burdens and the need for stronger project management support. This does not mean that every internal grant is automatically effective; rather, funding design, implementation support, and collaboration arrangements need to form part of value-for-money assessments. In the Indonesian context, these mechanisms need to be assessed alongside procurement regulations, budget calendars, and the distribution of development opportunities.

Budgeting practices for lecturer competency development need to be critically examined in terms of the relationships among inputs, processes, outputs, and outcomes. Administrative indicators, such as budget realization, the number of training participants, and certificates issued, remain necessary to ensure implementation accountability, but they are insufficient to demonstrate the effectiveness of resource utilization. Without measurements of competency changes, application of training outcomes, and contributions to the performance of the three pillars of higher education, evaluation risks emphasizing procedural compliance over program benefits.

Another issue is the need to integrate financial and human resource data. Information on program costs, participant profiles, competency needs, training evaluation results, and performance achievements needs to be connected so that institutions can assess cost efficiency and the effectiveness of development interventions. In this context, post-training evaluation is an important mechanism for ensuring that acquired competencies are actually applied in the workplace. The Ministry of Finance's budget performance evaluation framework and the Ministry of Administrative and Bureaucratic Reform's performance accountability approach provide a foundation for strengthening evaluations oriented toward benefits and outcomes rather than budget absorption alone.

Thus, the main challenge in budgeting for lecturer competency development is not merely the size of the funds allocated, but the institution's ability to trace the relationships among expenditures, competency improvements, changes in academic practices, and higher education institution performance. This conclusion is an analytical proposition that needs to be further tested using budget realization data, human resource development records, training evaluations, and performance indicators from several higher education institutions. Such empirical research is needed to determine whether administrative indicators, data fragmentation, or weak post-training evaluation are the most dominant constraints in the institutions studied.

4.2 Findings on Lecturer Development

The literature does not support a single professional development model that can be applied uniformly across all contexts. A review of lecturer induction programs in higher education found variations in program formats and highlighted the importance of mentoring, mentor preparation, and differences in program duration and content (Sánchez-Tarazaga et al., 2024). A systematic review of pedagogical development programs also demonstrated substantial

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variation in program characteristics, institutional contexts, and lecturer development outcomes (Vreekamp et al., 2024).

Evidence from specific programs indicates that structured pedagogical training can improve teaching-related competencies, although such changes need to be attributed to programs through careful design and measurement (Adams et al., 2023). A study of pedagogical training in Portugal reported positive participant perceptions and implications for teaching practices (Teacher professional development in higher education, 2023). More recent evidence on STEM faculty development links certain program designs to student learning outcomes while also emphasizing that training content and implementation support influence outcomes (McCarthy Hintz et al., 2025).

The implication for budgeting is that the unit of investment should not be defined solely as participation in an activity. Programs need to establish competency gaps, learning mechanisms, expected outputs, workplace application plans, and the evidence used to assess progress. Mentoring, peer observation, collaborative course redesign, research groups, and post-training implementation support may be more suitable for certain needs than a one-time workshop. The choice of program format needs to be based on target competencies and available evidence, rather than on the assumption that one format is always superior.

Other studies reviewed reinforce the importance of assessing different outcomes separately. Cotta et al. (2024), through a systematic review and meta-analysis of faculty development programs in the health field, reported improvements in teaching-related behavior, teaching quality, leadership, and self-assessment. They also recommended more specific research into the competencies successfully acquired. Malami and Onen (2023), in a study of academic staff at Sokoto State University, found a positive relationship between continuing professional development and teaching and community service performance, but did not find a statistically significant relationship with research performance in that context. This finding serves as a reminder that "lecturer performance" should not be treated as a uniform outcome; expected effects may differ according to competency domain, program type, and institutional context.

Additional studies reinforce that professional development outcomes are context-dependent and should be assessed at more than one level. Reviews of faculty development in health professions identify variation in program design and emphasize the need to define the teaching roles and competencies targeted by an intervention (Kohan et al., 2023; Cotta et al., 2024). Studies of academic training and teaching seminars also report links between development activities and teaching practice, while highlighting the importance of context and participant experience (Bingwa & Ngibe, 2021; Ortega-Dela Cruz & Perez, 2024). Research on lecturer training and professional evaluation similarly supports continued development, but does not by itself establish that expenditure is cost-effective or that institutional outcomes were caused by the program (Suspahariati & Setyobudi, 2022; Tep, 2024). Taken together, these studies support a distinction between the existence of a development activity, evidence of competency change, and evidence that the change is used in academic work.

