

Grounded Theory in Vocational Education: A Conceptual Exploration to Bridge Research and Practice

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Technical and Vocational Education and Training (TVET) plays a strategic role in preparing competent and adaptive human resources. Yet, aligning vocational curricula with evolving industry demands remains an enduring challenge. This article integrates Grounded Theory (GT) and Social Exchange Theory (SET) to explore how interactional mechanisms within TVET shape employability, adaptability, and sustainable careers. Using a phenomenological grounded design with 15 construction-sector graduates in Yogyakarta, the study identifies how social reciprocity, trust, and psychological capital mediate transitions from wage employment to self-employment. GT enables the emergence of empirically grounded patterns, while SET explains the behavioral logic of exchange and motivation. Findings reveal three transformation pathways: (1) push & pull dynamics of entrepreneurial entry, (2) mobilization of social and psychological capital, and (3) digital adaptation for market access. Integrating GT and SET supports adaptive curricula, strengthens relational learning, and enhances graduates' resilience amid uncertainty. This conceptual empirical synthesis contributes to human-centered vocational reform aligned with Industry 4.0

Keywords: Vocational education, grounded theory, social exchange theory, adaptive curriculum.

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Introduction

Technical and Vocational Education and Training (TVET) plays a crucial role in preparing skilled, adaptive, and innovative workforces aligned with the needs of business and industry. However, persistent misalignments between training content and labor-market realities have

generated structural inefficiencies and high unemployment among vocational graduates. In Indonesia, the Open Unemployment Rate (OUR) of vocational high school alumni has consistently exceeded that of general-education graduates (Badan Pusat Statistik, 2024), underscoring a systemic challenge in linking school-based learning to workplace transitions. These dynamics are further complicated by automation, project-based employment, and the demands of the Fourth Industrial Revolution, all of which intensify job precarity and call for renewed approaches to vocational education. **As shown in Figure 1**, the open unemployment rate among vocational graduates remains consistently higher than that of general education graduates, underscoring persistent structural misalignment in TVET-to-work transitions.

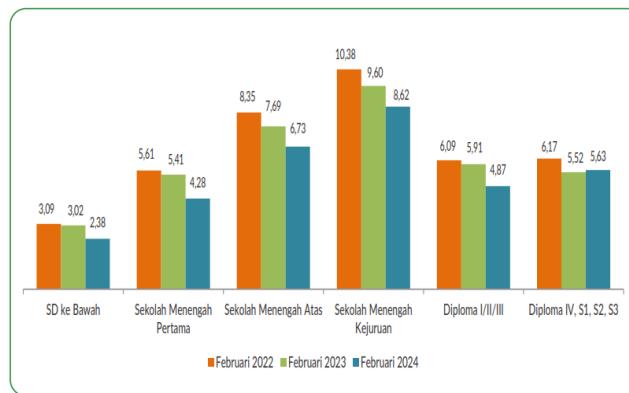


Figure 1. Open Unemployment Rate (OUR) by Highest Educational Attainment (Percentage) from February 2022 to February 2024

Note. Data adapted from Badan Pusat Statistik (2024).

Grounded Theory (GT), as developed by Glaser and Strauss (1967), provides a flexible methodology to uncover patterns of social interaction and meaning-making in lived experiences. Within TVET, GT has been applied to explore how students construct vocational identities, negotiate challenges in work-based learning, and translate competencies into employability (Lensjø, 2021; Karuntu et al., 2022). Social Exchange Theory (SET), on the other hand, elucidates how reciprocal relationships trust, recognition, and perceived support shape motivation and performance in educational and workplace systems (Blau, 1964; Cropanzano & Mitchell, 2005). Despite their complementary potential, few studies have systematically integrated GT's inductive insights with SET's relational framework to explain behavioral mechanisms underpinning vocational adaptation.

The Indonesian construction sector offers a revealing empirical context for such integration. Characterized by informality, discontinuous contracts, and limited institutional protection (Badan Pusat Statistik, 2021; Ryandika et al., 2023), it highlights the fragile conditions under which vocational graduates must sustain their careers. Understanding how they mobilize trust, social support, and psychological resilience to navigate uncertainty is crucial for designing adaptive curricula and policy interventions.

Building on this foundation, the present article operationalizes the integration of GT and SET to theorize career transformation among TVET graduates in project-based labor markets. By combining inductive coding with relational interpretation, it contributes to the development of a behaviorally grounded model of vocational-to-entrepreneurial transition. The study advances both theoretical synthesis and practical insight into how human exchange processes facilitate sustainable vocational careers.

