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Competence Recognition, Workplace Culture, and Selective Absorption in a Triple Helix Fast-Track Pathway: A Qualitative Case Study from Indonesia

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ABSTRACT

This study examines how the fast-track pathway in the two-year associate degree program (D2) linking a vocational high school, a polytechnic, and an industry partner operates as a cross-institutional arrangement for educational progression, competence recognition, workplace learning, and employment transition in Indonesia. A qualitative single-case study used semi-structured interviews, contextual non-participant observations, institutional and policy documents, and program artifacts, with data analyzed thematically. The findings reveal interconnected but institutionally distinct processes. Partnership governance operated through differentiated institutional roles, with the polytechnic acting as an intermediary between the vocational high school and the industry partner through recurring coordination and curriculum synchronization. The skill passport made prior competence visible across institutional boundaries, while Recognition of Prior Learning (RPL) provided conditional, standards-based verification for academic progression. Extended industry immersion embedded workplace learning within the curriculum and supported professional socialization through authentic industrial participation. Selective absorption operated as an employer-side gatekeeping process during the transition to direct employment. Of 25 pathway participants documented in the program report, five were recruited by the industry partner, representing 20% direct absorption rather than the cohort's overall employment rate. Recruitment remained subject to selection requirements, workforce demand, and available positions. The case shows that competence recognition and workplace preparation can be institutionally coordinated while employment conversion remains governed by a distinct employer-side decision process. These findings highlight coordinated governance, credible competence recognition, sustained workplace learning, and transparent employment transition in vocational pathway design.

KEYWORDS

Vocational fast-track pathway; competence evidence and recognition; workplace culture; selective employment absorption; triple helix.

INTRODUCTION

Vocational education plays an important role in preparing skilled workers whose competencies align with the changing industrial requirements (Billett, 2011). Its effectiveness depends not only on the development of technical skills, but also on learners' readiness to work within professional standards and to advance into further education and employment. Although vocational pathways can improve work readiness and labour-market outcomes, their effects vary across institutional and program contexts (Kemper et al., 2025; Nikisi et al., 2025; Tobback et al., 2025). In Indonesia, persistent challenges such as unequal facilities, limited industry support, and a weak alignment between labor and market needs continue to affect vocational education (Suharno et al., 2020). These conditions indicate that vocational education outcomes depend not only on what students learn within schools, but also on how learning is connected across educational and workplace settings.

A central issue in such transitions is the recognition of competence across institutions. Competence demonstrated at the vocational school level may not automatically be accepted as equivalent by a tertiary vocational institution or interpreted as work-ready by industry. Progression therefore depends on whether prior learning can be documented, evaluated, and recognized in forms that are credible across institutional boundaries. Previous studies show that Recognition of Prior Learning (RPL) is shaped by organizational arrangements, evidence of prior achievement, and institutional procedures for determining equivalence (Baumeler et al., 2023; Pokorny, 2024; Salzmann et al., 2025). Pathway design also influences whether vocational qualifications can support progression into higher education (Schmees et al., 2025). Competence recognition is therefore not merely an administrative process, but an institutional mechanism through which previous learning can support further progression.

These issues are especially important in vocational fast-track pathways, where educational transitions are intentionally compressed. Such pathways seek to connect vocational preparation, competence recognition, further vocational study, workplace learning, and employment within a shorter and more coordinated sequence. Their effectiveness therefore depends on more than curricular acceleration. Cross-institutional governance is required to coordinate responsibilities across educational institutions and industry, while workplace participation must provide meaningful opportunities for technical learning and professional socialization. Research on vocational partnerships emphasizes the importance of coordination, role clarity, and sustained institutional commitment (Evans et al., 2024; Mende et al., 2025). Likewise, studies of internships and work-integrated learning indicate that workplace experience supports employability when it is connected to broader competence development and appropriate institutional arrangements (Mabungela & Mtiki, 2024; Philip et al., 2025; Pianda et al., 2025). Based on the Triple Helix perspective, such pathways can be understood as arrangements shaped by interaction among education, industry, and an enabling policy environment rather than by the actions of a single institution (Etzkowitz & Leydesdorff, 2002).

Despite these developments, existing research has generally examined partnership governance, competence recognition, workplace learning, and employment outcomes as relatively separate issues (Baumeler et al., 2023; Mende et al., 2025; Philip et al., 2025). Less attention has been given to how these processes interact within a single fast-track pathway linking secondary vocational education, tertiary vocational education, and industry. Research on RPL has clarified the importance of institutional recognition but provides less explanation of how competence evidence moves across organizational boundaries within an integrated vocational pathway (Pokorny, 2024; Salzmann et al., 2025). Likewise, studies of workplace learning demonstrate its contribution to employability but do not fully explain why successful educational progression and substantial industry participation may still result in selective direct recruitment (Guerrero Puerta & Lorente García, 2025; Kemper et al., 2025; Pianda et al., 2025). This gap is important because a pathway may function effectively in coordinating institutions, recognizing prior competence, and providing workplace learning while employment conversion remains dependent on employer requirements, workforce demand, and available positions.

This study addresses this gap by examining the fast-track pathway of a two-year associate degree program (D2) as a cross-institutional vocational arrangement linking a vocational high school, a polytechnic, and an industry partner in Indonesia. The pathway connects vocational preparation, Recognition of Prior Learning, D2 academic progression, extended industry immersion, and employment transition. This study aims to explain how competence evidence and recognition, workplace culture formation, and selective absorption shape the implementation and outcomes of the Triple Helix vocational fast-track pathway in Indonesia. Partnership governance is treated as an enabling institutional context that supports interaction among education, industry, and the policy environment rather than as a separate focal dimension. The study therefore examines how the pathway enables progression and workplace preparation, and why participation does not necessarily lead to direct employment. Accordingly, the study addresses the following overarching research question:

Main RQ: How do the dynamics of competence evidence and recognition, workplace culture, and selective absorption shape the implementation and outcomes of the Triple Helix vocational fast-track pathway in Indonesia?

Sub-Research Questions

Competence Evidence and Recognition

RQ1a. How do vocational institutions and the industry partner collaborate to document, assess, validate, and recognize competence evidence within the fast-track pathway?

RQ1b. What institutional conditions and verification challenges shape the recognition of competence across academic and industry standards?

Integration into Workplace Culture

RQ2a. How is students' adaptation to workplace culture supported through industry immersion, supervision, authentic workplace learning, and exposure to professional practices?

RQ2b. How do the complementary roles of educational institutions, industry, and the enabling policy environment shape workplace learning within the fast-track pathway?

Selective Absorption by Industry

RQ3a. What employer requirements, workforce demand, and available positions shape the selective absorption of fast-track graduates?

RQ3b. How does the industry partner perceive the long-term value of the fast-track pathway in preparing potential human resources despite selective recruitment?

LITERATURE REVIEW

Partnership Governance and Vocational Pathways

Vocational pathways are increasingly understood as institutional arrangements that connect education, training, and employment across multiple actors and settings (Amirgalina et al., 2026; Movkebayeva et al., 2026). Their effectiveness therefore depends not only on curriculum design, but also on how responsibilities, resources, and expectations are coordinated across organizational boundaries (Machaba et al., 2024; Nkambule & Ngubane, 2023). Collaborative arrangements require more than formal agreements, as their effectiveness depends on governance structures, role clarity, and sustained coordination among participating actors (Evans et al., 2024; Mende et al., 2025; Moussa et al., 2026). In the Indonesian context, sustainable school-industry partnerships have likewise been associated with continuing collaboration and shared institutional commitments (Syauqi et al., 2022).

