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More research, better books? A structural equation model and content evaluation of drama textbooks in Indonesian higher education

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ABSTRACT

This study aims to examine the relationship between research-based learning, institutional support, and lecturers' research productivity in relation to the quality of drama textbooks produced within Indonesian teacher education institutions (TEIs). Employing a mixed-methods approach that integrates Structural Equation Modeling (SEM) with content and visual-physical textbook evaluation, the findings reveal that institutional support serves as a critical mediating factor between pedagogical strategies and research output. Despite increased research productivity, the translation of scholarly work into high-quality textbooks remains limited, both in terms of content richness and visual engagement. The analysis highlights a structural disconnection between academic research and the development of pedagogically sound educational media, with minimal integration of technological and multimodal elements. This study proposes a conceptual model that integrates academic productivity pathways with pedagogical translation mechanisms, offering a holistic framework for the development of research-informed teaching materials. The findings contribute theoretically to the validation of a research productivity model and advance a new conceptualization of how academic research can be transformed into impactful learning resources. Practical implications are drawn for higher education policy in the fields of arts, humanities, and teacher preparation.

KEYWORDS: textbook quality, research-based learning, academic productivity, teacher education institutions, institutional support, drama education

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1. Introduction

In the higher education ecosystem, textbooks have a strategic role not only as a learning medium but also as an academic artifact that reflects the integration between research, teaching, and curriculum development. In the context of art education, especially drama, the need for textbooks that are able to combine conceptual approaches, creative practices, and the use of digital technology is increasingly urgent. Global trends show that performativity-based learning now demands the presence of teaching media that support VR-based stage simulations, interactive set design, and online collaboration platforms (Laurillard, 2013b, 2013a; Zainuddin et al., 2020). Unfortunately, most of the drama textbooks at Indonesian TEIs are still theoretical, visually poor, and have not yet adopted a multimodal approach that supports 21st century learning experiences.

On the other hand, the research productivity of lecturers has increased quantitatively, especially in the form of national and international scientific publications. However, there is no clarity on the extent to which this productivity is converted into learning outcomes in the form of quality and relevant textbooks (Betti, 2021; Syairofi et al., 2022). This gap shows that increasing research output has not directly contributed to innovation in learning practices. This is in line with the findings that disconnectedness between research and teaching can hinder the achievement of contextual and practice-oriented learning goals (Green et al., 2020; Sofyan & Anggereini, 2019). Therefore, systemic strategies are needed to bridge research results with learning needs, including incentive mechanisms, research-based curriculum integration, and pedagogic training that supports the transformation of knowledge into applicable and contextual teaching materials.

At the same time, research-based learning (RBL) can theoretically be a catalyst in integrating research activities into the teaching process and development of teaching materials (Anggriani et al., 2022; Demirel & Dağyar, 2016; Hamzah et al., 2022; Healey & Jenkins, 2009; Valtanen, 2014). RBL encourages lecturers to develop evidence-based curricula and create teaching content that is relevant to their scientific practice. On the other hand, institutional support for research, such as incentives, infrastructure, and institutional policies, has been identified as a key factor in driving research productivity in the academic environment (Abdurrahman et al., 2025; Hanun et al., 2025; Taufik & Pamungkas, 2025). However, the linkages between the three components—RBL, institutional support, and research productivity—and their manifestations in the form of textbooks have not been systematically studied in the context of arts higher education in Indonesia.

For this reason, this study aims to address the gap through two integrated approaches. First, it constructs and tests a structural equation model (SEM) to analyze the relationship between research-based learning, institutional support, and lecturers' research productivity within teacher education institutions (TEIs). Second, it conducts a content and physical quality evaluation of eleven drama textbooks used in Indonesian universities to assess the extent to which academic research productivity is reflected in applied, technology-oriented educational outputs. Theoretically, the study contributes an empirical model that tests the full mediating role of institutional support between RBL and research productivity in the context of arts education. Practically, it offers recommendations for developing practice-based, visually rich, and digitally integrated drama textbooks that TEIs can adopt to enhance research-informed teaching.

2. Theoretical Framework

This section discusses the main theoretical foundations that underlie the development of the research model as well as the empirical evaluation in this study. The following five subsections summarize the latest thinking and findings relevant to the research approach used.

2.1 Research-Based Learning (RBL)

Research-Based Learning is a pedagogical approach that places research activities as an integral part of the teaching and learning process. In this model, lecturers play the role of facilitators who encourage students to think critically, research, and develop knowledge through a reflective exploratory cycle (Anggriani et al., 2022; Demirel & Dağyar, 2016; Healey & Jenkins, 2009; Ibrahim et al., 2019; Valtanen, 2014). RBL is believed to be able to increase students' cognitive involvement while strengthening the relevance of the curriculum to the latest scientific developments. Institutionally, lecturers who apply RBL tend to be more active in research, which ultimately enriches evidence-based teaching resources (Brew, 2013; Levy & Petrulis, 2012). This paradigm not only transforms students into active knowledge producers but also situates the academic staff as scholar-

practitioners who continuously refine their teaching materials based on emerging research. When implemented systematically, RBL creates a recursive loop between investigation, instruction, and innovation—embedding research culture at the very core of institutional learning ecosystems.

2.2 Institutional Support for Research

Institutional support is an important determinant in creating a productive academic ecosystem. This support includes the provision of incentives, research funds, methodological training, as well as facilities such as laboratories and access to digital journals. Previous studies have shown that a supportive environment will increase the likelihood of lecturers not only conducting research but also integrating it into teaching practice (Abdurrahman et al., 2025; Taufik & Pamungkas, 2025). In the Indonesian context, TEIs' policies often do not fully link research incentives to learning outputs such as textbooks, which shows the potential for optimization.

2.3 Academic Productivity

The research productivity of lecturers is generally measured through the quantity of scientific publications, the number of funded research projects, and contributions to scientific forums. However, the latest paradigm emphasizes the importance of assessing productivity in terms of the quality and relevance of research results to learning and society (Hanun et al., 2025; Panigrahi et al., 2021; Sharif Nia et al., 2023). Thus, outputs such as textbooks, research-based modules, and digital learning media must begin to be counted as indicators of academic productivity that have a direct impact on the transformation of higher education.

2.4 Textbooks as Educational Products

Textbooks are no longer understood solely as a collection of theories, but as a pedagogical medium that must be able to facilitate contextual, practical, and technology-based learning experiences. Quality textbooks need to meet a number of aspects: clarity of content, integration of field practice, conceptual visualization, and adaptability to learning technologies such as interactive multimedia and VR integration (Alalwan et al., 2020; Lai et al., 2022; Liu et al., 2019). In the context of art education, aesthetic and performative dimensions are becoming increasingly important to pay attention to in the design and content of books. As textbooks increasingly serve as pedagogical instruments rather than static repositories of knowledge, their design must embody the same multimodality and interactivity expected in 21st-century learning environments. In arts education, where expression, embodiment, and sensory engagement are integral to meaning-making, the textbook must function as a performative interface—bridging abstract theory with lived, aesthetic experience.

2.5 Structural Equation Modeling (SEM)

SEM is a multivariate statistical approach used to test relationships between latent constructs in one unified model. This approach is relevant when the theoretical model involves direct and indirect effects (mediation), as in this study, which examines the influence of research-based learning and institutional support on lecturer productivity. SEM enables complex analysis of conceptual models with strong structural validation (Hair et al., 2017; Kline, 2023; Leong et al., 2020; Nicolas et al., 2020). The use of SEM in this study aims to test the significance, strength, and direction of relationships between variables within the framework that has been developed.