Grounded Theory: From Empirical Roots to Vocational Application

Grounded Theory (GT) offers a systematic yet flexible method for developing theory directly from data rather than from predetermined hypotheses (Glaser & Strauss, 1967). Through open, axial, and selective coding (Strauss & Corbin, 1990), GT enables researchers to interpret meaning that emerges from participants' lived experiences. This iterative process of constant comparison ensures that theory remains grounded in social reality rather than imposed by preconceived frameworks.

In the context of vocational education, GT has proven especially effective for decoding the complexity of social interaction, workplace learning, and identity formation (Ahmad, 2015; Lensjø, 2021). For instance, Karuntu et al. (2022) demonstrated how GT can capture adaptive learning processes shaped by motivation, supervisory styles, and peer collaboration. Such inductive analysis reveals how students internalize professional values and construct occupational identities through trust-based mentorship.

Beyond its methodological role, GT has evolved into a strategic framework for educational innovation. By tracing how competencies develop through authentic experience, GT supports evidence-based curriculum reform that aligns institutional learning outcomes with workplace realities (Goddard, 2004). This dual orientation methodological and practical makes GT particularly valuable for adaptive, inclusive, and context-sensitive TVET reform.

Empirical applications of GT in vocational contexts reinforce its methodological relevance. Studies in Malaysia (Rus et al., 2015) and Norway (Lensjø, 2021) demonstrated how GT reveals social dynamics of

learning trust, adaptability, and workplace community support that shape successful work-based education. Similarly, Ahmad (2015) applied GT to curriculum development, aligning vocational competencies with evolving technological and industrial demands. These cross-context findings justify GT's use as a discovery tool for uncovering behavioral mechanisms in vocational adaptation, particularly in dynamic sectors such as construction.

Social Exchange Theory: Relational Logic in Learning and Work

Social Exchange Theory (SET) conceptualizes human relationships as ongoing exchanges of tangible and intangible resources such as trust, recognition, and support (Blau, 1964). Within TVET ecosystems, SET provides a relational logic to understand how teacher-student, peer, and industry linkages sustain engagement and employability. Reciprocity fosters motivation and belonging, while asymmetry or perceived unfairness can erode confidence and diminish learning outcomes (Cropanzano & Mitchell, 2005). SET also clarifies the psychological underpinnings of learning and career adaptability. When learners experience consistent support and recognition, they build self-efficacy and psychological capital that sustain perseverance under uncertainty (Donald et al., 2024; Van der Heijden, Hofer, & Semeijn, 2024). Conversely, qualitative job insecurity common among project-based workers can weaken career satisfaction and perceived employability if social buffers are absent (Keating, 2024). Applied to vocational education, SET underscores the importance of trust, embeddedness, and institutional reciprocity as bridges between formal instruction and real-world practice. In this way, SET complements GT by providing the behavioral rationale behind the empirical categories that emerge from field data explaining not only *what* occurs in vocational learning but *why* it persists.

Integrating GT and SET: Toward an Interactional Framework

Previous applications of Social Exchange Theory (SET) in vocational research have highlighted how trust, recognition, and social support drive employability and career sustainability (Donald et al., 2024; Jiang et al., 2024; Van der Heijden et al., 2024; Keating, 2024). Integrating these insights with Grounded Theory enables a more complete behavioral explanation linking inductively discovered categories with the relational mechanisms that sustain vocational transformation. Integrating GT and SET creates a dual-lens approach linking inductive discovery with relational explanation. GT captures emergent categories such as "reciprocal mentoring," "trust-based learning," or "adaptive collaboration" while SET interprets these categories as exchange processes that balance autonomy, recognition, and obligation. This synthesis enables the

articulation of an Interactional Grounded Exchange Model, where social behavior in learning contexts evolves through iterative cycles of reciprocity and reflection. **Figure 2 illustrates the Interactional Grounded-Exchange Model**, demonstrating how experiential learning evolves through inductive (GT) and relational (SET) mechanisms toward sustainable career outcomes.