Partnership governance is particularly important in accelerated vocational pathways because educational providers and industry partners perform different but interdependent functions. Educational institutions are responsible for curriculum, competence development, and academic progression, while industry contributes occupational standards, workplace learning opportunities, and access to employment settings. Governance therefore concerns the allocation of institutional roles, coordination of decisions, resource commitments, and maintenance of collaboration across the pathway. In this sense, vocational fast-track pathways can be understood as governance arrangements that sustain progression across educational and workplace settings.

Competence Recognition, Skill Passport, and RPL

Prior competence does not automatically retain the same meaning or value when learners move across institutional settings. Competence developed in vocational schools may require further documentation and verification before it is accepted by tertiary vocational institutions or interpreted as relevant by industry. Recognition therefore depends on institutional arrangements that make prior learning visible, interpretable, and acceptable across settings (Baumeler et al., 2023; Pokorny, 2024; Salzmann et al., 2025).

This issue is particularly important in accelerated pathways, where learners are expected to progress without unnecessarily repeating previously demonstrated competencies. Research shows that progression from vocational qualifications to higher education depends on pathway

design and institutional arrangements rather than on prior qualification alone (Groome & Cunningham, 2024; Raciti et al., 2024; Schmees et al., 2025). Instruments such as portfolios, competency records, micro-credentials, and skill passports can support this process by documenting prior learning in forms that receiving institutions can examine and recognize (Zdunek et al., 2024). Competence recognition therefore operates as a cross-institutional mechanism through which documented prior learning can support Recognition of Prior Learning (RPL) and accelerated academic progression. Within a Fast-Track pathway, this process requires alignment between policy provisions, educational assessment arrangements, and industry-relevant competence standards.

Work-Based Learning, Workplace Culture, and Employment Transition

Work-based learning extends vocational development beyond classroom instruction through participation in authentic tasks, supervision, feedback, and engagement with organizational routines. Workplace learning is shaped by the conditions under which learners participate in industrial practice, while readiness for such learning depends on preparation for workplace expectations (Häußermann & Seufert, 2026; Mudaly, 2025; Olofsson, 2025). Employer-focused research similarly indicates that professional capability develops through interaction with organizational priorities and workplace conditions rather than through technical exposure alone (Jackson et al., 2022).

Industry immersion can also support workplace culture formation by exposing learners to professional routines, discipline, quality expectations, safety practices, and organizational norms. Studies of internships and work-integrated learning indicate that employability is strengthened when workplace participation is connected to broader competence development and appropriate institutional support (Philip et al., 2025; Pianda et al., 2025). However, workplace learning does not necessarily lead directly to employment. Vocational education may improve labor-market outcomes while producing different results across institutional and labor-market contexts (Kemper et al., 2025). Additionally, studies of dual vocational education indicate that employability gains may coexist with implementation constraints and employer-side filtering (Guerrero Puerta & Lorente García, 2025). Employment transition should therefore be understood as a conditional process in which workplace learning can strengthen readiness without guaranteeing recruitment.

Theoretical Lens: Triple Helix Perspective

The Triple Helix perspective provides the theoretical lens for understanding the institutional configuration of the Fast-Track D2 pathway. It emphasizes interaction among education, industry, and government in creating institutional arrangements that connect knowledge development, economic activity, and policy support (Etzkowitz & Leydesdorff, 2002). In vocational education, this perspective is relevant because educational progression and workforce preparation depend on coordinated relationships among educational providers, employers, and the policy environment. Previous studies likewise show that vocational and education-industry collaboration is shaped by institutional coordination, industry participation,

trust, and alignment with workforce needs (Gemeda et al., 2025; Jonbekova et al., 2020; Xue & Keat, 2025).

In this study, the three helices are interpreted according to institutional function rather than as three individual organizations. The education helix is represented by Vocational High School SMK PGRI 1 Mejayan and Madiun State Polytechnic (hereinafter abbreviated as PNM), which perform complementary roles in vocational preparation, competence recognition, and academic progression. Meanwhile, PT INKA (Indonesia's state-owned train and rolling stock manufacturing company) represents the industry helix through its contribution to occupational standards, workplace learning, supervision, and employment-related decisions. The government helix operates primarily through the policy and regulatory environment that enabled the Fast-Track D2 initiative. The school and polytechnic are therefore treated as complementary actors within the same education domain rather than as separate helices.

The Triple Helix becomes operational in the vocational pathway when system-level policy and institutional commitments are translated into coordinated educational and workplace practices. Government provides regulatory and programmatic conditions, whereas educational institutions translate these into curriculum, competence documentation, recognition, and progression arrangements. Meanwhile, the industry contributes occupational standards, workplace learning, supervision, and employment-related decisions. In this sense, the diffusion of the Triple Helix into the Fast-Track D2 pathway is reflected in the translation of policy and partnership arrangements into concrete practices connecting learning, recognition, workplace participation, and employment transition.

Conceptual Framework of the Fast-Track D2 Pathway

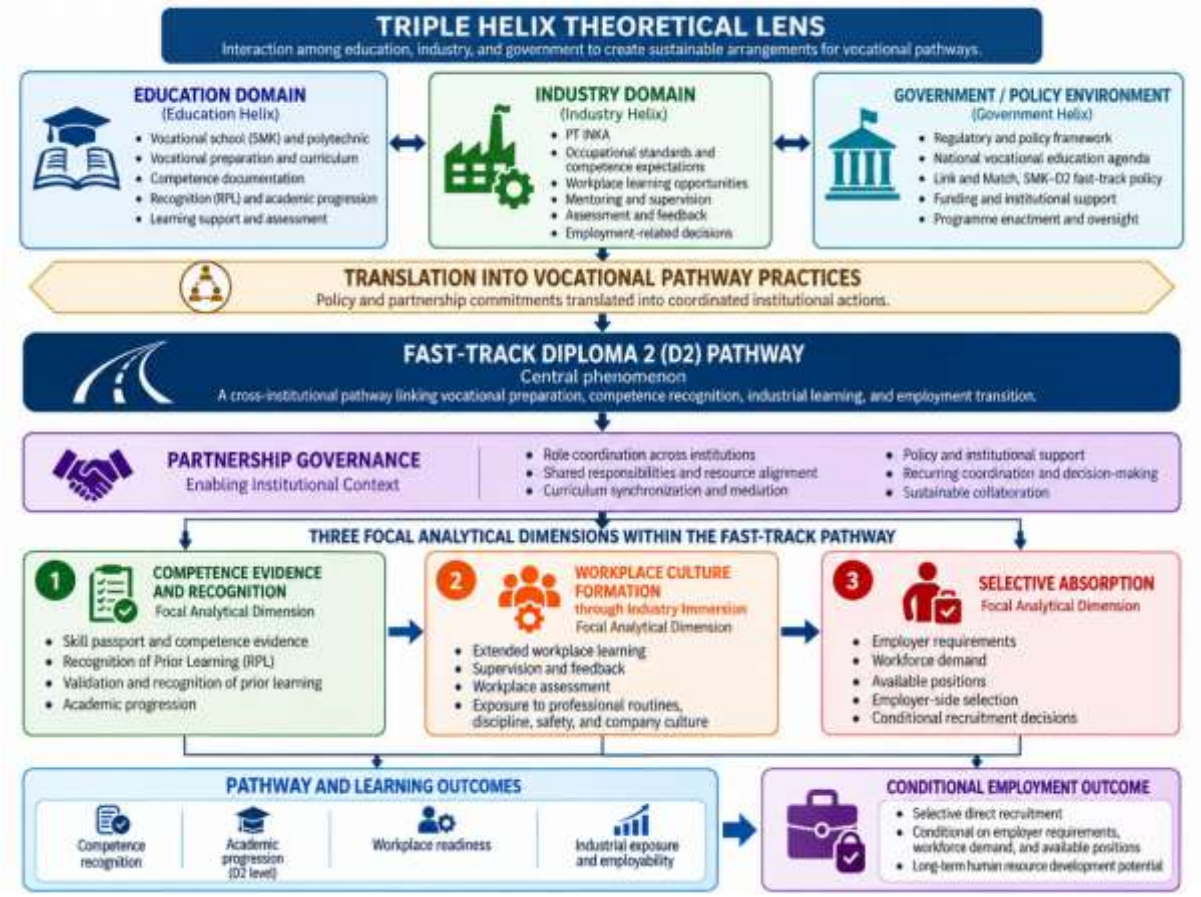
Building on the Triple Helix lens, this study conceptualizes the Fast-Track D2 pathway as a cross-institutional process connecting vocational preparation, competence recognition, academic progression, workplace learning, and employment transition. The Fast-Track pathway is the central phenomenon of the study, while competence evidence and recognition, workplace culture formation through industry immersion, and selective absorption are treated as three focal analytical dimensions rather than independent variables. Their relationships are understood as functional and processual rather than statistically causal.