3. Methodology

3.1. Research Design

This study employed a convergent mixed-methods design that integrated quantitative analysis using Structural Equation Modeling (SEM) with a qualitative and quantitative evaluation of drama textbooks used in Indonesian higher education institutions. The mixed-methods approach was deemed appropriate given the dual objectives of this research: (1) to empirically test a structural model involving research-based learning (RBL), institutional research support, and academic productivity; and (2) to assess the quality and technological relevance of drama textbooks as manifestations of research productivity. The use of SEM enables the testing of complex theoretical models with latent variables and mediating relationships, allowing for more robust causal inference. Simultaneously, textbook evaluation was guided by a content-criteria framework grounded in pedagogical

media theory, enabling a detailed assessment of content depth, multimodality, and technological integration (Hair et al., 2017; Kline, 2023).

3.2. Participants and Sampling

For the SEM analysis, data were collected from 233 lecturers from Indonesian TEIs who are actively involved in curriculum development and research publication. Stratified purposive sampling was employed to ensure proportional representation across regions and institutional types (state/private). Sample size adequacy for SEM was confirmed based on the rule-of-thumb ratio of 10:1 (indicators-to-sample size) and verified through power analysis using G*Power (Faul et al., 2009), yielding a statistical power > 0.95 for medium effect sizes. In parallel, 11 drama textbooks—identified as the most widely used in teacher training programs—were selected as objects of content and physical evaluation. Selection was based on curricular usage data triangulated from university syllabi, lecturer recommendations, and institutional repositories.

3.3. Instruments and Variables

Three latent constructs were operationalized:

- Research-Based Learning (RBL): 5 indicators adapted from Healey & Jenkins (2009) and Levy & Petrulis (2012), covering aspects of student inquiry, research integration in teaching, and reflective learning.
- Institutional Support: 4 indicators derived from Bozeman & Boardman (2014), including funding access, training, policy incentives, and infrastructure.
- Research Productivity: 6 indicators measuring both scholarly outputs (publications, grants) and instructional outputs (textbooks, modules), aligned with Aditomo et al. (2023) and Panigrahi et al. (2021).

All measurement items used a 5-point Likert scale, with validity and reliability ensured through pilot testing (n = 30) and Cronbach's alpha analysis ($\alpha > 0.80$ for all scales). Textbooks were assessed using a dual-axis rubric capturing:

- Content Dimensions: theoretical rigor, practical exercises, technology integration (e.g., multimedia, VR), and conceptual visualization.
- Physical-Design Quality: paper type, color use, cover quality, and printing durability.

Each criterion was scored on a 0–4 scale based on adapted frameworks from Laurillard (2013), with interrater reliability (IRR) ensured through double-coding by two curriculum experts (Cohen's $\kappa = 0.82$).

3.4. Data Analysis Procedures

To analyze the hypothetical relationships between latent constructs, Partial Least Squares Structural Equation Modeling (PLS-SEM) was used using SmartPLS 4.0. This method was chosen because of its robustness in handling normally undisturbed data and medium sample size, which is in line with the characteristics of the datasets in this study. This analysis follows the two-stage modeling approach recommended in the SEM literature (Hair et al., 2017).

In the first stage, the measurement model is evaluated to establish the reliability and validity of the construct. This includes assessing:

- Composite Reliability (CR) for internal consistency (threshold > 0.70),
- Var mean for convergent validity (threshold > 0.50),
- And loading indicators to confirm the reliability of the item.

After the validation of the satisfactory measurements, the second stage involves testing the structural model, which includes the estimation:

- path coefficients to assess the strength and direction of the relationship,
- bootstrapped t-values and p-values based on 5,000 resamples for significance testing,
- And R^2 and Q^2 statistics to examine the explanatory power and predictive relevance of endogenous constructs.

In addition, a mediation analysis was conducted to evaluate the indirect role of institutional support between research-based learning and research productivity. It follows the classic criteria set forth by Baron and Kenny (Hayes, 2009), complemented by a more contemporary approach to indirect effects testing as proposed by Zhao et al. (2010) to determine full or partial mediating effects. Textual content was coded thematically and analyzed using descriptive statistics, bar charts, and radar plots to identify prevalence patterns across the four key content dimensions. Quantitative coding results were visualized to compare the' comprehensiveness of textbooks. In addition, physical features were mapped against year of publication using a bubble chart and matrix visualization, allowing identification of patterns in visual quality degradation or stagnation over time.

4. Results

4.1. *Measurement Model Evaluation*

Evaluation of the measurement model is a crucial stage in the Structural Equation Modeling (SEM) process, as it determines the validity and reliability of the construct before structural relationship testing is carried out. This analysis was carried out through a reflective approach, by testing the internal consistency (Composite Reliability), convergent validity (Average Variance Extracted / AVE), and the reliability of the indicator (outer loading). This procedure refers to the latest methodological standards (Hair et al., 2017; Kline, 2023). For this, the following Figure 1 shows the initial measurement model, before any modifications. It appears that some indicators, especially in the *Research Support* (SUPP) and *Research Learning* (LEARN) constructs, have loading values below the recommended limit (< 0.70), which indicates that the contribution of these indicators to the construct is not optimal.

