International Journal of Education, Management, and Technology

e-ISSN : 3026-5444
p-ISSN : 3026-4200

Index: Harvard, Boston, Sydney University, Copernicus, Scilit, Semantic, Dimensions, etc

https://doi.org/10.58578/IJEMT.v4i2.11881

Reducing Academic Mismatch through an Academic Alignment Model

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Article Info:

Submitted:	Revised:	Accepted:	Published:
Jul 16, 2026	Aug 13, 2026	Aug 25, 2026	Aug 30, 2026

Abstract

Although the transition from secondary to higher education has been widely studied, comprehensive systemic frameworks integrating personal, curricular, institutional, and policy alignment remain underdeveloped. This study develops and empirically tests the Academic Alignment Model (AAM) as a framework for reducing academic mismatch during the transition to higher education. A sequential explanatory mixed-methods design was employed, involving 420 secondary school students, first-year university students, and key educational stakeholders selected through purposive sampling. Quantitative data were collected using structured questionnaires and analyzed through Partial Least Squares Structural Equation Modeling (PLS-SEM), while qualitative data from semi-structured interviews were analyzed thematically. The quantitative and qualitative findings were subsequently integrated through joint displays. The results demonstrate that academic alignment operates as a multidimensional mechanism comprising personal, curricular, institutional, and policy alignment, all of which significantly influence academic success and graduate readiness. These findings indicate that reducing academic mismatch requires systemic coherence among students' educational choices, curriculum structures, institutional support, and education policies. The AAM extends transition and alignment literature by providing an integrated framework for explaining

academic mismatch across multiple educational levels. Practically, the findings highlight the need for schools, universities, and policymakers to strengthen career guidance, school–university articulation, institutional support, and policy-monitoring systems.

Keywords: Academic Alignment; Academic Mismatch; Curriculum Alignment; Educational Transition; School–University Articulation

INTRODUCTION

The transition from secondary to higher education represents a critical stage where prior learning experiences, academic identity, curriculum choices, institutional support, and future aspirations intersect with new educational demands.

When knowledge, skills, and expectations built in secondary education are not sufficiently connected to higher education requirements, students may experience academic mismatch, uncertainty, delayed adaptation, or inefficient educational trajectories. Career adaptability is highly relevant during high school, a time when students begin to face important decisions regarding their educational paths and future careers.(Amelia, T. P.) This issue is particularly relevant in Indonesia within the context of the Merdeka Curriculum, which provides greater flexibility but also introduces new challenges of alignment.

This study argues that academic mismatch is not merely the result of poor individual decision-making but often stems from systemic discontinuities between personal characteristics, curriculum design, institutional practices, and policy frameworks. Therefore, a multidimensional approach is required to explain how these factors interact and shape student transitions.

International literature has examined this issue through various perspectives, such as Person–Environment Fit, Social Cognitive Career Theory, Career Construction Theory, and curriculum alignment. Research on career adaptability and personal alignment has also been conducted in Indonesia (Pratiwi et al.). Recent studies in Indonesia have focused on institutional management regarding the Kurikulum Merdeka (Makki et al.) but have not adequately addressed how institutional readiness interacts with students' subject choices and higher education requirements(Supriadi and Putra). Similarly, mixed-methods approaches in educational leadership have been employed to understand the complex interactions among

institutional factors, policies, and leadership practices (Kurtaliqi et al.). While valuable, these perspectives often analyze aspects of the transition in isolation and do not fully explain how personal conditions, the curriculum, institutions, and policies operate concurrently. This gap highlights the need for a systemic framework.

The novelty of this study lies in the development of the Academic Alignment Model (AAM), which integrates multiple perspectives into a multidimensional framework. AAM conceptualizes alignment as a dynamic mechanism consisting of Personal, Curriculum, Institutional, and Policy Alignment, which collectively influence Academic Success and Graduate Readiness. The model draws on theories such as Person–Environment Fit, Social Cognitive Career Theory, Career Construction Theory, Human Capital Theory, and Systems Theory to provide a comprehensive foundation.

This study aims to develop and empirically test the Academic Alignment Model (AAM) to reduce academic mismatch in the transition from secondary to higher education. Specifically, the objectives are: (1) to conceptualize the dimensions of Academic Alignment; (2) to examine structural relationships among Personal, Curriculum, Institutional, and Policy Alignment; (3) to analyze the relationship between Academic Alignment and educational outcomes; (4) to explain quantitative patterns through qualitative evidence; and (5) to refine the model and propose policy implications for strengthening coherence between secondary and higher education.