As an enabling institutional context, partnership governance provides the conditions for coordinating roles, responsibilities, resources, and decision-making across the pathway. Within this arrangement, competence evidence and recognition allow prior vocational learning documented through the skill passport to be evaluated and recognized through RPL for academic progression. Industry immersion subsequently extends progression into authentic workplace participation through sustained exposure to industrial tasks, supervision, assessment, and organizational routines. Government policy provides the regulatory environment that enables these cross-institutional arrangements, while industry contributes occupational standards and workplace expectations.

These preceding processes do not imply automatic employment conversion. Selective absorption represents the final employment transition in which direct recruitment remains subject to employer requirements, workforce demand, and available positions. The framework therefore distinguishes competence recognition, academic progression, and workplace readiness from the selective outcome of employment absorption. In this sense, the pathway may be institutionally coherent and educationally enabling while still producing selective employment outcomes. Figure 1 summarizes these functional relationships.

Figure 1.

Triple Helix-informed conceptual framework of the Fast-Track D2 pathway



METHODOLOGY

Research Design, Case Context and Boundaries

This study employed a qualitative single-case study with an explanatory orientation to examine how the Fast-Track Diploma 2 (D2) pathway operated within its real-world institutional context. A case study design was appropriate because the research focused on how institutional processes, decisions, and interactions shaped competence recognition, workplace culture formation, and employment transition across interconnected vocational education and industry settings (Yin, 2018). The Fast-Track D2 pathway constituted the bounded case and primary unit of analysis, rather than the individual participating organizations. The vocational high school, polytechnic, and industry partner were examined as interconnected institutional settings within the same case.

The case was selected purposively because of its strategic and analytical relevance to Indonesia's vocational education transformation agenda. The pathway was established within the regulatory framework of Decree No. 56/D/HK/2020 (Direktorat Jenderal Pendidikan Vokasi, 2020) and aligned with the national Link and Match 8+i agenda (Sakarinto, 2021). Within this policy context, PT INKA launched the Manufacture Institute initiative in 2020, with the Madiun State Polytechnic and Vocational High School SMK PGRI 1 Mejayan identified as pilot partners for the SMK-D2 Fast-Track program (PT Industri Kereta Api (Persero), 2020). This configuration provided an information-rich case for examining how policy, educational institutions, and industry were connected within an operational vocational pathway.

The case was bounded institutionally, programmatically, and temporally. Institutionally, it included Vocational High School SMK PGRI 1 Mejayan, Madiun State Polytechnic, and PT INKA. Programmatically, the study covered vocational preparation, skill passport documentation, Recognition of Prior Learning (RPL), D2 progression, industry immersion, and employment transition. Temporally, it covered the establishment of the collaboration in 2020, implementation beginning in 2021, and outcomes available during data collection in 2024.

Participants and Sampling

Participants were selected purposively based on their direct involvement in the design, coordination, implementation, supervision, assessment, or employment-related stages of the Fast-Track pathway (Patton, 2015). Potential participants were identified through coordination with the three partner organizations and selected according to the relevance of their formal roles and first-hand knowledge of the program. The study included 20 participants: seven from the vocational high school, eight from the polytechnic, and five from the industry partner. Selection emphasized first-hand program knowledge and functional coverage rather than statistical representativeness. Participants represented institutional coordination, curriculum, skill passport and RPL implementation, workplace learning, supervision, and employment-related functions. Table 1 (see appendix) summarizes their roles and relevance to the case.

Data Sources and Collection

The study used four sources of evidence: semi-structured interviews, contextual non-participant observations, institutional and policy documents, and program artifacts. Observations were conducted during site visits to the three partner institutions. At the school and polytechnic, observations focused on learning activities, facilities, and implementation conditions, while observations at PT INKA focused on internship activities, workplace practices, facilities, and the industrial learning environment. The observations were contextual rather than structured through a standardized observation checklist, and field notes were maintained to document relevant activities and settings. The RPL process was not directly observed and was therefore examined through interviews, institutional documents, and program artifacts.

The documentary corpus included Decree No. 56/D/HK/2020, Link and Match 8+i materials, PT INKA's Manufacture Institute and Fast-Track documentation, the Fast Track Program Proposal (2020), MoU-1 (2020), MoU-2 (2020), School Development Document (2021),

and Fast Track Program Report (2023). Program artifacts included an anonymized skill passport sample, referenced portfolios, and available internship monitoring and assessment instruments. Data were collected from March to November 2024. Interviews were conducted face-to-face in Indonesian, typically lasted 45 to 60 minutes, and were audio-recorded with consent and transcribed verbatim. Selected quotations were translated into English with attention to conceptual and contextual equivalence. Table 2 (see appendix) summarizes the evidence sources and their analytical contribution.

Interview Protocol and Procedure

A semi-structured interview guide was developed from the research questions and analytical framework and used as a common topic guide across participants (Kallio et al., 2016). It covered participant involvement, partnership governance, competence documentation and recognition, industry immersion, workplace supervision and assessment, and employment transition. The guide was applied flexibly according to participants' institutional roles, while follow-up probes were used to clarify processes, decisions, relationships, and examples. Table 3 (see appendix) presents the interview domains and indicative prompts.

After transcription, each transcript was returned to the respective participant for member checking. Participants could identify factual inaccuracies or statements requiring clarification, and requested corrections were incorporated before coding. Member checking was used to verify the accuracy of the interview record rather than to validate subsequent thematic interpretations.

Researcher Role and Reflexivity

Data collection was conducted by the lead researcher together with members of the research team. The researchers had no prior professional, administrative, or institutional relationship with the participating institutions or the fast-track program and entered the case as external researchers. Field notes and reflexive analytic memos were maintained throughout data collection and analysis to distinguish participant accounts, contextual observations, documentary evidence, and researcher interpretations. These records supported awareness of prior assumptions and helped maintain interpretations grounded in the empirical evidence.