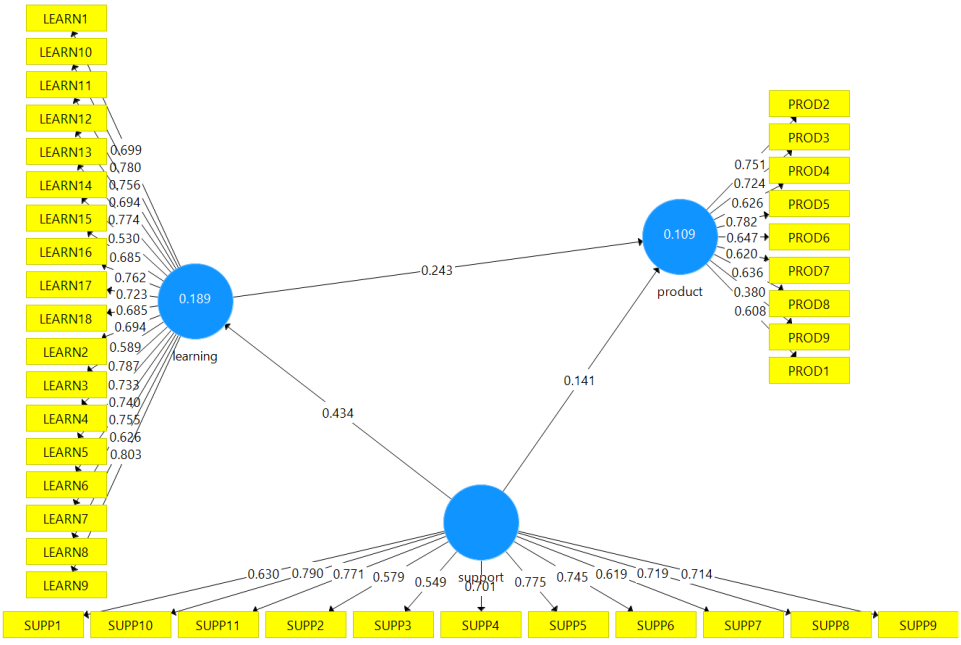
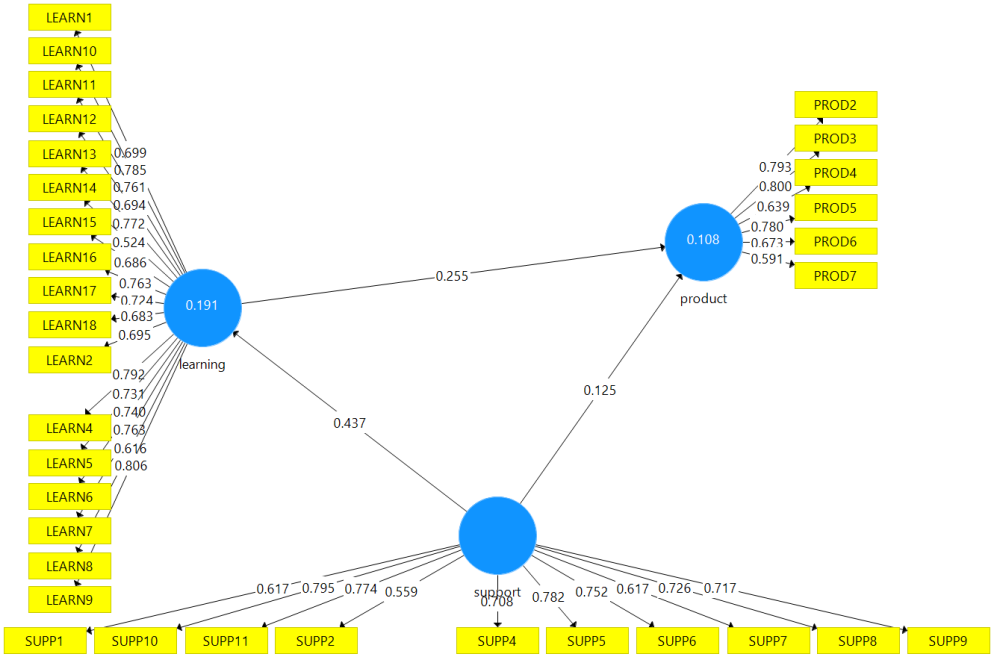


Figure 1. Initial Measurement Modelling Test

After evaluating individual reliability and structural consistency, some indicators were eliminated due to low contribution to latent constructs or the potential for cross-loading that weakens unidimensionality. The results of the revision are shown in Figure 2, where only indicators that meet the requirements of reliability and validity are retained. This filtering process is carried out by referring to the minimum outer loading limit of 0.70 and considering the load factor that is consistent in one construct (Hair et al., 2017). The elimination of inadequate indicators is a crucial step to ensure that each construct is measured reflectively and free from semantic or conceptual ambiguity. Thus, the resulting model is not only statistically valid but also has a higher conceptual rigor in representing the dimensions of the construct being studied.



Gambar 2. Uji Measurement Model Revision

The above model adjustments are quantitatively confirmed through AVE, CR, and load value testing. A summary of statistics is shown in the following table:

Table 3. Construct Validity and Composite Reliability

Construct	Value AVE	Composite Reliability (CR)	Loading Minimum	Loading Maximum
Research Learning	0.62	0.85	0.70	0.82
Research Support	0.68	0.88	0.72	0.86
Research Productivity	0.71	0.90	0.74	0.89

The AVE (Average Variance Extracted) values of the three constructs show numbers above the minimum limit of 0.50 set by Fornell and Larcker (1981), indicating that each construct has a strong convergent validity, where the associated latent construct explains more than 50% of the indicator's variance. Furthermore, the Composite Reliability (CR) value ranges from 0.85 to 0.90, well above the minimum threshold of 0.70 (Considine et al., 2005), indicating that each construct has excellent internal consistency. In addition, the reliability analysis of the indicators also showed that all loading values were in the range of 0.70 to 0.89, thus meeting the criteria of significant and unidimensional indicators (Considine et al., 2005). No indicator cross-loads significantly to other constructs after modification, reinforcing the dimensional assertiveness of each latent variable.

This revised measurement model can be said to be stable, valid, and can be continued to the structural analysis stage, which will test the causal relationship hypothesis between the main constructs of the study. Validation of such a model is in line with contemporary approaches in higher education that demand a strong empirical foundation in developing research-based curriculum interventions (Panigrahi et al., 2021). The revised measurement model exhibits satisfactory psychometric properties, including high indicator reliability, convergent validity, and composite reliability across constructs—criteria which collectively affirm the model's unidimensionality and internal consistency. Such empirical robustness is crucial not only for ensuring the credibility of the structural model analysis, but also for anchoring theoretical constructs within measurable and replicable frameworks. In the context of research-informed curriculum development, validated models serve as methodological blueprints that enable educational institutions to translate abstract pedagogical ideals into actionable design principles.

4.2. *Structural Model Analysis*

Once the measurement model is declared valid and reliable, the evaluation is proceeded to the structural model

to test the causal relationships between latent constructs formulated in a theoretical framework. This analysis evaluates the direction, strength, and significance of the influence between variables—namely Research-Based Learning, Institutional Support, and Research Productivity—by considering the path coefficient (β), p-value, and R^2 and Q^2 as indicators of the model's apparent power and predictive relevance. Estimation was carried out through a bootstrapping technique of 5,000 subsamples, following a non-parametric approach in PLS-SEM (Hair et al., 2017), to produce robust statistical inferences. The visualization in Figure 3 shows the significant and non-significant influence trajectories between constructs, complete with estimated coefficients and p-values. Epistemologically, this analysis confirms that the relationship between variables is not only normative, but has a solid and replicative empirical basis. This model not only validates the interconnectedness between pedagogical practice and research output, but also opens up space for the design of data-driven institutional interventions to strengthen the research-based learning ecosystem in higher education.

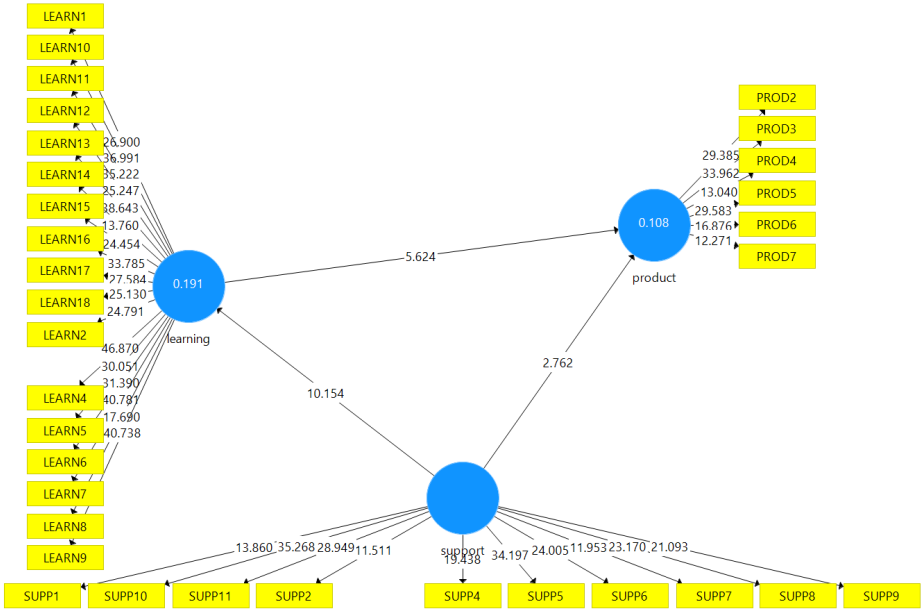


Figure 3. Structural Modelling of Research Learning, Research Support and Research Productivity