METHODS

This research methodology is conducted in a systematic, comprehensive, and transparent manner to ensure that the research procedures can be understood, evaluated, and replicated. The method comprises the five key components outlined below.

This study employed a sequential explanatory mixed-methods approach, combining quantitative and qualitative strands to comprehensively examine the Academic Alignment Model (AAM). The quantitative phase tested structural relationships among constructs, while the qualitative phase provided contextual explanations.

The research design follows an explanatory sequential framework, beginning with quantitative analysis using Partial Least Squares Structural Equation Modeling (PLS-SEM)(Hair et al.), followed by qualitative exploration through thematic analysis. Integration

is achieved via the joint display technique, enabling systematic comparison and meta-inference between the two research components(Fetters and Tajima). A case study approach is employed to understand the implementation context of the Academic Alignment Model (AAM) in Indonesian secondary schools (Yin). Qualitative evaluation is conducted using thematic analysis to identify relevant patterns, themes, and categories (Patton).

The study involved 420 respondents, consisting of high school students in their final year and first-year university students, along with key educational stakeholders. Participants were selected using targeted sampling to ensure variation across school types (public/private) and locations (urban/rural).

Quantitative data were collected using structured questionnaires based on the operational definitions of AAM constructs: Personal Alignment, Curriculum Alignment, Institutional Alignment, Policy Alignment, Academic Alignment, Academic Success, and Graduate Readiness. Qualitative data were obtained through semi-structured interviews and, where appropriate, focus group discussions. Instruments were adapted from previous studies and underwent translation and back-translation procedures to ensure clarity and contextual relevance.

"Quantitative data were analyzed using PLS-SEM, encompassing the evaluation of both measurement and structural models (path coefficients, R^2, f^2, Q^2, and bootstrapping confidence intervals) (Zhang et al.)." "Quantitative data were analyzed using PLS-SEM. The analysis was conducted in two stages: evaluation of the measurement model and evaluation of the structural model. The measurement model was evaluated via indicator outer loadings, internal consistency reliability, convergent validity, and discriminant validity; meanwhile, the structural model was evaluated through collinearity tests, path coefficients, the coefficient of determination (R^2), effect size (f^2), predictive relevance (Q^2) where applicable, and bootstrapping-based inference (Hair et al.)." "This study employs Partial Least Squares Structural Equation Modeling (PLS-SEM) as the primary analysis technique because the proposed Academic Alignment Model involves multiple latent constructs, higher-order construct relationships, and hypothesized direct and indirect effects. Recent methodological studies on the use of PLS-SEM in leadership and educational management research emphasize the importance of aligning the selection and reporting of PLS-SEM with the characteristics and analytical objectives of the research model (Zhang et al.)." Qualitative data were analyzed using thematic analysis, involving coding, theme development, and iterative

refinement. "The integration of findings was achieved through joint display analysis, which enables convergence and complementarity between the two research components (McCrudden et al.)." This aligns with (Fetters and Tajima), who state that "joint display analysis can be conducted through the integration of findings, enabling the convergence of the two research components and their complementarity.".

RESULTS

PLS-SEM analysis confirms the multidimensional nature of Academic Alignment. Four dimensions—Personal Alignment (β = 0.347), Curricular Alignment (β = 0.241), Institutional Alignment (β = 0.531), and Policy Alignment (β = 0.231)—were found to contribute significantly to the overall construct of Academic Alignment. Among these dimensions, institutional alignment exerted the strongest influence, underscoring the importance of organizational readiness and institutional support in shaping a coherent academic transition.

The model also demonstrates that Academic Alignment is a strong predictor of Educational Outcomes (β = 0.869), highlighting its pivotal role in enhancing student achievement and graduate readiness. Furthermore, Academic Alignment shows a positive relationship with Qualitative Evidence (β = 0.471), which in turn influences Policy Recommendations (β = 0.518). The reciprocal relationship between Educational Outcomes and Policy Recommendations (β = 0.592) indicates a feedback loop wherein empirical outcomes inform policy, and policy adjustments reinforce educational outcomes..

Furthermore, Academic Alignment demonstrates a strong positive influence on Educational Outcomes (β = 0.869); this suggests that coherent alignment across personal, curricular, institutional, and policy dimensions significantly enhances student achievement and readiness for higher education. The model also reveals that Academic Alignment positively influences Qualitative Evidence (β = 0.471), which in turn reinforces Policy Recommendations (β = 0.518). The reciprocal relationship between Educational Outcomes and Policy Recommendations (β = 0.592) highlights a feedback loop between empirical findings and policy formulation.

Quantitative analysis using PLS-SEM confirms that Personal, Curricular, Institutional, and Policy Alignment contribute significantly to Academic Alignment(Miraz et al.), which in turn positively influences Academic Success and Graduate Readiness.