Data Analysis

Data were analyzed manually using thematic analysis following Braun and Clarke's (2006, 2021) six-phase procedure. First, the researchers familiarized themselves with verified interview transcripts, observational field notes, documents, and program artifacts. Second, initial codes were generated using deductive and inductive procedures (Fereday & Muir-Cochrane, 2006), with the three focal analytical dimensions used as sensitizing rather than fixed categories, while partnership governance was examined as an enabling contextual theme. Third, related codes were grouped into candidate themes. Fourth, candidate themes were reviewed against coded extracts and the complete dataset. Fifth, themes were defined and named according to their analytical boundaries and relevance to the fast-track pathway. Within each theme, coded evidence was further examined for recurring case-specific patterns in how processes operated

across the interconnected institutional settings of the bounded case. Sixth, the analytical account was developed by integrating themes with participant quotations and corroborating observational, documentary, and artifact evidence.

All coding was conducted manually by the lead researcher. Evidence was compared across participant groups and data sources to identify convergence, differences, and qualifications. A codebook and analytic memos documented coding decisions, category development, and theme refinement (Miles et al., 2014). Because coding was performed by one researcher, intercoder reliability was not applied. Instead, analytical transparency was supported through an audit trail linking original evidence, codes, categories, themes, and interpretations. Table 4 (see appendix) provides illustrative examples of this analytical pathway.

Trustworthiness

Trustworthiness was addressed through credibility, transferability, dependability, and confirmability (Lincoln & Guba, 1985). Credibility was supported through transcript member checking and triangulation across participant groups, interviews, observations, documents, and program artifacts (Denzin, 1978). Transferability was supported through thick description of the policy context, institutional configuration, participant roles, pathway processes, and case boundaries. Dependability was strengthened through an audit trail comprising the interview guide, verified transcripts, field notes, coding records, codebook, analytic memos, and documented analytical decisions. Confirmability was supported by maintaining a traceable chain between original evidence and final interpretations, together with reflexive records used to distinguish researcher assumptions from evidence-based interpretations.

Ethical Considerations

Participation was voluntary, and participants were informed about the study purpose, interview and recording procedures, intended use of the data, and their right to decline questions or withdraw. Informed consent was obtained before interviews and audio recording. Participant identities were protected through coded identifiers such as VHS-1, PNM-1, and INKA-1, and potentially identifying personal details were removed where necessary. Research records were stored securely and were accessible only to the research team.

FINDINGS

The findings were developed through thematic analysis of interviews with participants from the vocational high school, polytechnic, and industry partner, triangulated with contextual non-participant observations, institutional and policy documents, and program artifacts. The analysis identified three focal themes shaping the implementation and outcomes of the Fast-Track D2 pathway: competence evidence and recognition, workplace culture formation through industry immersion, and selective absorption. These themes operated within a broader partnership-governance context that coordinated institutional roles across the vocational high school, polytechnic, and industry partner. Representative participant quotations and corroborating evidence are presented to show how these themes were identified and interpreted.

Case Configuration and Pathway Sequence

The Fast-Track D2 pathway developed as a sequential cross-institutional arrangement rather than as a program implemented by a single organization. The pathway connected vocational preparation at SMK PGRI 1 Mejayan, competence recognition and academic progression through Madiun State Polytechnic (PNM), and extended workplace learning at PT INKA. These institutional stages were linked within the policy framework established in 2020, with implementation beginning in 2021 and outcomes examined through data collected in 2024.

Within the pathway, competence developed at the vocational high school was documented through the skill passport and subsequently reviewed through Recognition of Prior Learning (RPL) at PNM. Academic progression was then extended into workplace participation at PT INKA. Industry immersion constituted a substantial component of the D2 program: approximately 36 of the 72 credits were allocated to industry-based learning, with students spending around ten months in the industrial setting. The pathway therefore moved participants through a sequence of competence documentation, institutional recognition, academic progression, workplace immersion, and eventual employment consideration.

Importantly, the final stage of this sequence did not operate as an automatic conversion from educational participation to employment. Recruitment by PT INKA remained subject to employer requirements, workforce demand, formal selection, and available positions. This sequence provides the case context for interpreting the three focal themes presented below: competence evidence and recognition, workplace culture formation through industry immersion, and selective absorption, together with partnership governance as the enabling institutional context.

Partnership Governance as an Enabling Institutional Context

Partnership governance emerged as an institutional context that allowed the Fast-Track D2 pathway to operate across institutional boundaries. Governance was enacted through differentiated institutional responsibilities and continuing coordination among the vocational high school, polytechnic, and industry partner. Their roles were connected through academic planning, supervision, production-related activities, and curriculum alignment with industrial requirements. Two interrelated patterns characterized governance in this case: differentiated institutional roles with an intermediary function performed by PNM, and iterative coordination through curriculum synchronization and formal partnership arrangements.

Differentiated Institutional Roles and the Intermediary Function of PNM

The first pattern concerned differentiated but interdependent institutional roles. The vocational high school was primarily involved in school-based competence development and production-related implementation, while PNM coordinated academic arrangements, supervision, and communication across institutions. PT INKA contributed industrial requirements, technical input, and occupational expectations. Within this configuration, PNM occupied a distinctive intermediary position between school-based implementation and industrial requirements. Representative evidence illustrating this process is presented in Table 5 (see appendix).

The evidence shows that governance was organized through complementary rather than interchangeable institutional roles. The vocational high school supported school-based competence development and production-related activities, PNM coordinated academic arrangements and supervision while also performing a bridging function, and PT INKA contributed industrial requirements, technical input, and curriculum validation. In this configuration, PNM's role extended beyond academic administration. It connected school-based implementation with industrial expectations through supervision, curriculum coordination, and continuing communication with PT INKA. MoU-1 and MoU-2 further formalized institutional responsibilities and implementation commitments, indicating that the partnership combined functional differentiation with formal institutional arrangements.

Iterative Coordination and Curriculum Synchronization

The second pattern concerned iterative rather than one-time coordination. Governance was also sustained through repeated curriculum discussions, facility allocation, and consultation with industry experts. Participant accounts indicated that PNM and PT INKA met repeatedly to discuss curriculum content, laboratory responsibilities, facilities, occupational requirements, and future competence needs. Curriculum synchronization therefore involved continuing interaction rather than a single process of formal approval.

The Fast Track Program Proposal (2020) supported these operational arrangements, while Decree No. 56/D/HK/2020 and the Link and Match 8+i agenda provided the broader enabling policy context. Taken together, the evidence indicates that partnership governance in this case operated through the interaction of differentiated institutional roles, an intermediary function performed by PNM, formal institutional arrangements, and recurring cross-institutional coordination. Governance therefore provided the institutional conditions through which the subsequent processes of competence recognition, workplace learning, and employment transition could operate across organizational boundaries.

Competence Evidence and Recognition through the Skill Passport and RPL

Competence evidence and recognition emerged as a focal theme that connected prior vocational learning with progression into the Fast-Track D2 pathway. Rather than treating previous learning as automatically transferable, the participating institutions relied on documented competence, institutional verification, and alignment with academic and occupational standards. The skill passport provided evidence of competencies developed at the vocational high school, while the polytechnic used Recognition of Prior Learning (RPL) to determine whether those competencies could be formally recognized. Two interrelated patterns characterized this process in the case: the use of the skill passport as cross-institutional competence evidence, and conditional recognition through standards-based RPL.

Skill Passport as Cross-Institutional Competence Evidence

The first pattern concerned the transformation of prior vocational learning into documented evidence that could be considered across institutional boundaries. The skill passport recorded competencies achieved during vocational education and provided a basis for progression that

was not determined solely by where the learning had occurred. From the vocational high school's perspective, the important issue was whether competence had been demonstrated and documented sufficiently for consideration by PNM. Representative evidence illustrating this process is presented in Table 6 (see appendix).