4.3 From Human Capital to Organizational Capability

Human Capital Theory provides a basis for investment in knowledge and skills, while the resource-based perspective highlights the conditions that enable internal expertise to develop into strategic organizational capabilities. For higher education institutions, a new qualification or certificate obtained by a lecturer represents an output at the individual level. Organizational value is more likely to materialize when that expertise is applied in curriculum design, student

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supervision, research collaboration, community service, academic leadership, or institutional improvement.

Reviews of lecturer development emphasize collaborative and continuous learning, including peer review of teaching and the formation of professional communities (Smith & Wyness, 2025). This supports the need for mechanisms that connect individual learning with institutional practices, such as opportunities to apply skills, managerial recognition, peer exchange, workload arrangements, and access to resources. Without these conditions, institutions may fund training without building lasting collective capabilities.

Chadha (2024) adds a professional capital perspective by highlighting the role of mentoring, practical guidance, and institutional social networks in supporting the continuing development of science lecturers. Keiller et al. (2022), through a rapid realist review of online faculty development for health professions educators in low- and middle-income countries, identified intentionally designed communities of practice and active discussion as important mechanisms for developing professional and interpersonal skills. Taken together, these studies suggest that funded courses may provide limited organizational benefits if participants lack time, mentoring, peer networks, or opportunities to apply and share what they have learned.

Accordingly, the evaluation chain needs to distinguish among three claims: (a) the program produces an output; (b) participants apply the competencies they acquire; and (c) that application plausibly contributes to broader outcomes. Each claim requires different evidence. A certificate may demonstrate program completion, revised course plans or research products may demonstrate application, while contributions to program or institutional outcomes require evidence triangulation and careful interpretation.

Related empirical evidence from Indonesian organizational settings can be found in the study by Rahman et al. (2023), which examined the effects of leadership, work motivation, and job training on employee performance at CV Kerupuk Edun. Using a quantitative survey of 55 employees analyzed through multiple linear regression, the study found that job training, together with leadership and work motivation, had a positive and significant effect on employee performance, and that the three variables jointly explained 81.2% of the variation in performance. This finding indicates the importance of evaluation that goes beyond activity implementation and participant attendance to also assess whether development activities are reflected in performance. For Indonesian higher education institutions, the implication is the need to connect lecturer development budget planning with measurable outcome indicators and post-training evaluation. Nevertheless, the study was conducted in a private enterprise rather than a higher education institution, and it cannot be used to conclude that development budgets are financially effective because program costs were not examined and its cross-sectional design does not establish causal relationships between training and performance.

In Indonesian legal-entity public universities (Perguruan Tinggi Negeri Badan Hukum, or PTN-BH), competency development may involve different types of investment, including pedagogical training, doctoral study, professional certification, digital learning, research collaboration, and seed funding. These examples illustrate why the effectiveness of development budgets cannot be inferred from the type of activity or the existence of funding alone. Evaluation also requires actual cost data, documented competency needs, evidence of competency change, and measurable application in academic work. The proposed framework therefore recommends integrating budget information, competency needs, training outcomes,

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and performance achievements to inform subsequent funding decisions.

4.4 Equity, Budget Adequacy, and Value for Money

Effectiveness also has a distributional dimension. Equal allocations for every faculty do not necessarily produce equitable access because costs and competency needs differ according to academic discipline, laboratory or clinical requirements, career stage, and strategic priorities. Conversely, a higher cost per participant does not automatically indicate inefficiency if the investment supports scarce expertise or a longer qualification pathway. OECD's analysis of higher education financing emphasizes the importance of funding arrangements and financial sustainability in the operation of higher education systems (OECD, 2025a).

Value for money needs to be assessed through economy, efficiency, and effectiveness without reducing these dimensions to a single ratio. Economy concerns acquiring inputs at reasonable cost; efficiency concerns the relationship between inputs and outputs; while effectiveness concerns the achievement of intended results. For lecturer development programs, cost per participant or per certificate may be useful indicators, but they remain incomplete. If reliable data are available, cost per verified competency application or per strategic outcome may provide more meaningful information, although comparisons still need to account for differences in program types and the timeframes in which their effects emerge.

An equitable allocation model can combine a base allocation with needs-based or competitive components. Needs-based components should use documented competency gaps and strategic relevance, while competitive components can support high-priority initiatives that cannot be met through routine allocations. Such a model should not penalize units with more costly needs or programs whose benefits require a longer period to become visible.

4.5 Data Governance and Traceability

One recurring challenge in performance-based budgeting is connecting expenditures with results when one activity supports several objectives. This problem cannot be resolved merely by adding a dashboard if definitions, data identifiers, and data responsibilities remain inconsistent. Higher education institutions need minimum traceable records that connect strategic needs, program identifiers, budget ceilings, actual expenditures, participants or target groups, acquired competencies, evidence of application, and related performance indicators.