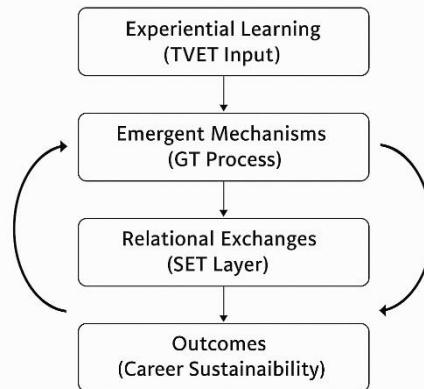
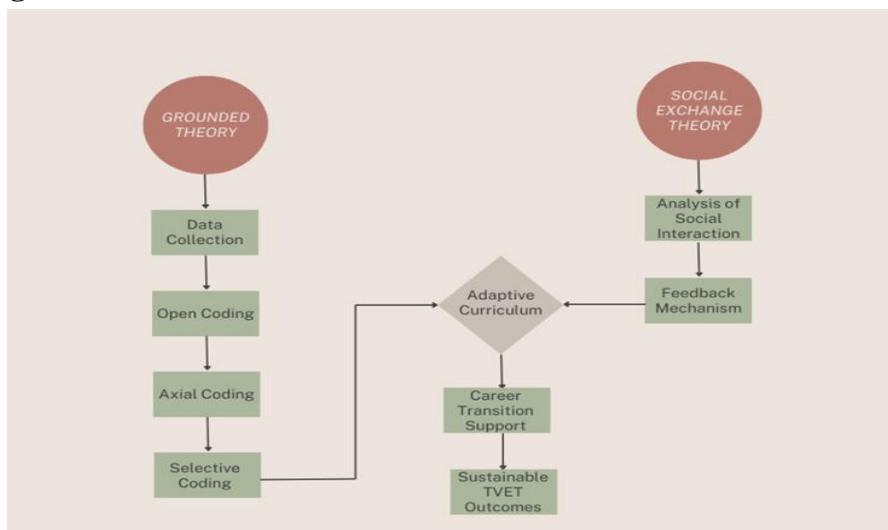


Figure 2. Interactional Grounded-Exchange Model

Note. Developed by the authors based on Grounded Theory and Social Exchange Theory.

The model illustrates how experiential learning (TVET input) evolves through emergent mechanisms (GT process) and relational exchanges (SET layer) toward career sustainability outcomes. The cyclical arrows represent iterative feedback loops of reciprocity and reflection in vocational transformation. The integrated perspective reframes TVET as both a socio-technical and socio-behavioral system: technical competence and human relations jointly shape employability and career resilience. Through this lens, theory generation (GT) feeds directly into theory explanation (SET), establishing a dynamic conceptual bridge between micro-level interaction and macro-level career sustainability. Ultimately, this integration extends the scope of vocational research moving beyond description toward explanation of how trust, support, and shared meaning *facilitate* vocational adaptation and entrepreneurial transition. The analytical linkage between empirical category generation and relational explanation is summarized in

Figure 3.**Figure 3. GT-SET Analytical Framework for Vocational Career Transformation**

Note. Author's conceptual framework integrating GT procedures and SET mechanisms.

This framework integrates Grounded Theory and Social Exchange Theory to connect empirical discovery with relational explanation. GT procedures (data collection to selective coding) generate inductive categories, while SET mechanisms (social interaction and feedback processes) explain the relational logic underpinning those categories. Their intersection Adaptive Curriculum links data-driven findings to practical pathways of career transition support and sustainable TVET outcomes.

Method

Research Design

A phenomenological grounded qualitative design (Charmaz, 2014; Creswell & Poth, 2018) was adopted to explore the lived experiences of TVET graduates while inductively building relational categories derived from data. This hybrid design integrates phenomenology's depth of meaning with grounded theory's systematic coding logic, allowing for both experiential richness and theoretical precision. The analytical framework (Figure 2) combines Grounded Theory for category generation and Social Exchange Theory for interpreting the relational mechanisms that shape adaptive career processes.

Sample

In sample (N=15) graduates from construction-related TVET programs in Yogyakarta (cohorts 2017–2020) participated in semi-structured interviews conducted between July and August 2025. Seven of

these participants had transitioned into self-employment and were analyzed in greater depth to identify entrepreneurial transformation pathways within the construction sector, a labor domain marked by informality and contract discontinuity.

Data Collection and Analysis

Data were gathered through 45–70-minute interviews focusing on participants' career trajectories, social relationships, and coping strategies. Analysis in ATLAS.ti 25 followed three iterative stages (open, axial, and selective coding) yielding 234 co-occurrence relations across individual and contextual dimensions, which were subsequently clustered into thematic categories through iterative constant comparison. The process was guided by constant comparative logic (Glaser & Strauss, 1967) to ensure emergent categories remained grounded in the data.