The evidence indicates that the skill passport functioned as more than an administrative record of completed learning. Within this case, it provided an evidence base through which competence developed at the vocational high school could become visible to another educational institution. The basis for progression therefore shifted from institutional origin alone toward documented competence attainment. Program artifacts, competence portfolios, and the School Development Document (2021) further supported the use of documented competence within the pathway.

Conditional Recognition through Standards-Based RPL

The second pattern concerned the conditional nature of recognition. Possession of a skill passport did not result in automatic recognition by PNM. Instead, the polytechnic assessed prior competence against its own academic standards and could require additional testing or interviews when documentary evidence was insufficient. PNM also examined the curriculum, skill passport, and competence implementation at the vocational high school and conducted direct verification before recognition was granted.

In this case, competence recognition therefore followed an evidence-to-recognition sequence consisting of documented competence, institutional review, additional verification when required, and formal recognition. This sequence shows that RPL operated as a verification mechanism rather than as automatic credit transfer. The credibility and adequacy of the evidence were central to determining whether prior learning could be formally recognized for progression into the D2 program.

PT INKA's involvement in curriculum synchronization added an occupational dimension to this process. Industry representatives provided input regarding the alignment of the curriculum with existing job requirements, relevant competencies, and anticipated future needs. Competence recognition was therefore connected not only to academic standards at PNM but also to the occupational context in which the pathway operated.

Taken together, the two patterns show that competence recognition in the Fast-Track D2 pathway operated as a cross-institutional verification process. The skill passport made prior competence visible and portable across institutional boundaries, while RPL provided the mechanism through which PNM reviewed, verified, and formally recognized that evidence. This process supported academic progression into the D2 pathway, but recognition itself did not establish an entitlement to subsequent employment. Employment transition remained a distinct stage governed by employer requirements, workforce demand, and available positions.

Workplace Culture Formation through Industry Immersion

Workplace culture formation emerged through industry immersion, which connected academic progression with authentic workplace learning in the Fast-Track D2 pathway. The evidence

indicates that workplace exposure was not limited to a short internship, but was embedded in the curriculum through extended learning in industry, industry-based teaching, production-related activities, and direct engagement with workplace practices. Two interrelated patterns characterized this process in the case: extended industry immersion as part of the curricular architecture and professional socialization through authentic industrial participation.

Extended Industry Immersion as Curricular Architecture

The first pattern concerned the extent to which industry-based learning was structurally embedded in the D2 curriculum. Approximately half of the 72-credit program was allocated to learning in industry, with students spending around ten months in the industrial setting. Industry immersion therefore constituted a substantial component of the pathway rather than a supplementary short-term placement. Teaching responsibilities were also distributed between PNM and PT INKA, with several courses delivered by industry personnel and learning activities allocated across campus laboratories and industrial settings. Representative evidence is presented in Table 7 (see appendix).

The evidence shows that industry immersion was integrated into the pathway through both time allocation and shared delivery arrangements. The allocation of approximately 36 credits to industry-based learning positioned PT INKA as an integral learning environment rather than merely an internship destination. Industry personnel contributed directly to teaching, while curriculum implementation was distributed between PNM facilities and industrial settings. Within this case, workplace exposure was therefore structurally embedded in academic progression rather than added after formal learning had been completed.

Professional Socialization through Authentic Industrial Participation

The second pattern concerned the socialization of learners into professional work practices through sustained exposure to industrial settings. Participant accounts indicated that industry-based learning involved more than technical skill development. Students were exposed to professional work patterns, production-related responsibilities, soft skills, quality requirements, and company culture. Production activities such as the AC duct cover project further connected educational activities with tasks designed according to industrial requirements.

In this case, workplace culture formation occurred through participation in authentic work settings rather than through classroom explanation of workplace expectations alone. The teaching-industry arrangement provided opportunities to observe how professional workers operated, while production-linked activities exposed learners to industrial tasks and responsibilities. PT INKA also emphasized the importance of preparing potential human resources who were familiar not only with technical competence but also with soft skills and company culture.

Contextual observations of learning activities, internship settings, facilities, and workplace practices corroborated these participant accounts. Internship monitoring and assessment artifacts further indicated that industry participation included supervision and assessment rather than workplace attendance alone. These sources collectively show that

industry immersion functioned as both a curricular process and a professional socialization process within the case.

Taken together, the two patterns show that workplace culture formation in the Fast-Track D2 pathway was supported by the combination of extended curricular immersion and authentic industrial participation. The pathway connected academic learning with sustained workplace exposure, shared teaching arrangements, production-related activities, supervision, and engagement with professional routines. This process strengthened workplace readiness through technical development and professional socialization, but it did not determine subsequent recruitment, which remained a separate employer-side decision within the pathway.

Selective Absorption as Employer-Side Gatekeeping

Selective absorption emerged as the theme governing employment transition from pathway participation to direct recruitment by PT INKA. In this case, substantial educational progression and workplace preparation did not automatically convert into employment with the industry partner. Recruitment remained subject to employer requirements, formal selection, workforce demand, and the availability of suitable positions. Two interrelated patterns characterized selective absorption in the case: employment readiness without recruitment entitlement, and workforce-demand constraints alongside the industry's longer-term interest in developing sector-relevant human resources.

Employment Readiness without Recruitment Entitlement

The first pattern concerned the distinction between being prepared for employment and being recruited by the partner company. PT INKA described pathway participants as potential work-ready candidates, but explicitly stated that completion of the pathway did not bypass recruitment and selection requirements. The formal partnership therefore provided access to employment opportunities without establishing an automatic right to employment. Representative evidence is presented in Table 8.

The evidence shows that work readiness and direct recruitment represented two distinct stages within the case. Competence recognition and industry immersion could strengthen employment eligibility and readiness, but the final employment decision remained under employer authority. MoU-2 further corroborated this distinction by indicating that employment opportunities remained conditional on the requirements and needs of the industry partner.

The Fast Track Program Report (2023) documented that five of 25 participants who progressed through the D2 pathway were subsequently recruited by PT INKA. This represents approximately 20% direct absorption into PT INKA. This figure should not be interpreted as the overall employment rate of the cohort because the available evidence does not establish the subsequent employment status of the remaining participants. The case therefore demonstrates selective direct absorption into the partner company rather than a general measure of graduate employment.

Workforce Demand and Long-Term Human Resource Value

The second pattern concerned the role of organizational demand in determining how many pathway participants could be directly absorbed. PT INKA indicated that the number and types of available positions were limited and that workforce requirements remained an important determinant of recruitment. Within this case, the final transition to employment was therefore shaped not only by candidate preparation but also by whether organizational demand and suitable vacancies existed at the time of recruitment.

This constraint did not mean that the industry partner viewed the pathway as lacking value. PT INKA described the collaboration as relevant to the longer-term preparation of human resources for the railway sector. The pathway enabled the company to contribute to the development of candidates with relevant competence, substantial workplace exposure, and familiarity with industrial expectations, while retaining its normal recruitment and selection requirements.

The case therefore reveals a dual function of industry participation. In the short term, PT INKA acted as the final gatekeeper for direct recruitment, with absorption constrained by employer requirements, workforce demand, and available positions. In the longer term, the company viewed participation in the pathway as a means of contributing to the preparation of a pool of sector-relevant potential human resources. The value of the pathway for industry therefore did not depend on guaranteeing employment for every participant.