This requires coordination among finance, human resources, academic development, planning, and performance management functions. Data governance needs to establish shared terminology, accountable data owners, validation procedures, access arrangements, and update cycles. Longitudinal records are particularly important because the effects of doctoral studies, certification, research training, and pedagogical development may emerge at different times.

Digital systems can support this traceability, but digitalization should not be equated with effective evaluation. If the data model records only expenditures and attendance, the digital system will merely reproduce an input-oriented approach in digital form. Information architecture should enable tracing from budget to performance and support managerial discussions about programs that need to be continued, redesigned, expanded, or discontinued.

Integrating financial planning and human resource management, supported by clear data governance and post-training evaluation, can improve the effectiveness of lecturer competency development budgets by increasing allocation accuracy, making program outcomes

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measurable, and using performance evidence in budgetary decision-making.

4.6 An Integrative Budget-to-Performance Framework

The literature synthesis yields a six-stage framework. This framework is an analytical model based on the reviewed literature, not a validated measurement instrument or an official national standard. For evaluation purposes, each stage should be assessed through the following indicator logic: (1) strategic alignment—documented competency gap and relevance to institutional priorities; (2) budget adequacy and economy—justified allocation and cost assumptions; (3) implementation—delivery against plan, timeliness, participation, quality, and explained deviations; (4) competency outputs—completion and measurable change against a defined competency standard; (5) application—evidence that competencies are used in teaching, research, community service, or academic leadership; and (6) institutional contribution—plausible change in relevant institutional indicators supported by triangulated evidence. Equity of access and cost per participant meeting the competency standard should be assessed across these stages.

To make the integrative contribution explicit, the reviewed evidence was compared across three connected research streams. Lecturer development studies explain which learning designs and support conditions are associated with competency change; performance-based budgeting studies explain why expenditure and performance information must be traceable but should not be linked through a mechanical one-indicator funding formula; and human-capital and organizational-capability perspectives explain why individual learning must be applied, shared, and supported before it can plausibly contribute to institutional results. The synthesis therefore advances a new integrative proposition: budget effectiveness is not a single financial ratio but an evidence chain in which the strength of the claim must match the level of evidence available.

Table 1 summarizes this cross-stream synthesis. The convergence across the streams is that funding alone is insufficient; the key gap is the lack of a consistent trace between program costs, competency gains, workplace application, and institutional performance. The proposed framework addresses this gap by assigning distinct evidence requirements to each stage and by treating institutional contribution as plausible and traceable, not automatically causal.

Table 1. Cross-stream synthesis supporting the integrative framework

Research stream	Recurring insight in the literature	Limitation when considered alone	Integrated implication
Lecturer professional development	Program relevance, mentoring, collaboration, reflection, and opportunities to apply learning shape development outcomes.	Participation, satisfaction, or completion does not demonstrate sustained competency use or institutional benefit.	Measure competency change and workplace application after the activity.
Performance-based budgeting and financing	Performance information can inform allocation and accountability, but expenditure-to-indicator links can be difficult to trace.	Budget absorption or a single performance indicator cannot establish value for money on its own.	Connect program costs, budget deviations, outputs, and outcomes using transparent evidence.
Human capital and	Individual knowledge becomes organizational	A qualification or certificate alone does	Assess application, knowledge sharing,

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organizational capability	value when applied, shared, and supported by leadership and institutional systems.	not prove organizational capability or causal impact.	and plausible contribution to institutional indicators.

Source: Author's synthesis based on the literature reviewed.

Table 2. Integrative Budget-to-Performance Evaluation Framework

Dimension	Evaluation Questions	Evidence That Can Be Used	Main Interpretation
Strategic needs	Does the program address identified competency gaps?	Strategic plans, competency maps, needs analyses, unit work targets	Strategically aligned / poorly aligned
Budget allocation	Is the allocation justifiable and adequate for the identified needs?	Budget ceiling, cost assumptions, alternative funding sources, unit needs	Adequate/underfunded / excessive
Implementation	Are activities implemented as planned and with adequate quality?	Budget realization, timeliness, participation, procurement, deviation records	Implemented / delayed / redesigned
Competency outputs	What immediate results are produced?	Completion, qualifications, certifications, teaching or research outputs	Achieved / partially achieved / not achieved
Competency application	Are new competencies used in academic work?	Updated course designs, research outputs, mentoring, peer review, community service outputs	Applied / beginning to be applied / no evidence yet
Institutional contribution	What plausible contribution to institutional outcomes can be traced?	Program-level indicators, quality evidence, triangulated narratives	Contribution supported by evidence / uncertai

Source: Author's synthesis based on the literature reviewed.