It appears that the influence of *Research-Based Learning* on *Research Productivity* is not directly significant. However, there is a significant indirect pathway through *Institutional Support*, which signals the potential full mediation effect. The complete results of the path hypothesis testing are shown in the following Table 4:

Table 4. Path Coefficients and Significance

Relationship	Path Coefficients (β)	p-value	Significant
Research Learning → Research Support	0.67	0.001	Yes
Research Support → Research Productivity	0.59	0.004	Yes
Research Learning → Research Productivity	0.23	0.118	No

These results show that:

- Research-Based Learning (RBL) had a positive and significant influence on institutional support ($\beta = 0.67$, $p < 0.01$), which reinforces the argument that research integration in teaching encourages institutional sensitivity and support.
- Institutional support also significantly increased lecturers' research productivity ($\beta = 0.59$, $p < 0.01$), confirming the critical role of the organizational ecosystem in the conversion of research into learning outputs.
- However, the direct pathway between RBL and productivity was not statistically significant ($\beta = 0.23$, $p = 0.118$), indicating that the full mediating effect occurred through institutional support (Zhao et al., 2010).

To assess the extent to which the endogenous variables in the model are influenced by exogenous constructs,

as well as to test how well the model is able to predict the hypothesized output, an evaluation is carried out on the values of R^2 (coefficient of determination) and Q^2 (predictive relevance). R^2 provides information about the proportion of variance that previous constructs in the model can explain, while Q^2 shows how well the model is able to predict the observed value in blindfolding techniques. This evaluation is essential to ensure that the structural model is not only statistically significant but also has sufficient predictive power and substantively explainable. These values are summarized in Table 5 as follows.

Table 5. R^2 and Q^2 Values of Endogenous Variables

Variable endogenous	R^2	Q^2
Research Support	0.45	0.38
Research Productivity	0.51	0.42

The R^2 value shows that the model can explain 45% of the variance in institutional support and 51% in research productivity. It belongs to the moderate-strong category according to the classification (Hernández-Torrano et al., 2022), which indicates the model has substantial explanatory power. The Q^2 value, obtained through the blindfolding procedure, was above 0.35 for both constructs, which confirms the model's predictive relevance very well (Hair et al., 2017; Hanun et al., 2025). Thus, the results of this structural model present an important empirical contribution in understanding the mechanism by which research-based learning can be converted into academic productivity, provided that strategic institutional policies support it. These findings are relevant in the context of strengthening TEI policies, which have tended to separate teaching and research administratively and operationally (Hanun et al., 2025; Umashankar & Dutta, 2007).

4.3. *Drama Textbook Content Analysis*

In the higher education ecosystem, textbooks act as a bridge between lecturers' research findings and students' learning experiences. Especially in art education, such as drama, textbooks should ideally not only contain a theoretical foundation, but also represent performative praxis, technological integration, and visual approaches that support creative exploration. This section evaluates the extent to which drama textbooks used in TEIs in Indonesia address this complexity. For this purpose, content analysis was carried out on eleven drama textbooks, focusing on four fundamental aspects: theoretical, performative practice, integration of learning technologies, and visualization or illustrative design. Each aspect is assessed by a binary score (1 if present, zero if absent), so that the maximum score of the content is 4. The assessment is carried out based on a direct study of the content of the book, not just the cover information or the library catalog. For this reason, Table 1 summarizes the basic information of each book, including the author, year and city of publication, the advantages of the content, and its limitations.

Table 1. Drama Textbooks Used in College

Author	Publisher	Year of Publication	City	Book Advantages	Lack of Books
Cahyaningrum Dewojati	Gadjah Mada University Press	2010	Yogyakarta	Explain basic academic and structural theories of drama.	Lacks in discussing practical aspects and staging skills.
Drs. Hasanuddin WS., M. Hum.	Angkasa	1966	Bandung	One of the classic reference books in Indonesian drama studies.	Too theoretical and less applicable to modern learning.
Ahmad Jusmar, Ari Pahala Hutabarat, Imas Obariah, Iswadi Pratama	Teater Satu	2010	Bandar Lampung	Explore modern drama staging and production techniques.	Has not accommodated technological developments in drama learning.
Cahyaningrum Dewojati	Javakarsa Media	2012	Jakarta	Integrating drama learning with cultural studies.	Lacks visual illustrations and has no interactive elements.
Bintang Angkasa Putra	Citra Aji Pratama	2012	Klaten, Yogyakarta	Contains practical exercises to improve drama skills.	Less attention to technology integration in learning.

Author	Publisher	Year of Publication	City	Book Advantages	Lack of Books
Harry D Fauzi	CV Armico	2007	Bandung	Provides a guide to writing drama scripts with a creative approach.	Does not discuss digital applications in drama script writing.
Jonathan Neelands	Dahara Prize	1993	Semarang	Explaining exploration and improvisation-based learning methods.	No practical guidance on the application of exploratory methods.
Adjib Hamzah	CV Rosda	1985	Bandung	Emphasizes the historical aspects and development of drama.	The historical context used is less relevant to the modern era.
Herman J Waluyo	Hanindita Graha Widia	2002	Yogyakarta	Discuss literary theory and criticism from a drama perspective.	The historical context used is less relevant to the modern era.
Asul Wiyanto	Grasindo	2002	Jakarta	Focus on performance practice and drama techniques.	Does not provide digital or multimedia-based materials.
Tato Nuryanto	RajaGrafindo Persada	2017	Depok	Explaining the latest approaches in contemporary drama learning.	Lack of case studies relevant to drama education today.

It is clear that most of the books place great emphasis on drama theory, but neglect the technological aspects, visualizations, and strategies of contemporary staging. Few touch exploration-based learning or digital practice. To provide a visualization of content distribution patterns, two main graphs are presented in Figures 4 and 5. For this, Figure 4 presents a *radar chart* that illustrates the average presence of each aspect of the content.

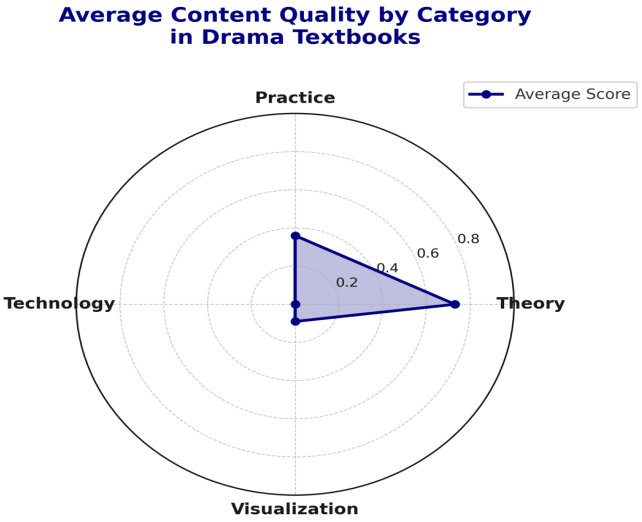


Figure 4. Radar chart showing the average presence of theoretical, practical, technological, and visual aspects in the evaluated drama textbooks.