Taken together, the two patterns show that selective absorption operated as an employer-side gatekeeping process at the final stage of the Fast-Track D2 pathway. Educational progression, competence recognition, and industry immersion increased eligibility and workplace readiness, but they did not independently create vacancies or remove employer selection. Direct recruitment remained conditional on organizational demand and available positions, while the broader partnership retained value as a mechanism for developing potential human resources for the sector.

DISCUSSION

This case shows that the Fast-Track D2 pathway operated as a coordinated cross-institutional progression system rather than as a direct route from vocational schooling to employment. Its functioning depended on a sequence of interconnected processes: competence evidence and recognition supported academic progression, workplace culture formation through industry immersion strengthened workplace learning and readiness, and selective absorption governed the transition to direct recruitment. Partnership governance coordinated differentiated institutional roles across the participating organizations. These processes were connected but not equivalent. In particular, recognized competence and substantial workplace exposure strengthened employment eligibility and readiness, while actual recruitment remained conditional on employer requirements, workforce demand, and available positions. The case

therefore demonstrates that educational progression and employment conversion were institutionally linked but governed by different decision processes.

Partnership governance provided the institutional conditions through which the pathway could operate across organizational boundaries. The findings show that collaboration depended on differentiated but interdependent responsibilities, supported by formal partnership arrangements, continuing coordination, curriculum synchronization, and allocation of learning responsibilities and facilities. In this case, the important governance mechanism was not simply the participation of multiple organizations, but the way their differentiated roles were connected through an intermediary function performed by PNM and through iterative coordination with PT INKA. This interpretation is consistent with Moussa et al. (2026), who argue that collaborative arrangements require more than procedural commitment, and with Evans et al. (2024), who emphasize the importance of governance structures and coordination in multi-actor settings. Similarly, Mende et al. (2025) show that vocational pathways are shaped by arrangements connecting actors, institutional responsibilities, and governing rules. The present case extends these perspectives by showing that PNM operated as a bridging institution linking school-based implementation, academic requirements, and industrial expectations, while repeated curriculum synchronization and resource allocation sustained coordination across institutional boundaries. Governance in the pathway therefore functioned as an ongoing coordination process rather than as a one-time formal partnership arrangement.

In the Triple Helix perspective, this case represents interaction among the education, industry, and government domains rather than three organizations acting as three separate helices. The vocational high school and PNM served as complementary actors within the education domain, PT INKA represented the industry domain, while Decree No. 56/D/HK/2020 and the Link and Match 8+i agenda provided an enabling governmental and policy environment. This configuration is consistent with the Triple Helix view that institutional development emerges through interaction among education, industry, and government rather than through isolated action by individual organizations (Etzkowitz & Leydesdorff, 2002). The case therefore demonstrates a functional rather than organization-based configuration of the Triple Helix. The empirical configuration should therefore not be interpreted as the vocational high school, polytechnic, and company individually representing the three canonical helices. Instead, the education helix was distributed across two complementary educational institutions, the industry helix was represented by PT INKA, and the government helix operated primarily through the enabling policy and regulatory environment. This functional configuration helps explain how system-level policy and institutional commitments were translated into concrete pathway practices involving competence recognition, workplace learning, and employment transition.

The first focal theme, competence evidence and recognition, links prior vocational learning with progression into the D2 associate degree stage. The skill passport allows previously acquired competence to become visible and portable, while RPL provides an institutional

process through which PNM can review, verify, and formally recognize that evidence. In this case, the skill passport functioned as a cross-institutional evidence mechanism, while RPL operated as a conditional verification process rather than as automatic credit transfer. Baumeler et al. (2023) argue that recognition depends on organizational arrangements through which prior achievements are formally valued, while Pokorny (2024) emphasizes the importance of translating prior learning into evidence that can be recognized across educational settings. Salzmann et al. (2025) likewise show that recognition is shaped by institutional facilitators and barriers rather than by administrative procedures alone. The present case adds specificity to this literature by showing an evidence-to-recognition sequence in which documented competence was reviewed against PNM standards and could be supplemented through testing, interviews, or direct institutional verification when necessary. Curriculum synchronization with PT INKA helps maintain occupational relevance. The skill passport, therefore, serves not merely as a record of completed activities, but as part of an evidence infrastructure through which prior competence becomes visible, reviewable, and institutionally recognizable across educational settings.

Industry immersion extends this recognized competence into sustained participation in authentic workplace settings. The substantial allocation of learning to PT INKA, together with industry-based teaching, supervision, production-related activities, and exposure to industrial quality requirements, positions the workplace as an integral learning environment rather than a supplementary internship site. In this case, workplace culture formation was supported by two interconnected mechanisms: extended curricular immersion and professional socialization through authentic industrial participation. This finding is consistent with Häußermann and Seufert (2026), who emphasize participation, feedback, and authentic tasks in workplace learning, and with Olofsson (2025), who highlights the importance of preparing learners for workplace expectations. Jackson et al. (2022) further suggest that capability development is shaped by organizational priorities and workplace conditions rather than by technical exposure alone. The present case adds specificity to these perspectives by showing that workplace learning was embedded in the curriculum through substantial industry-based study and was reinforced through direct exposure to professional work patterns, production-related responsibilities, soft skills, quality standards, discipline, and company culture. Workplace culture formation therefore emerged not from exposure alone, but from sustained participation in an industrial learning environment that combined academic progression with professional socialization.

Together, the three focal themes are interconnected within the pathway rather than operating as independent effects, while partnership governance provides the enabling institutional context. Partnership governance creates the institutional conditions for cross-organizational coordination, whereas competence recognition makes documented prior learning institutionally recognizable for academic progression. Industry immersion then extends this progression into situated workplace participation and professional socialization. Within this

case, these processes formed a sequential pathway from documented competence, to formal recognition, to workplace participation, and finally to employer-side employment selection. Their interaction supports educational progression and workplace readiness across institutional boundaries. Selective absorption, however, operates at a distinct decision point, where employer requirements, workforce demand, and available positions constrain the conversion of readiness into direct recruitment. This sequence shows that the pathway can function coherently at the educational and workplace-learning stages while still producing selective direct employment outcomes.

A critical transition in this case concerned the movement from substantial educational and workplace preparation to direct recruitment by PT INKA. The Fast Track Program Report documented that five of 25 pathway participants were subsequently recruited by PT INKA, representing approximately 20% direct absorption into the partner company. This figure should not be interpreted as the overall employment rate of the cohort because the available evidence does not establish the employment status of the remaining participants. More importantly, the case shows that limited direct absorption did not necessarily indicate a failure of competence recognition or workplace preparation. Instead, it reflected a separate employer-side decision process. PT INKA explicitly indicated that participants were not recruited automatically and remained subject to recruitment and selection requirements, while the number and types of available positions were limited. This case-specific pattern therefore distinguishes employment readiness from recruitment entitlement: the pathway could prepare candidates for employment, but the conversion of that preparation into direct recruitment remained conditional on employer requirements and available positions.

This distinction can be explained by the different institutional logics governing educational progression and employment conversion. In this case, the transition to employment also marked a shift in decision authority. Educational institutions and the industry partner could jointly support competence recognition and workplace preparation, but the final recruitment decision remained under employer authority. Partnership governance can coordinate institutions, RPL can recognize prior competence, and industry immersion can strengthen workplace readiness, but none of these processes can independently generate vacancies or remove employer-side selection. Recruitment remains dependent on workforce demand, employer requirements, and the availability of suitable positions. This interpretation is broadly consistent with evidence that vocational education can improve labor-market outcomes while producing differentiated results across institutional and labor-market contexts. Research on dual vocational education similarly indicates that employability gains can coexist with implementation constraints and employer-side filtering (Guerrero Puerta & Lorente García, 2025; Vanderhoven et al., 2025). The present case extends this discussion by showing selective absorption as a distinct employer-side gatekeeping stage that occurred after competence recognition and substantial workplace preparation had already taken place. Competence

recognition establishes eligibility, and industry immersion strengthens readiness, but neither creates an entitlement to employment.