The framework supports three stages of evaluation. Ex ante evaluation examines needs, program logic, and budget adequacy. Evaluation during implementation examines implementation progress and deviations. Ex post evaluation examines application, outcomes, and contributions. This distinction prevents a program from being declared fully effective merely because its budget has been spent or its participants have completed the activities.

The framework also supports proportional evidence standards. Short-term programs may initially be assessed through their outputs and early application, whereas doctoral studies or international research collaborations may require longer monitoring periods. The absence of immediate institutional impact does not necessarily mean that a program has failed; however,

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institutions need to explain what evidence is expected and when that evidence will be collected.

4.7 Implications for Indonesian Higher Education

The first practical implication for Indonesian higher education institutions is to integrate competency development with strategic planning and annual budgeting. Each proposal needs to explain the competency gap, target group, program rationale, expected outputs, application plan, cost assumptions, and evidence of success. Second, higher education institutions need to establish post-program follow-up, for example, three to six months to assess initial application and twelve to twenty-four months for outcomes that require a longer period. These timeframes are proposed management options and need to be adjusted according to the type of intervention.

Mushlahuddin et al. (2026) examine digital competency development through the SINDIG learning management system at Universitas Negeri Surabaya and report that system disruptions, limited socialization, integration needs, and the need for intensive training affect its optimal use. Sugiyanto and Sutisna (2025) found that lecturer development programs were significantly associated with competitiveness at the institution they studied, including an indirect pathway through organizational leadership. These findings are context-specific and should not be treated as universal causal evidence. However, they point to a practical principle: investment effectiveness depends on the integration of budgeting, implementation support, leadership, infrastructure, and follow-up.

A comparison of the studies by Nifasri et al. (2024), Mushlahuddin et al. (2026), and Sugiyanto and Sutisna (2025) reveals three important dimensions of lecturer competency development: funding governance and monitoring, the alignment of digital support with user needs, and the relationship between lecturer development and institutional outcomes. Nifasri et al. highlight budget and monitoring constraints in a case study at STAI Al-Azhary Cianjur, while Mushlahuddin et al. (2026) demonstrate that optimizing the SINDIG LMS at UNESA requires system improvements, socialization, integration, and training based on lecturers' needs. Meanwhile, Sugiyanto and Sutisna (2025) found that lecturer development programs significantly affected the competitiveness of Universitas Buddhi Dharma in the quantitative model they tested. Although the contexts and approaches of the three studies differ, their findings provide a basis for questioning whether lecturer development planning has been connected to competency needs, institutional support, and performance targets. In the context of UPI, these issues need to be analyzed through the traceability of the Strategic Plan, Performance Agreements, Annual Work Plans and Budgets (RKAT), human resource development data, and performance evaluation results. However, findings from the three institutions cannot be directly generalized to UPI or all Indonesian higher education institutions. Furthermore, none of the three studies directly demonstrates the financial effectiveness of lecturer development budgets through integrated cost and benefit measurement. Therefore, further research needs to examine the relationship among budget allocation and realization, lecturer competency changes, application of development outcomes, and contributions to higher education performance achievements.

The third implication is to use evaluation results as learning information rather than merely as a basis for punitive rankings. Work units need to explain deviations and establish corrective actions. Fourth, higher education institutions need to build shared data structures that connect financial, human resource, and performance systems. Fifth, access and equity need to be assessed so that budgets do not simply follow historical spending patterns or benefit units with

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stronger administrative capacity.

The most realistic recommendation for Indonesian higher education institutions is to establish a traceability mechanism linking lecturer competency development budgets, competency needs, training outcomes, and performance achievements without immediately having to develop an expensive new information system. Initial priorities can be implemented by integrating existing data held by finance units, human resource managers, quality assurance units, and planning units. This recommendation is consistent with the findings of Nifasri et al. (2024) regarding the importance of funding and monitoring, Mushlahuddin et al. (2026) regarding the alignment of digital support with lecturers' needs, and Sugiyanto and Sutisna (2025) regarding the relationship between lecturer development and institutional competitiveness. However, these three studies do not directly demonstrate the financial effectiveness of data integration; therefore, policy should begin as a governance improvement mechanism whose outcomes are tested gradually.

Implementation barriers that need to be anticipated include differences in data formats, non-standardized indicator definitions, limited analytical capacity, inter-unit coordination, and the tendency for evaluation to focus on expenditure realization and participant numbers. To address these barriers, higher education leaders need to establish a clear division of responsibilities: human resource units identify competency gaps and monitor the application of training outcomes; finance units record program costs systematically; planning units connect programs with strategic objectives; while quality assurance units verify evaluation results and follow-up actions.