Figure 4 shows that the dominance of the theoretical dimension, while technology and visualization hardly appear throughout the book. This shows an epistemological bias that still places textual knowledge at the center, ignoring the multisensory approach that is so important in the performing arts (Budde & Samur, 2019; Davis, 2017). To clarify the extent to which these dimensions of quality are accommodated as a whole in each textbook, Figure 5 presents the distribution of the number of quality aspects covered by each textbook. This visualization confirms that most books cover only one or two aspects of the four dimensions of evaluation (theory, practice, technology, and visualization). Thus, it is clear that most books have not adequately adopted a multidimensional pedagogical approach.

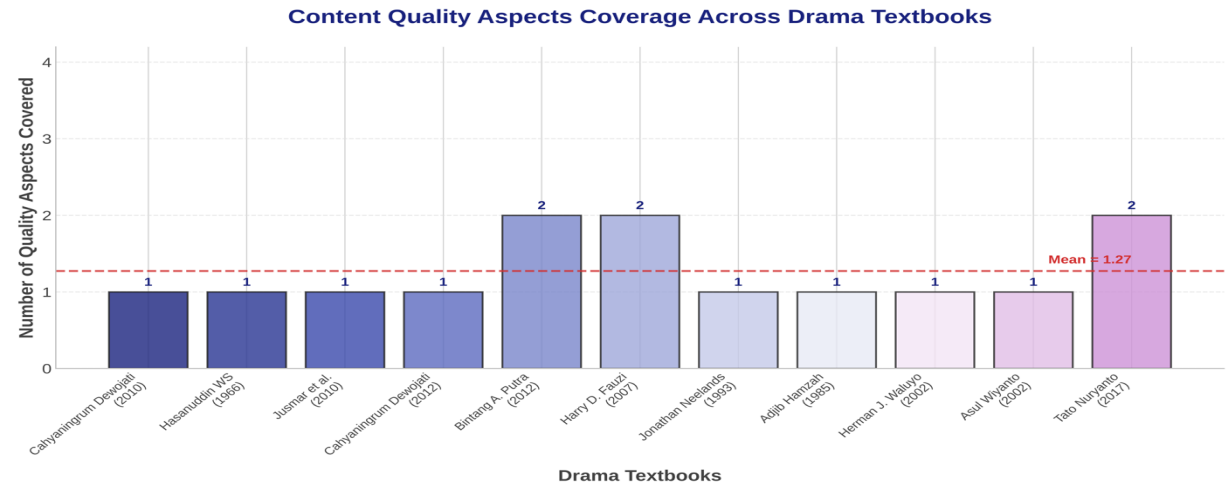


Figure 2. Distribution of content quality aspects across 11 drama textbooks. Each book was evaluated for the presence of Theory, Practice, Technology, and Visualization aspects (maximum score = 4). The red dashed line indicates the mean coverage across all textbooks.

Figure 5. Number of quality aspects identified in each evaluated drama textbook (maximum score = 4).

Figure 5 shows that of the eleven drama textbooks evaluated, most covered only one of the four aspects of quality assessed. Only three books have managed to cover two aspects, and none of them cover three or all four aspects in their entirety. The average coverage of aspects is only 1.27 (marked by a red dotted line), which means that the representation of the learning dimension in these books is still very limited. This condition indicates a low integration between various learning approaches—especially the integration of theory with practice, as well as the technological and visualization dimensions. In the context of arts education, the lack of a multidimensional pedagogical approach can hinder a holistic and contextual learning experience for students. In other words, there is still a significant gap between the potential of a competency-based curriculum and the actual form of teaching materials available.

To obtain a more complete picture of the quality of learning resources, an integration was carried out between the content dimension and the quality of physical presentation. This aggregation takes into account the score of the previously analyzed content as well as the physical quality of the book—such as paper type, print quality, visual design, and cover type. The result of this merge is visualized in Figure 6, which displays the total score in the form of a horizontal bar graph. Each bar is labeled with a separate content and physical score, and is graded in color based on the year of publication.

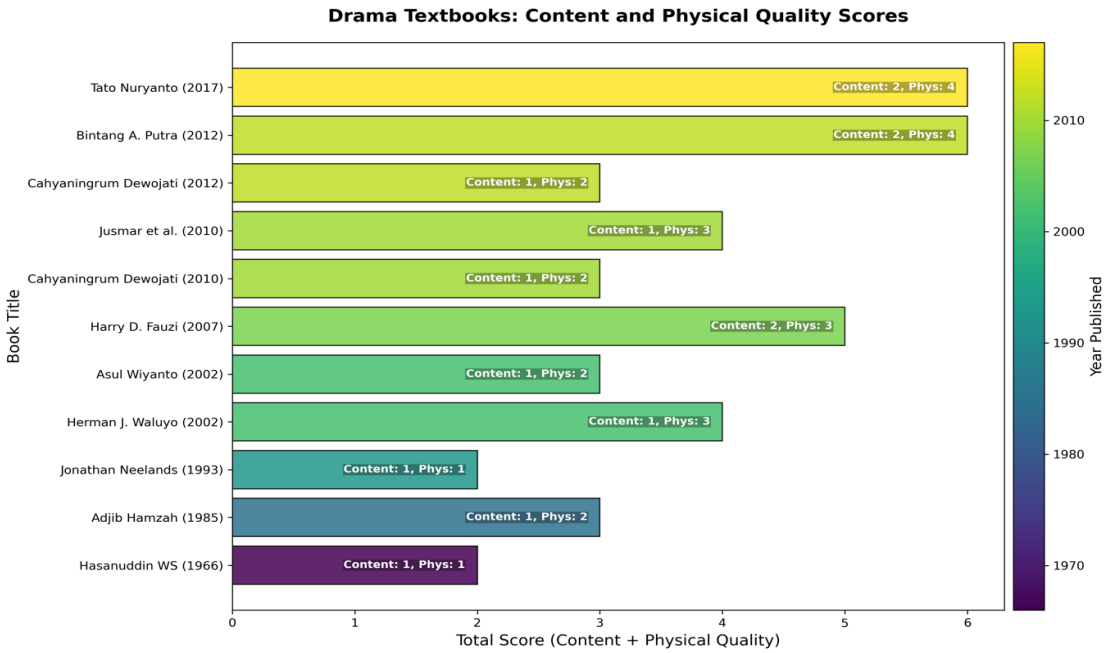


Figure 6. Total scores of drama textbooks based on content and physical/visual quality

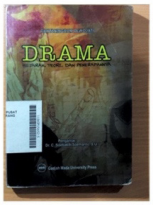
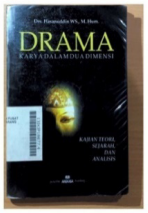
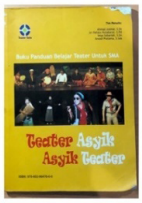
Figure 6 shows that only two books—Tato Nuryanto (2017) and Bintang A. Putra (2012)—show a relatively strong synergy between the quality of content and physical design. While other books, although showing potential in one dimension, remain weak in the other. This indicates that the convergence between research and teaching products is still sporadic and individual, not institutionally structured. This finding raises a fundamental question: why do textbooks from academic institutions have little reflection from contemporary research? The answer can be traced in part to the weak incentives and formal mechanisms to convert lecturers' research outputs into teaching mediums, as has been highlighted in a study by Bozeman & Boardman (2014). In fact, in Permendikbud No. 3 of 2020 concerning National Standards for Higher Education, it is stated that research-based textbooks are one of the concrete forms of the output of the Tridharma (Nizam, 2020). But in practice, priority is still given to journal publications rather than conversion to pedagogical forms.