Interpretation was enriched using Social Exchange Theory (SET) constructs trust, reciprocity, and support to clarify behavioral linkages between themes, thus operationalizing the *GT-SET analytical framework*. Rigor was enhanced through member checking, peer debriefing, and reflexive memoing, ensuring analytical transparency and credibility (Lincoln & Guba, 1985).

Ethical Approval

Ethical approval was granted by the Research Ethics Committee, Universitas Negeri Yogyakarta (Protocol No. KEPUNY250500196; valid 7 Feb 2025 – 7 Feb 2026). All procedures conformed to institutional and international standards for research involving human participants. Informed consent was obtained from all participants, including permission for anonymized quotations and figure presentation. Pseudonyms (P01–P15) were used to ensure confidentiality.

Findings

Push & Pull Dynamics of Entrepreneurial Entry

Graduates transitioned from wage-based employment to self-employment driven by *push* factors low income stability, contract precarity and *pull* factors autonomy and purpose.

Participant 3

“Contracts kept ending every few months; I was tired of waiting and started taking small renovation jobs” (P03).

Participant 11

“I wanted to manage my time and clients—work feels more mine that way” (P11).

Participant 7

“Salary barely increased, but responsibility did. During the pandemic, I began small renovation work; that became my entry point” (P07).

This dual mechanism illustrates necessity- and opportunity-driven entrepreneurship (Hughes, 2003; Lofstrom et al., 2014), showing that TVET pathways can evolve beyond employment-seeking toward self-initiated transformation.

Mobilizing Vocational, Psychological, and Social Capital

Participants emphasized that technical competence formed the base of employability, but *psychological* and *social capital* determined sustainability. Applying Luthans et al.’s (2015) framework, hope, efficacy, resilience, and optimism (psychological capital) were reinforced through trust-based exchanges and community recognition (social capital).

Participant 2

“My first capital was trust. A senior referred me; I ensured quality and punctuality” (P02).

Participant 5

“When a client complained, we fixed it immediately. That’s how repeat jobs came” (P05).

Participant 14

“Honest work built my confidence to bid for bigger projects” (P14, 2018).

These narratives embody SET principles of reciprocity and recognition, revealing that success in informal economies depends as much on social exchange as on technical mastery.

Digital Adaptation and Market Access

Digital engagement emerged as a catalyst for credibility and reach. Graduates used WhatsApp, Instagram, and YouTube to promote their services, coordinate projects, and acquire new skills.

Participant 1

“Clients saw my portfolio on Instagram before contacting me” (P01).

Participant 9

“We used WhatsApp for updates and photos; clients felt secure” (P09).

Participant 12

“I learned cost estimation from YouTube—very helpful for managing projects” (P12).

Digital literacy thus served as both a **technical enabler** and a **behavioral facilitator**, reinforcing *SET's feedback mechanism* through trust-building and visibility loops. This integration of digital and relational behavior illustrates how adaptive learning aligns with sustainable TVET outcomes (Figure 2).

In interpretive Summary together, the three themes entrepreneurial motivation, capital mobilization, and digital adaptation construct a coherent model of vocational career transformation. Grounded categories from participants' experiences (GT) were interpreted through relational exchanges and adaptive mechanisms (SET), forming the empirical basis for the *Integrative Model of Vocational Career Transformation* (Figure 3).

Discussion

Guided by the GT–SET analytical framework, the discussion interprets how vocational graduates construct sustainable careers through interactional and behavioral mechanisms. Figure 4 visualizes the Integrative Model of Vocational Career Transformation, which connects the pre-transformation career pattern, the transformation process, and the indicators of transformation success. This model links inductively generated categories (via GT) with relational mechanisms (via SET), illustrating how social exchanges translate technical competence into sustainable employability. Behavioral Mechanisms of Career Transformation Grounded Theory revealed bottom-up behavioral patterns such as trust, recognition, and collaborative resilience emerging from participants' lived experiences.

Through the interpretive lens of Social Exchange Theory, these patterns demonstrate the motivational logic of reciprocity where recognition and support reinforce engagement, particularly when formal institutional assistance is limited (Blau, 1964; Cropanzano & Mitchell, 2005).