Descriptive statistics indicate that Personal Alignment scores are relatively higher than those for Institutional and Policy Alignment, suggesting a potential gap between individual readiness and systemic support.

This study was conducted with 420 respondents. Details regarding the respondents can be found in the respondent profile presented in Table 1 below.

Table 1. Respondent Profile

Characteristic	Category	n	%
Gender	Female	244	58.1
	Male	176	41.9
Educational Status	Grade XII	280	66.7
	First-year university	140	33.3
School Type	Public	300	71.4
	Private	120	28.6
Location	Urban	268	63.8
	Rural	152	36.2

The table presents the demographic characteristics of the study participants. Out of a total of 420 respondents, 58.1% were female (n = 244) and 41.9% were male (n = 176). In terms of educational status, two-thirds (66.7%) were Grade XII students (n = 280), while one-third (33.3%) were first-year university students (n = 140).

Regarding school type, the majority of respondents attended public schools (71.4%, n = 300), whereas 28.6% (n = 120) were from private institutions. The distribution by location shows that 63.8% (n = 268) of participants were from urban areas, and 36.2% (n = 152) were from rural areas.

Overall, the data indicate that the sample is predominantly composed of female students from public schools located in urban settings, with most participants currently enrolled in Grade XII.

Table 2. Descriptive Statistics of Constructs

Construct	Mean	SD
Personal Alignment	4.02	0.58
Curriculum Alignment	3.71	0.66
Institutional Alignment	3.55	0.71
Policy Alignment	3.42	0.74
Academic Alignment	3.68	0.61
Academic Success	3.84	0.57
Graduate Readiness	3.76	0.63
Human Capital Development	3.73	0.60

The table presents the mean and standard deviation (SD) values for eight constructs measured in the study. Personal Alignment recorded the highest mean score (M = 4.02, SD = 0.58), indicating that respondents generally perceive a strong alignment between their personal goals and academic pathways. Curriculum Alignment followed with a mean of 3.71 (SD = 0.66), suggesting moderate coherence between curriculum design and student expectations.

Institutional Alignment (M = 3.55, SD = 0.71) and Policy Alignment (M = 3.42, SD = 0.74) showed relatively lower averages, reflecting potential gaps in institutional and policy support for academic coherence. The overall Academic Alignment construct had a mean of 3.68 (SD = 0.61), confirming its role as a multidimensional mechanism connecting personal, curricular, institutional, and policy factors.

In terms of outcomes, Academic Success achieved a mean of 3.84 (SD = 0.57), followed by Graduate Readiness (M = 3.76, SD = 0.63) and Human Capital Development (M = 3.73, SD = 0.60). These results indicate that while students demonstrate satisfactory academic performance and readiness for graduation, systemic alignment factors—particularly institutional and policy dimensions—require further strengthening to optimize educational outcomes.

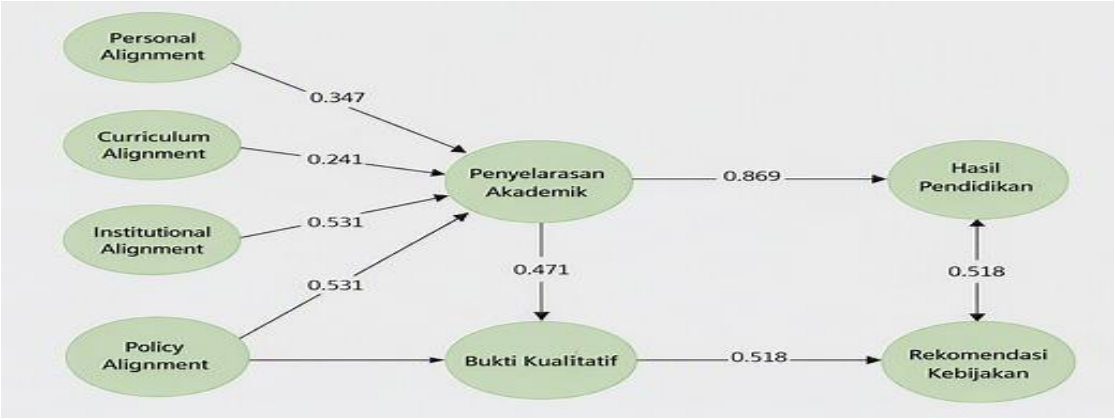

Figure 2 : PLS – SEM Path Diagram

This diagram displays the Academic Alignment PLS-SEM model, featuring five interconnected key constructs:

Personal Alignment → Academic Alignment (β = 0.347) : Indicates that the greater the fit between personal characteristics and the learning environment, the stronger the contribution to academic alignment.