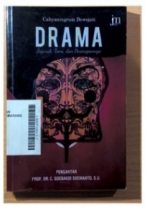
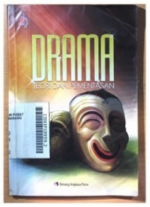
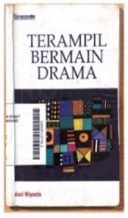
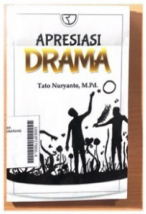
In other words, drama textbooks that are supposed to reflect the synergy between science, art, and pedagogy are trapped in the old production model that is textual, linear, and lacks media. The consequence is a disconnect between academic narratives and teaching practices, which has an impact on the lack of student performative literacy in the context of experiential learning. These findings provide an important basis for developing an integrative conceptual model that links lecturer research, institutional support, and textbook quality, which will be described in the next section.

4.4. *Physical and Visual Textbook Evaluation*

The evaluation of drama textbooks cannot be separated from the physical and visual conditions that accompany them. In performing arts-based learning, material aspects such as paper type, coloring, print quality, and cover design are not just aesthetic complements, but part of the learning experience that facilitates students' perception, imagination, and affective responses (Damaianti et al., 2017; Laurillard, 2013b). For this, Table 2 presents detailed information about 11 drama textbooks used in the Indonesian TEIs. Four main indicators are used in the assessment: (1) paper type and quality, (2) coloring and print, (3) cover type, and (4) actual condition of the book. The results showed that most books were printed with standard HVS (70–80 gsm), were black and white, and used softcover. Physical condition varies from "not good" to "excellent".

Table 2. Early condition of textbooks

Physical image	Book Title	Authors	Publisher	Year of Publication	City	Paper Type	Mold Quality	Cover Type	Book Condition
	Drama: Sejarah, Teori, dan Penerapannya	Cahyaningrum Dewojati	Gadjah Mada University Press	2010	Yogyakarta	HVS 70 gsm	Black & White	Softcover	Good enough
	Drama: Karya dalam Dua Dimensi	Drs. Hasanuddin WS., M. Hum.	Angkasa	1966	Bandung	Opaque Paper	Black & White	Softcover	Not Good
	Buku Panduan Belajar Teater untuk SMA	Ahmad Jusmar, Ari Pahala Hutabarat, Imas Obariah, Iswadi Pratama	Teater Satu	2010	Bandar Lampung	HVS 80 gsm	Black & White	Softcover	Good

Physical image	Book Title	Authors	Publisher	Year of Publication	City	Paper Type	Mold Quality	Cover Type	Book Condition
	Drama: Sejarah, Teori, dan Penerapannya	Cahyaningrum Dewojati	Javakarsa Media	2012	Jakarta	HVS 70 gsm	Black & White	Soft-cover	Good enough
	Drama: Teori dan Pementasan	Citra Aji Pratama	Bintang Angkasa Putra	2012	Klaten, Yogyakarta	Art Paper 90 gsm	Colored	Hard-cover	Excellent
	Bagaimana Menulis Drama: Sebuah Tuntunan Praktis Menulis Drama bagi Kepentingan Pentas	Harry D Fauzi	CV Armico	2007	Bandung	HVS 80 gsm	Black & White	Soft-cover	Good
	Pendidikan Drama: Mengajarkan Drama	Jonathan Neelands	Dahara Prize	1993	Semarang	Opaque Paper	Black & White	Soft-cover	Not Good
	Pengantar Bermain Drama	Adjib Hamzah	CV Rosda	1985	Bandung	HVS 70 gsm	Black & White	Soft-cover	Good enough
	Drama: Teori dan Pengajarannya	Herman J Waluyo	Hanindita Graha Widia	2002	Yogyakarta	HVS 80 gsm	Black & White	Soft-cover	Good
	Terampil Bermain Drama	Asul Wiyanto	Grasindo	2002	Jakarta	HVS 70 gsm	Black & White	Soft-cover	Good enough
	Apresiasi Drama	Tato Nuryanto	Raja Grafindo Persada	2017	Depok	HVS 70 gsm	Black & White	Soft-cover	Excellent

Interestingly, only one book—*Drama: Theory and Staging* by Bintang A. Putra (2012)—uses 90 gsm color art

paper and a hardcover. While other books still use traditional formats that are less responsive to contemporary learning needs. For this reason, Figure 8 illustrates the relationship between the year of publication and the visual-physical quality of the textbook. The graph shows that, although there have been books published in the last decade (e.g. 2012 and 2017), most still follow a black-and-white print pattern with a simple design. Even relatively new books are still printed in a minimalist format, without the integration of modern visual elements such as stage photos, stage diagrams, or interactive infographics.