These findings also have practical and policy implications. The case suggests that the performance of a vocational fast-track pathway should not be assessed solely by the proportion of participants directly recruited by a single industry partner. Competence recognition, academic progression, workplace participation, employment readiness, and direct recruitment represent distinct outcomes occurring at different stages of the pathway. Workforce forecasting should be incorporated more explicitly into pathway planning so that cohort size and specialization can be better aligned with anticipated industry demand. The case also indicates that accelerated progression depends on maintaining transparent standards for competence evidence and verification within the skill passport and RPL process rather than treating prior learning as automatically transferable. In addition, where direct recruitment by the anchor industry partner is constrained by available positions, developing connections with additional employers may broaden potential employment destinations for participants who have acquired recognized competence and substantial workplace exposure.

The study contributes to the literature by showing that a vocational fast-track pathway is more appropriately understood as a configuration of interconnected institutional processes than as a direct education-to-employment pipeline. Previous studies have often examined governance, recognition of prior learning, workplace learning, and labor-market outcomes as relatively separate issues. The present case brings these processes together within a single pathway and shows that they operate as connected but institutionally distinct stages. Partnership governance enables cross-institutional coordination, competence recognition supports academic progression, and industry immersion develops workplace readiness, while the transition to direct employment remains governed by employer-side selection. Its central contribution lies in distinguishing the enabling processes of progression and preparation from the selective process of employment conversion. This distinction also reveals a shift in decision authority across the pathway: earlier stages depend on coordinated institutional action, whereas final recruitment remains under employer control and is constrained by workforce demand and available positions. The case thus helps explain how a pathway can be institutionally coherent and educationally enabling while still producing selective direct absorption into the partner company. More broadly, it suggests that the effectiveness of vocational fast-track pathways should be understood not only in terms of accelerated progression or direct recruitment, but also through the quality of institutional coordination, credibility of competence recognition, depth of workplace learning, and transparency of the transition from employment readiness to actual recruitment.

CONCLUSION

This study examines how the Fast-Track D2 pathway linking a vocational high school, a polytechnic, and an industry partner operates as a cross-institutional arrangement for

educational progression, competence recognition, workplace learning, and employment transition. The case shows that the pathway functioned through a sequence of interconnected but institutionally distinct processes. Partnership governance coordinated differentiated institutional roles, competence evidence and recognition supported academic progression, workplace culture formation through industry immersion strengthened workplace readiness, and selective absorption governed the final transition to direct recruitment. These processes operated within the same pathway but were governed by different forms of institutional authority and decision-making.

The findings also show that educational and workplace progression did not automatically lead to employment with the partner company. Although participants gained recognized competence and substantial industry exposure, direct recruitment by PT INKA remained conditional on recruitment requirements, workforce demand, and available positions. Of the 25 pathway participants documented in the Fast Track Program Report, five were directly recruited by PT INKA, representing approximately 20% direct absorption into the partner company. This proportion should not be interpreted as the overall employment rate of the cohort because the subsequent employment status of the remaining participants was not established. The case therefore demonstrates a clear distinction between employment readiness and recruitment entitlement: the pathway supported competence recognition and workplace preparation, while final employment conversion remained subject to employer-side selection.

The study is limited to a single Fast-Track D2 case and does not trace participants' longer-term employment trajectories after program completion. Accordingly, the findings are intended to provide an analytically grounded explanation of how the pathway operated within this bounded institutional context rather than to represent all vocational fast-track pathways in Indonesia. The available evidence also does not establish the employment status of participants who were not directly recruited by PT INKA. Future research should therefore examine comparable fast-track pathways across different institutional and industrial settings, investigate how similar governance, recognition, and workplace-learning processes operate in other cases, and follow graduates longitudinally to better understand how employment readiness is converted into employment outcomes over time.

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APPENDIX

Table 1.

Participant Profile and Relevance to the Case

Institutional group	Functional roles represented	n	Relevance to the case
Vocational High School	Institutional leadership, curriculum coordination, partnership coordination, program administration, skill passport administration, internship teaching	7	Provided first-hand knowledge of vocational preparation, competence documentation, institutional coordination, and transition to the D2 pathway
Polytechnic	Institutional leadership, academic coordination, program coordination, RPL, internship coordination, teaching	8	Provided evidence on academic progression, RPL, curriculum alignment, supervision, and

			coordination with school and industry
Industry partner	Human resources, training, internship supervision, field supervision, user/employment functions	5	Provided evidence on workplace immersion, workplace culture, supervision, competence expectations, and employment selection
	Total	**20**	

Table 2.

Data Sources and Evidence Coverage

Data source	Corpus or coverage	Primary analytical contribution
Semi-structured interviews	20 verified face-to-face interview transcripts from VHS, polytechnic, and industry participants.	Participants' accounts of governance, competence recognition, workplace learning, supervision, and employment transition.
Contextual non-participant observations	Learning activities and facilities at the VHS and polytechnic; internship activities, facilities, and workplace practices at PT INKA.	Contextual evidence of educational practices, industry immersion, workplace environment, and implementation conditions.
Institutional and policy documents	Decree No. 56/D/HK/2020; Link and Match 8+i materials; PT INKA Manufacture Institute and Fast-Track launch documentation (PT INKA, 2020); Fast Track Program Proposal; MoU-1; MoU-2; School Development Document; and Fast Track Program Report.	Regulatory context, program design, institutional responsibilities, implementation arrangements, and reported outcomes.
Program artifacts	Skill passport sample, referenced portfolios, internship monitoring and assessment instruments.	Evidence of competence documentation, recognition, supervision, assessment, and workplace learning.

Table 3.

Semi-Structured Interview Protocol

Interview domain	Main focus	Indicative prompts
Participant role and involvement	Position and responsibilities within the Fast-Track pathway	What was your role in the Fast-Track program? At what stages were you involved?
Partnership governance	Institutional roles, coordination, decisions, and resource commitments	How were responsibilities divided among the school, polytechnic, and industry partner?
Competence recognition	Skill passport, competence evidence, and RPL	How was prior competence documented and recognized for progression into the D2 pathway?
Industry immersion	Internship, supervision, workplace learning, and workplace culture	How did students learn and adapt to industrial work practices during industry immersion?
Assessment and supervision	Monitoring, feedback, competence assessment	How were students supervised and assessed during workplace learning?
Employment transition	Recruitment, employer requirements, workforce demand, available positions	How were graduates considered and selected for employment after completing the pathway?
Closing reflection	Overall operation and unresolved issues	What aspects of the pathway worked well, and what remained challenging?

Table 4.