Operationally, this policy can be integrated into the Strategic Plan–Annual Work Plan and Budget–Performance Agreement–Outcome Evaluation cycle. The Strategic Plan establishes the direction of competency development and the institutional outcomes to be achieved; the Annual Work Plan and Budget translates these into programs, targets, cost requirements, and output and outcome indicators; Performance Agreements establish accountability for the responsible units; while periodic evaluation assesses actual costs, competency changes, application of training outcomes, and contributions to the performance of the three pillars of higher education.

Indicators should not be limited to the percentage of budget absorption and the number of lecturers participating in training, but should also include the proportion of participants who demonstrate measurable competency improvements, the proportion who apply training outcomes, and the cost per participant who achieves the competency standard. Initial implementation can be carried out in several priority programs before being expanded based on evaluation results. This approach is consistent with the orientation of budget performance evaluation under Ministry of Finance Regulation No. 22/PMK.02/2021 (Ministry of Finance of the Republic of Indonesia, 2021) and the direction of higher education quality assurance under Minister of Higher Education, Science, and Technology Regulation No. 39 of 2025 (Ministry of Higher Education, Science, and Technology of the Republic of Indonesia, 2025). Thus, the policy does not merely add another layer of administration but strengthens the use of evidence to determine which programs should be retained, improved, or have their funding redirected.

The influence of programs on performance still needs to be assessed carefully because achievements in the three pillars of higher education are also influenced by leadership,

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facilities, workload, and other institutional factors.

4.8 Limitations and Research Agenda

This review has several limitations. First, the approach used is an integrative review rather than a preregistered systematic review; therefore, the search is not claimed to have covered all publications. Second, the included studies differ in context, design, and outcome measures, limiting direct comparisons. Third, international evidence may not be directly applicable to Indonesian higher education institutions because funding arrangements, institutional autonomy, and lecturer career systems differ. Fourth, the proposed framework has not been empirically validated. Future research could apply this framework to public and private higher education institutions, compare different competency development pathways, and use longitudinal data to examine relationships among costs, competency application, and institutional outcomes.

5. Conclusion

The reviewed literature indicates that the effectiveness of lecturer competency development budgets cannot be determined solely through budget absorption or participant numbers.

Budget effectiveness is more appropriately understood as a traceable pathway, beginning with strategic needs, allocation, implementation, and competency outputs, followed by workplace application and institutional contribution. Research on lecturer development indicates that program design, continuous support, collaboration, and opportunities to apply learning influence the likelihood of changes in academic practices. Literature on performance-based budgeting also emphasizes the importance of usable performance information while cautioning against mechanically simplifying the relationship between an individual indicator and funding.

The main contribution of this article is an integrative framework that combines budget and competency evidence within a single evaluation logic. In response to the review objective, the proposed indicators cover strategic alignment, budget adequacy and economy, implementation quality, measurable competency outputs, workplace application, equity of access, and plausible institutional contribution. For higher education institutions, this means establishing competency objectives, documenting costs and implementation, evaluating post-program application, improving data governance, and considering equity across work units. The framework should be treated as an evidence-informed proposal for practical use and empirical testing, rather than as proof that a particular level of expenditure causes improvements in institutional performance.

Based on the synthesis of the literature and policy documents discussed, the most important academic contribution of this review is to position the integration of budgets, lecturer competency management, and higher education performance measurement as a unified evaluation framework, rather than as separate administrative processes. The findings of Nifasri et al. (2024) regarding funding and monitoring challenges, Mushlahuddin et al. (2026) regarding the importance of aligning digital support with lecturers' needs, and Sugiyanto and Sutisna (2025) regarding the relationship between lecturer development and institutional competitiveness provide a conceptual foundation for this approach, although they do not directly demonstrate financial budget effectiveness. Therefore, the most realistic policy recommendation is to require integrated evaluation of each priority lecturer competency development program by linking budget realization data, competency improvements,

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application of training outcomes, and performance indicators within the Strategic Plan, Annual Work Plan and Budget, and Performance Agreement cycle. Implementation can begin by integrating existing data and piloting the approach in several priority programs, with clear divisions of responsibility among finance, human resource, planning, and quality assurance units. This approach has the potential to strengthen accountability and the quality of budget Malami, A. S., & Onen, D. (2023). Impact of continuous professional development on academic staff performance in Sokoto State University, Sokoto, Nigeria. *Zamfara International d*ecisions while providing empirical evidence to assess the benefits of lecturer development.

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