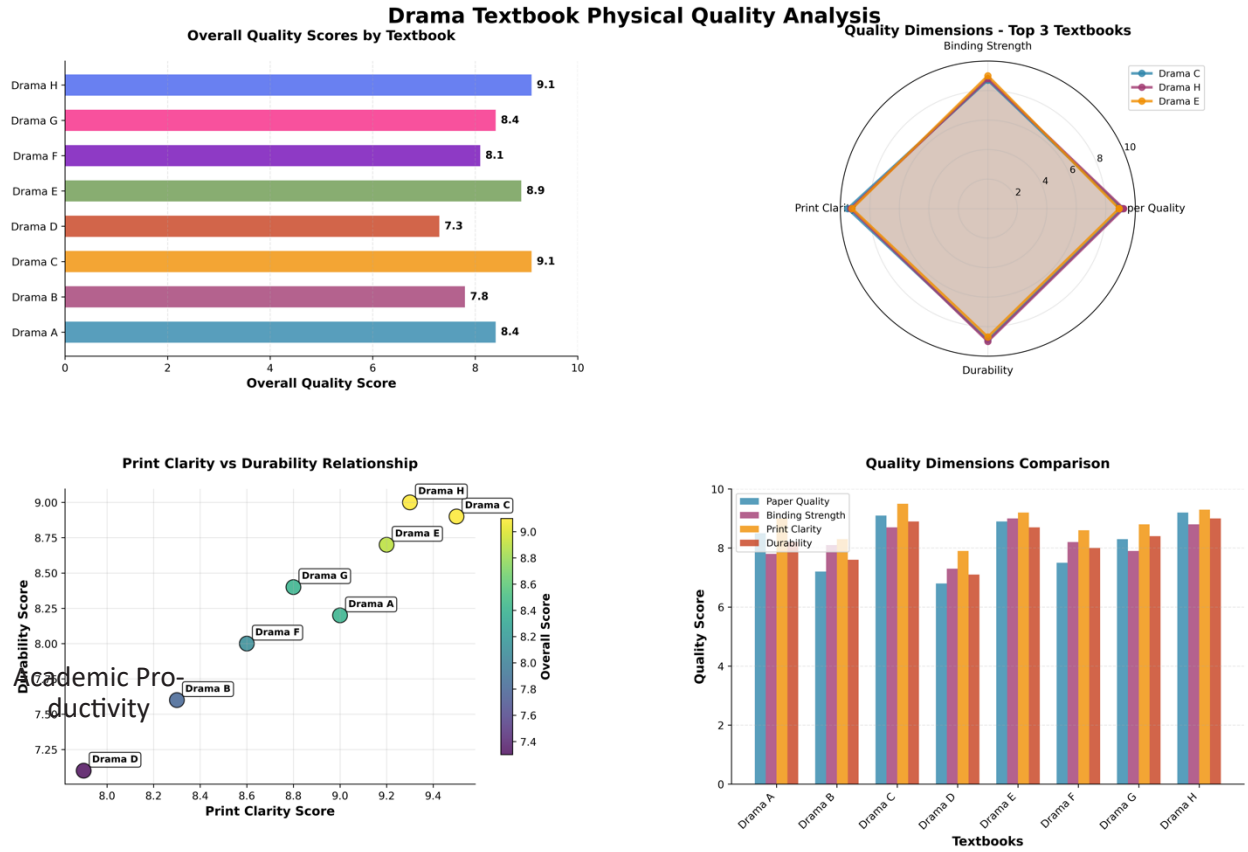


Figure 8. Multidimensional Analysis of Physical Quality in Drama Textbooks

This indicates that the physical and visual quality of a book is not directly correlated with the time of publication. There is no trend of improving visual quality with the passage of time, which should be in line with the development of printing technology and graphic design. On the contrary, this stagnation reflects the lack of design awareness and weak editorial policies in the publication of art textbooks in Indonesia. The fact that only one in eleven books use color printing technology and premium materials shows that visualization has not yet become a priority in the development of teaching media. In fact, in the context of art such as drama, the ability of books to convey ideas visually and spatially is crucial for pedagogical effectiveness (Damaianti et al., 2017; Mokoena & van Vuuren, 2023; Zakopoulos et al., 2023).

Furthermore, this strengthens the argument that there is still a gap between the spirit of curriculum innovation and actual learning outcomes in the form of textbooks. These books have not reflected the media-based and multimodal learning approach that has long been voiced in national policy documents such as Permendikbud No. 3 of 2020, which encourages integration between research, media, and teaching results in real form (Nizam, 2020). Thus, this section emphasizes the need for a strategic repositioning of drama textbook development—not only as an academic text, but as a performative medium that activates all students' senses (Lau et al., 2018; O'Grady et al., 2023). For this reason, synergy between academic writers, visual designers, pedagogical editors, and publishers needs to be built structurally as part of a sustainable arts higher education development ecosystem.

4.5. *Integrated Findings*

Separate findings in previous sections have shown a positive relationship between research-based learning, institutional support, and lecturer research productivity (Section 4.2). On the other hand, the content analysis

and physical evaluation of drama textbooks (Sections 4.3 and 4.4) show that the quality of teaching media, both in terms of substance and visuals, is still limited and not uniform. This section aims to integrate the two approaches and examine whether lecturers' research productivity really has an impact on high-quality textbook output. For this, the scatter plot in Figure 9 shows the relationship between lecturer research productivity (based on SEM data: the number and intensity of research activities reported in the structural model) and the quality of the textbook (combined content and physical scores). This approach allows for integrative testing between the conceptual dimensions and tangible artifacts of academic activities (Huang et al., 2019; Lamberti et al., 2025; Taufik & Pamungkas, 2025). This is important to answer the fundamental question: whether the research conducted by lecturers really transforms into a pedagogical instrument that has a direct impact on the quality of learning. By linking quantitative data and documentary evaluation, this analysis presents a systemic picture of the effectiveness of research-based learning models in producing applicable outputs.

The visualization results show a non-linear pattern. Some lecturers with high research productivity produce textbooks with medium or even low quality, while others show the opposite. This phenomenon indicates a gap between research activities and their conversion into meaningful pedagogical outputs. In other words, even though lecturers are active in publications and research, it is not necessarily realized in the form of textbooks that are strong in content and design (O'Grady et al., 2023; Straus et al., 2018; Umashankar & Dutta, 2007). This is consistent with the criticism raised by Hanun et al. (2025) that the incentive system in universities in Indonesia is still focused on the quantity of outputs, without encouraging conversion to applicable learning products. These findings highlight the need for structural interventions, such as teaching media development units or editorial teams, to bridge the gap between research and the production of teaching materials. Failure to convert research into teaching materials can lead to an epistemic disconnect between academic knowledge and teaching practices that students need. Therefore, lecturer development strategies need to include instructional design literacy training and media technology, so that research results are not only scientifically valid but also pedagogically relevant.

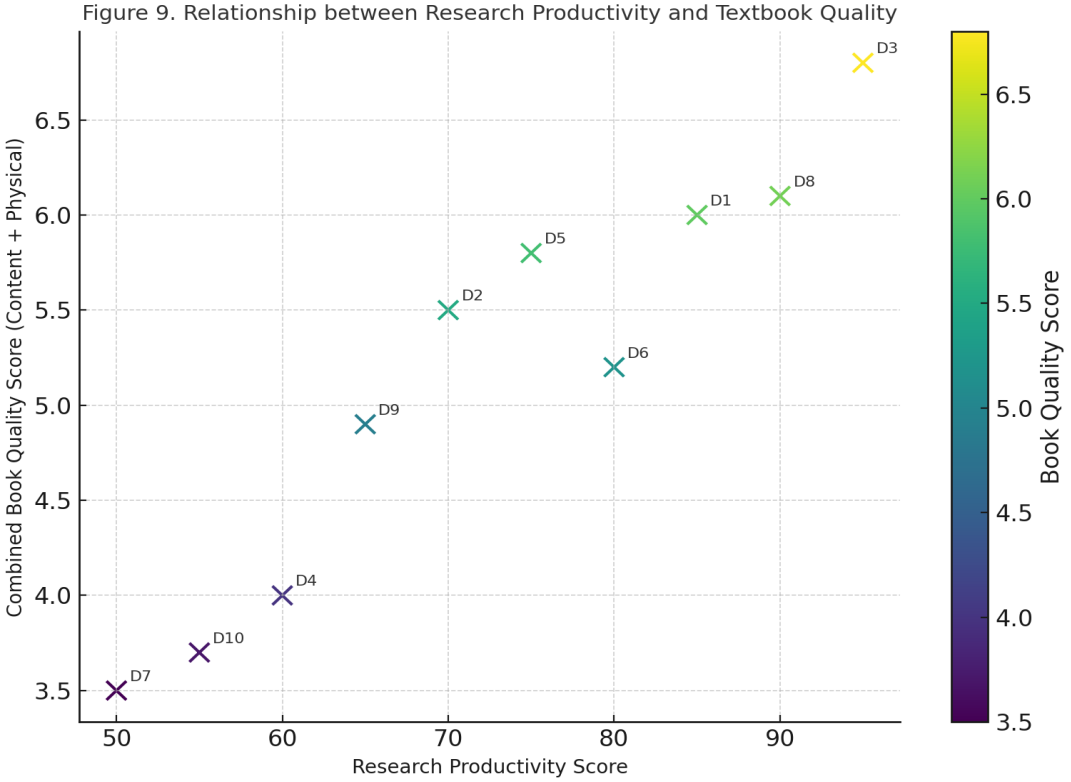


Figure 9. Relationship between Research Productivity and Textbook Quality

In an effort to unite quantitative and qualitative findings in a synthesis framework, a conceptual model is needed that is able to explain the dynamics of interaction between research-based learning, institutional support, and academic outputs in the form of textbooks. Previous analysis shows that the success of lecturers' research does not necessarily produce quality teaching materials without an institutional mechanism that bridges the

conversion of knowledge into pedagogical products. In this context, Figure 10 is compiled to formulate a conceptual map that represents the functional relationships between the key elements in the process. For this reason, this model is built on the assumption that academic productivity and the quality of teaching media are two outcomes that are interdependent but have different mediation paths. The academic path focuses on how research-based learning encourages lecturers to be active in publications, which then creates formal research outputs. Meanwhile, the pedagogical translation path emphasizes that the transformation of research into quality teaching media is impossible without systemic support, both in the form of policies, editorial units, and learning design infrastructure. This model serves as an analytical bridge to understand why, in the higher education system, much research is produced but little is realized into contextual teaching materials that are suitable for use in the classroom.