Illustrative Analytical Pathway from Evidence to Themes

Original evidence	Initial code	Analytical category	Final theme
VHS: "INKA has the jobs, whereas the polytechnic designs and supervises, and the vocational high school carries out the work." (VHS-2) **Industry:** "PNM acts as the middle party … we need PNM as a bridge to supervise the work carried out outside INKA." (INKA-1)	role differentiation; supervisory responsibility; cross-institutional coordination; intermediary function	institutional role allocation and coordination	Partnership Governance

VHS: "What matters are the competencies that students have achieved. These are then recognized by the polytechnic—there is recognition." (VHS-1) **Polytechnic:** "When we conduct RPL, we still use our standards. If it meets our standards, we recognize it; if not, there is a test, and if the test is still inconclusive, there is an interview." (PNM-1)	skill passport as competence evidence; demonstrated competence; RPL verification; standards-based recognition; cross-institutional recognition	competence documentation, verification, and recognition	Competence Evidence and Recognition
Industry: "Several classes are also conducted here in the industry, in the teaching-industry class, so that they can observe and understand how professionals actually work. This has been instilled from the beginning through this collaboration." (INKA-1)	workplace exposure; authentic industrial learning; professional socialization; corporate culture; work discipline	workplace learning and cultural formation	Workplace Culture Formation Through Industry Immersion
Industry: "We do not automatically recruit them … there is still recruitment, there is still selection, and they still have to meet our requirements." (INKA-1) The participant further explained that available positions were limited and that the company could not absorb all graduates. (INKA-2)	selective recruitment; employer requirements; limited workforce demand; available positions; non-automatic transition	employer-side selection and gatekeeping	Selective Absorption

Table 5.

Representative Evidence on Partnership Governance

Participant / Perspective	Verbatim Quotation	Analytical Meaning
VHS-2, Vocational High School	"We are linked with INKA, so the design comes from INKA. The original production-arm concept was that INKA had the job, the polytechnic designed and supervised it, and the vocational high school carried out the work. In other words, the company has the product or job, the polytechnic designs and supervises, and the vocational high school carries it out."	Institutional responsibilities were differentiated but interdependent, with the school positioned primarily in implementation and competence-development activities.
PNM-1, Polytechnic	"Because we already had intensive communication with INKA, the implementation of the D2 program went relatively smoothly. We also determined the courses together with INKA, including which laboratories would be our responsibility and which parts would be handled by industry."	Governance involved joint academic planning and allocation of learning responsibilities and facilities between the polytechnic and industry.
INKA-1, Industry	"PNM is positioned in the middle. As a supervisor, they handle the vocational high schools because we cannot supervise them directly. INKA also has many operational responsibilities, so we need PNM as a bridge in the middle to connect and supervise work carried out outside INKA."	The polytechnic performed an intermediary and supervisory function between school-based implementation and industrial requirements.
PNM-1, Polytechnic	"We had already developed it together with INKA several months beforehand. We met at INKA to discuss it, and we also met here to discuss it. We discussed what laboratories they had, what facilities we had, and how the different parts would be allocated."	Coordination was iterative and involved repeated cross-institutional discussion of curriculum, facilities, and implementation arrangements.
INKA-1, Industry	"What we actually did was curriculum synchronization. The curriculum was developed jointly, and initially PNM acted as the trigger because they came from the education side. They then came to us to synchronize the curriculum and asked for	Industry participation involved substantive curriculum review, occupational input, and recurring synchronization rather than formal approval alone.

Participant / Perspective	Verbatim Quotation	Analytical Meaning
	our input regarding whether the curriculum was aligned with the jobs and competencies available at INKA and with what would be needed in the future. We then brought in experts from INKA to examine whether the curriculum was sufficiently aligned. There were continuing meetings and various discussions to synchronize the curriculum."	

Table 6.

Representative Evidence on Competence Evidence and Recognition

Participant / Perspective	Verbatim Quotation	Analytical Meaning
VHS-1, Vocational High School	"Because we use a skill passport, the D2 Fast-Track program is no longer about whether this is education at the polytechnic or education at the vocational high school. What matters are the competencies that students have achieved. These are then recognized by the polytechnic through a process of recognition."	The skill passport shifted the basis of progression from institutional location to documented competence attainment.
PNM-1, Polytechnic	"When we conduct RPL, we still conduct it according to our standards. If it meets our standards, we recognize it. If it does not, there is a test; and if the test is still not convincing, there is an interview."	Recognition was conditional on polytechnic standards and involved additional verification when documentary evidence was insufficient.
PNM-2, Polytechnic	"We examined the curriculum, the skill passport, and the students' competencies. We also studied them and checked directly at the school. So far, what we required was fulfilled, and therefore we recognized it for this study program."	RPL involved review of documentary evidence and direct institutional verification before prior competence was formally recognized.
INKA-1, Industry	"The curriculum was developed jointly, initially triggered by PNM because they came from the education side. They then came to us to synchronize the curriculum and asked for our	Industry involvement helped align recognized competence with occupational requirements

	input regarding whether it was aligned with the jobs, competencies, and future needs at INKA."	rather than academic requirements alone.

Table 7.

Representative Evidence on Workplace Culture Formation through Industry Immersion

Participant / Perspective	Verbatim Quotation	Analytical Meaning
PNM-1, Polytechnic	"The D2 program consists of 72 credits. The first semester is mainly conducted on campus, while the second and third semesters are conducted in industry for one year. In total, students spend around ten months in industry, equivalent to 36 credits."	Industry immersion constituted a substantial curricular component rather than a supplementary short-term internship.
PNM-1, Polytechnic	"Several courses are taught by INKA employees, so when they teach, they do not necessarily have to leave the factory. We also determine the courses together with INKA, including which parts are conducted in our laboratories and which parts are conducted in industry."	Workplace learning was integrated with academic delivery through co-teaching and shared responsibility for curriculum implementation.
INKA-1, Industry	"Some classes are also conducted in industry, in the teaching industry setting, so that they can observe and understand how professional workers actually work. This has been introduced from the beginning through this collaboration."	Industry-based learning exposed students to professional work patterns and supported workplace socialization.
VHS-2, Vocational High School	"There are now many production activities with INKA. One of the latest is the AC duct cover. The teacher acts as the manager and manages the project, while the students are fully involved there. We are linked with INKA, so the design comes from INKA."	Industry-linked production activities connected school-based learning with authentic industrial tasks and responsibilities.
INKA-1, Industry	"The benefits are quite significant for us, especially for future human resource development. In the long term, we see this program as preparing potential human resources through PNM and the vocational high schools. From the beginning, they are	Industry immersion was intended to develop both occupational competence and familiarity with professional behaviour and organizational culture.

	not only equipped with technical or hard skills, but also with soft skills and an understanding of company culture.”

Table 8.

Representative Evidence on Selective Absorption

Evidence Source	Verbatim Quotation / Documentary Evidence	Analytical Meaning
INKA-1, Industry	“We can obtain candidates who are ready for work. However, we do not automatically recruit them. There is still a recruitment and selection process, and there are requirements that must correspond to our needs.”	Pathway participation and perceived work readiness did not guarantee recruitment. Direct recruitment remained subject to employer-defined requirements and selection.
INKA-3, Industry	“The amount of work available to us is quite limited, including the job descriptions and positions available, so we cannot accommodate all graduates. Therefore, they are also prepared to pursue opportunities outside INKA.”	Direct absorption was constrained by the number and type of available positions rather than by graduate preparation alone.
INKA-5, Industry	“Companies must also be driven by their workforce needs. In our case, preparing human resources for the railway sector is indeed very important. Therefore, we collaborate with educational institutions in Madiun to help prepare those human resources.”	Industry participation in the pathway was connected to workforce demand and the need to prepare sector-relevant human resources.
MoU-2 (2020)	Documentary evidence indicated that employment opportunities within the partnership remained subject to the requirements and needs of the industry partner.	The formal partnership provided access to employment opportunities but did not establish an entitlement to recruitment.
Fast Track Program Report (2023)	Of 25 participants who progressed through the D2 pathway, five were subsequently accepted by PT INKA.	Direct absorption into PT INKA was selective, representing five of 25 participants, or approximately 20%.