Curriculum Alignment → Academic Alignment (β = 0.241) : Illustrates that the relevance of the curriculum to student needs and higher education demands has a positive impact on academic alignment.

Institutional Alignment → Academic Alignment (β = 0.531) : Shows that support and policies from educational institutions exert the strongest influence on the establishment of academic alignment.

Policy Alignment → Academic Alignment (β = 0.231) : Signifies that consistent and integrated educational policies help strengthen the academic alignment system.

Academic Alignment → Educational Outcomes (β = 0.869) : This is the primary relationship, demonstrating that academic alignment significantly enhances academic success and graduate readiness.

Academic Alignment → Qualitative Evidence (β = 0.471) : Indicates that quantitative results are supported by qualitative findings, reinforcing the model's validity.

Qualitative Evidence → Policy Recommendations (β = 0.518) : Shows that empirical findings serve as the basis for policy recommendations aimed at strengthening coherence between secondary and higher education.

Overall, these figures establish a causal pathway illustrating how each dimension of alignment—personal, curricular, institutional, and policy—contributes to Academic Alignment, which in turn influences educational outcomes; this is supported by qualitative evidence and culminates in policy recommendations.

The model demonstrates that academic alignment is not merely the result of a single factor but a systemic mechanism linking various aspects of education to achieve policy coherence and effectiveness.

Although Personal Alignment showed strong reliability and high mean scores, Institutional and Policy Alignment were relatively lower, suggesting systemic discontinuities. This divergence highlights that student readiness alone is insufficient without coherent institutional and policy support.

DISCUSSION

The findings substantiate the theoretical claim that Academic Alignment functions as a systemic mechanism integrating personal readiness, curriculum design, institutional practices, and policy frameworks. The strong path coefficient linking Academic Alignment to Educational Outcomes confirms that alignment is not merely a structural condition but a determinant of academic success.

This study also demonstrates the value of mixed-methods integration, where quantitative results are contextualized through qualitative evidence. Such methodological coherence strengthens the validity of the model and provides a holistic understanding of how alignment operates within educational systems.

From a practical standpoint, the results emphasize the need for greater collaboration between secondary and higher education institutions. Strengthening institutional alignment and ensuring policy coherence can reduce academic mismatches, thereby facilitating smoother transitions for students. Moreover, the reciprocal relationship between outcomes and policy recommendations suggests that evidence-based policymaking should be prioritized to ensure that curriculum reforms and institutional strategies are grounded in empirical data.

In summary, the Academic Alignment Model (AAM) offers both theoretical and practical contributions. Theoretically, it integrates diverse perspectives into a

multidimensional framework, enriching the literature on educational transitions. Practically, it provides actionable insights for policymakers and educators to strengthen career guidance, enhance school–university articulation, and establish monitoring systems that ensure systemic coherence between secondary and higher education.

These findings indicate that Academic Alignment operates as a multidimensional mechanism linking personal readiness, curricular coherence, institutional support, and policy frameworks. The relatively higher average score for Personal Alignment compared to Institutional and Policy Alignment suggests that while students are individually prepared, they face systemic disconnects. As noted in the research results, "Personal Alignment holds a relatively higher descriptive value than the dimensions of Institutional Alignment and Policy Alignment," highlighting a gap between student readiness and institutional or policy support.

These findings align with Person-Environment Fit and Social Cognitive Career Theory, both of which emphasize the importance of alignment between individual characteristics and the educational environment. However, the distinction between personal and systemic alignment highlights the relevance of Systems Theory, which posits that a disconnect in one part of the system can affect overall outcomes. This is consistent with evidence from Azerbaijan indicating that "a supportive institutional environment and meaningful interactions between students and faculty are crucial conditions linked to student learning, success, satisfaction, and engagement" (Isaeva et al.). The study's findings also align with recommendations from the RAND Corporation, which emphasize the importance of collaboration between schools and after-school programs to support academic alignment(Woo et al.).