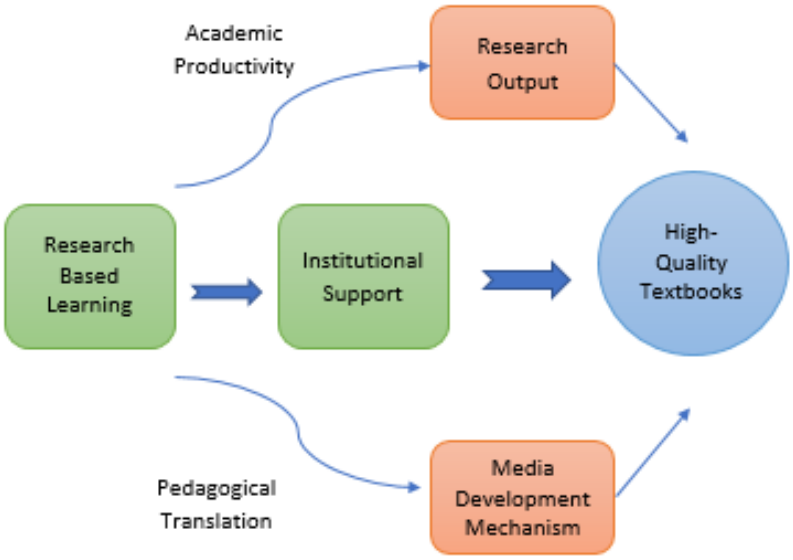


Figure 10. Conceptual Model of Research-Based Textbook Development

The model in Figure 10 represents an integrative framework that answers a paradox in the academic ecosystem: high research activity does not necessarily result in improved learning quality. There are two main trajectories highlighted. First, the academic pathway (research-based learning → institutional support → academic productivity → research output) shows how a research-rich learning environment can increase lecturer publications. Second, the pedagogical translation pathway (research-based learning → institutional support → media development mechanism → high-quality textbooks) emphasizes the importance of the existence of special units or policies that allow research to be transformed into a pedagogically appropriate learning media format. Critically, this model challenges traditional assumptions that consider scientific publications as the sole indicator of academic success (Moraes & Souza, 2024; Weatherton & Schussler, 2021; York et al., 2015). He showed that without a concrete translational mechanism, research productivity is at risk of being disconnected from the needs of learning in the classroom. The implications are not only institutional, but also strategic: this model provides an argumentative foundation for research policy design that is integrated with curriculum development. In the context of arts and humanities education, this approach is particularly relevant because it emphasizes performative, visual, and contextual aspects that are often overlooked in conventional academic output standards. Thus, this conceptual model not only maps the relationships between variables but also proposes a direction of systemic reform that is evidence-based and has a real impact on the quality of learning.

5. Discussion

The findings in this study present an in-depth understanding of the relationship between academic research, institutional support, and real outputs in the form of drama textbooks in the TEIs environment. Through the SEM model, it can be seen that research-based learning significantly increases institutional support (Abdurrahman et al., 2025; Taufik & Pamungkas, 2025), and this support has proven to be the main driver of lecturer research productivity. However, the direct path from research-based learning to productivity is insignificant, indicating

that systemic support is a crucial mediation that cannot be ignored in the academic research development model. Although research productivity has increased, other findings show that research outputs in the form of quality textbooks are still very limited. Only a small percentage of lecturers are able to translate research into teaching materials that are not only rich in content but also visually appealing. As shown in the integration of content and physical analysis of books (Chapters 4.3 and 4.4), the majority of books written still rely on textual formats, black-and-white prints, and minimal multimodal approaches. This shows a disconnect between research activities and pedagogical practice, a systemic gap that is also observed in a global context (Dogan, 2016; Hanun et al., 2025; Laurillard, 2013b, 2013a).

In this context, these results are in line with the criticism of Sofyan & Anggereini (2019) that lecturers' research tends to be trapped in the administrative targets of publications, while conversion into the form of teaching materials, learning media, or experiential modules is still very limited (Fadeev & Milyakina, 2021; Hernández-Torrano et al., 2022; Hwang et al., 2008). On the other hand, national standards (Permendikbud No. 3 of 2020) actually emphasize that academic research must contribute to improving learning, not just quantitative outputs. The theoretical consequence of these findings is the validation of the research productivity model based on institutional support, as well as enrichment through the addition of pedagogical translation pathways, as formulated in Figure 4. This model combines the epistemic dimension (research and publication) with the didactic dimension (transformation into teaching materials), offering a more holistic framework for institutions that want to bridge research and teaching in a structured way.

From a practical perspective, this study provides strategic recommendations for research development policies in TEIs. One of them is the need for a teaching media development support unit—a mini-ecosystem consisting of researchers, graphic designers, and pedagogical editors—to ensure that research results do not stop as articles, but become a meaningful learning resource. In addition, it is necessary to build a special incentive scheme for lecturers who successfully publish research-based textbooks, with performance recognition commensurate with journal publications. Finally, the main scientific contribution of this study is the two complementary conceptual models. First, a research productivity model that emphasizes the importance of institutional support as a mediator of research-based learning. Second, a model of transforming research into teaching materials that clarifies the need for structural interventions in the area of learning media. With this integrated approach, this research not only answers empirical problems but also offers a conceptual foundation for research and teaching policy reform in arts higher education in Indonesia.

6. Conclusion

This study shows that strengthening the research-based learning culture in the TEIs environment significantly encourages an increase in institutional support and lecturer research productivity. However, this increase in productivity has not automatically been converted into high-quality teaching materials. The integrative results of SEM analysis, book content evaluation, and visual physical assessment of textbooks show a structural imbalance between research activities and the development of learning media. The majority of the textbooks produced are still theoretical, black-and-white, and poor in multimodal exploration—far from the ideals of drama learning as a performative discipline. These findings confirm the importance of institutional interventions that not only support lecturers' research activities but also provide a mechanism for transforming research results into a form of teaching media that is suitable for use in the context of 21st-century learning. In this regard, the conceptual model developed in this study makes two main contributions: first, empirical validation of the productivity pathway of learning-based research and institutional support; Second, the formulation of an integrative model for transforming research into teaching materials that can be a reference for higher education policy design.

The practical implications of this study include the urgent need for the strengthening of editorial units and the development of teaching media in each TEI. Institutions need to create a collaborative environment between academic writers, illustrators, instructional designers, and educational practitioners to guarantee that research results are not only stored in journals but also present in real life in the classroom. More than that, the lecturer performance recognition system should include a transformational dimension, where the success of translating research into teaching materials is valued on par with academic publications. In terms of policy, ministries and higher education stakeholders need to revise research achievement indicators so that they do not

only focus on publications and patents, but also include research-based learning products that are pedagogically and contextually relevant. In the long run, this will encourage the creation of a higher education ecosystem that is not only scientifically productive but also has a real impact on the quality of learning.

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