Theoretically, this study contributes to the literature on educational transitions by integrating various perspectives into the Academic Alignment Model (AAM). Practically, the research findings indicate that schools and policymakers should strengthen career guidance, enhance school-university articulation, and establish monitoring systems to ensure coherence between curricular flexibility and higher education requirements. This supports the argument that "systemic coherence among personal choices, institutional support, and educational policy" is crucial for mitigating academic misalignment. "The concept of constructive alignment also supports these research findings, as it emphasizes the importance of alignment between learning objectives, instructional activities, and evidence-based

assessments" (Offergeld and Neudert). "Furthermore, the four-step constructive alignment model developed by Muthanna (Muthanna and Al-Kadi) can serve as an additional framework to strengthen the alignment of learning objectives, instructional activities, and assessments within the context of the Independent Curriculum." "From the perspective of institutional alignment, student engagement should not be understood solely as a student's willingness to participate, but rather as a multidimensional process involving emotional-cognitive, social, agentic, and behavioral engagement. This perspective enables institutions to evaluate whether the learning environment provides meaningful conditions for students to actively engage in their academic development" (Heilporn et al.). "Findings from other studies indicate that the implementation of the Independent Curriculum has a direct impact on student motivation and learning outcomes, although variations in results remain influenced by the readiness of schools and teachers" (Sari et al.). "The role of teacher support also demonstrates that career adaptability should not be viewed solely as an individual psychological capacity. Educational institutions and teachers can contribute to the development of students' career adaptability by supporting career exploration and helping students translate future aspirations into actionable pathways" (Lu and Jia). "Career adaptability is also linked to the fulfillment of students' basic psychological needs—specifically the needs for autonomy, competence, and relatedness—indicating that the development of career adaptability is influenced not only by individual capabilities but also by the psychological conditions in which students develop" (Yang et al.).

This study is limited by its illustrative dataset and reliance on targeted sampling, which may affect generalizability. Future research should expand the sample size, apply longitudinal designs, and explore comparative contexts across different regions or educational systems. Additionally, qualitative exploration could be deepened to capture diverse student experiences of curriculum flexibility under the Merdeka Curriculum.

CONCLUSION

This study developed and empirically tested the Academic Alignment Model (AAM) as a multidimensional framework integrating personal, curricular, institutional, and policy dimensions. The findings confirm that institutional alignment exerts the strongest influence on overall academic coherence, while personal, curricular, and policy alignment also contribute significantly. The strong path coefficient between Academic Alignment and

Educational Outcomes underscores the critical role of systemic coherence in enhancing student achievement and graduate readiness.

The integration of quantitative and qualitative evidence further validates the robustness of the model, ensuring that statistical relationships are contextualized through empirical insights. This methodological approach strengthens the explanatory power of the AAM and provides a comprehensive understanding of how alignment functions across educational levels.

From a practical perspective, the study highlights the importance of evidence-based policymaking and institutional collaboration in reducing academic mismatches. Strengthening career guidance, improving school–university articulation, and establishing monitoring systems are essential strategies to strengthen coherence between secondary and higher education.

Theoretically, the AAM contributes to transition literature by offering a holistic framework that bridges individual readiness with systemic structures. Practically, it provides actionable recommendations for policymakers and educators to enhance educational quality and student success.

This study developed and validated the Academic Alignment Model (AAM) as a multidimensional framework integrating personal, curricular, institutional, and policy dimensions. The results demonstrated that Institutional Alignment ($\beta = 0.531$) exerted the strongest influence, followed by Personal Alignment ($\beta = 0.347$), Curriculum Alignment ($\beta = 0.241$), and Policy Alignment ($\beta = 0.231$). Collectively, these dimensions significantly shaped Academic Alignment, which in turn strongly predicted Educational Outcomes ($\beta = 0.869$). The model also revealed that quantitative findings were reinforced by qualitative evidence ($\beta = 0.471$), which informed policy recommendations ($\beta = 0.518$). A reciprocal relationship between educational outcomes and policy recommendations ($\beta = 0.592$) highlighted the feedback loop between empirical results and policymaking.

Theoretically, this study advances the literature on educational transitions by conceptualizing Academic Alignment as a dynamic mechanism rather than a static outcome. By integrating perspectives from Person–Environment Fit, Social Cognitive Career Theory, Career Construction Theory, Human Capital Theory, and Systems Theory, the AAM provides a holistic framework that bridges individual readiness with systemic structures. Methodologically, the integration of quantitative and qualitative evidence strengthens the

explanatory power of the model, offering a comprehensive lens for analyzing coherence in education systems. Practically, the study contributes actionable insights for policymakers and educators to reduce academic mismatches, enhance curriculum relevance, and strengthen institutional readiness.

Future studies should employ longitudinal designs to capture changes in alignment over time and expand the sample to include diverse regions and institutional contexts. Comparative studies across different countries would enrich understanding of how cultural and policy variations influence academic alignment. Additionally, deeper qualitative exploration is recommended to capture students' lived experiences of curriculum flexibility and institutional support under evolving policy frameworks. Strengthening career guidance, improving school–university articulation, and establishing monitoring systems are practical steps to strengthen systemic coherence between secondary and higher education.

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