Participant 3

“Contracts kept ending every few months; I was tired of waiting and started taking small renovation jobs” (P03).

Participant 2

“My first capital was trust. A senior referred me; I ensured quality and punctuality” (P02).

These statements exemplify the micro-mechanisms by which reciprocal exchanges and trust-based learning generate continuity of work, fostering behavioral sustainability in otherwise precarious contexts. The integrated model thus positions employability capital exchange-based learning sustainable career identity as a coherent transformation pathway

(Donald et al., 2024). As depicted in Figure 4, the Integrative Model of Vocational Career Transformation connects pre-transformation career patterns, adaptive processes, and indicators of transformation success.

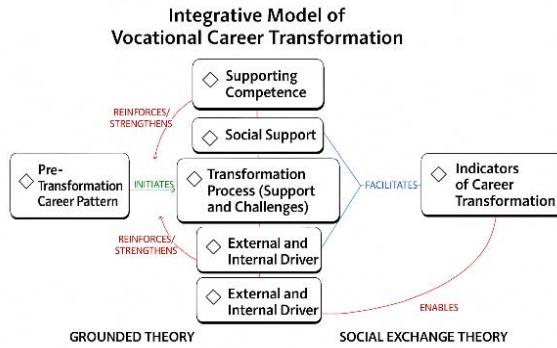


Figure 4. Integrative Model of Vocational Career Transformation

Note. Synthesized from empirical findings and theoretical integration.

This model synthesizes the inductive categories derived from Grounded Theory (left side) and the relational mechanisms explained by Social Exchange Theory (right side). The model illustrates how pre-transformation career patterns initiate adaptive processes involving competence support, social support, and internal–external drivers. These processes, in turn, facilitate and enable sustainable career transformation outcomes, thereby reinforcing employability and vocational identity formation

Humanistic Vocationalism and Psychological Adaptation

Findings align with Sudira's (2016) notion of vocational humanism, in which technical mastery coexists with moral and social responsibility. Graduates' adaptive success was not determined solely by skills but by the integration of competence, values, and social maturity. SET mechanisms of mutual trust and recognition reinforce the moral dimension of work shaping not only productivity but also self-worth and professional ethics. Digital engagement added another adaptive layer. Participants' use of WhatsApp, Instagram, and YouTube cultivated both autonomy and accountability. Such practices mirror psychological capital development (hope, efficacy, resilience, optimism; Luthans et al., 2015), where self-directed learning and client feedback cycles foster intrinsic motivation and confidence.

Hence, sustainable vocational transformation involves technological competence intertwined with psychological adaptability and relational reliability.

Conclusion

Integrating Grounded Theory (GT) and Social Exchange Theory (SET) provides a comprehensive interpretive framework for understanding how vocational graduates navigate uncertainty and craft sustainable careers. Empirically, GT captures the *interactional realities* of graduates transitioning from formal employment toward entrepreneurial self-reliance. Theoretically, SET clarifies the behavioral logic of reciprocity, trust, and social support that sustains employability within informal economies. This dual-theoretical approach reveals how technical competence evolves into social legitimacy, emphasizing that sustainable careers emerge not only from skill mastery but from the relational mechanisms that validate and reinforce it.

In doing so, TVET shifts from a narrow focus on *training outcomes* to a broader vision of *human development* where learning ecosystems balance technical, psychological, and social adaptation. For policymakers and practitioners, the implication is clear: Vocational education must be designed as both a site of skill formation and a platform for relational growth. By embedding social exchange, digital adaptability, and resilience into curricula, TVET can fulfill its dual promise as an engine of employability and as a vehicle for inclusive, sustainable transformation.

Limitations and Strengths

Despite its contributions, this study has several limitations. First, the qualitative sample was limited to construction-sector TVET graduates in Yogyakarta, which may constrain the transferability of findings to other vocational fields or regional contexts. Second, the study relied primarily on retrospective self-reported narratives, which may be subject to recall bias and post-hoc rationalization. Third, although the integration of Grounded Theory and Social Exchange Theory offers strong explanatory power, the study does not quantitatively test causal relationships among identified constructs.

Future research could address these limitations by expanding the sample across multiple vocational sectors and regions, incorporating longitudinal designs to track career trajectories over time, and integrating mixed-method approaches to empirically test the proposed interactional model. Such efforts would further strengthen the robustness and

generalizability of the GT–SET framework for vocational career transformation.

Despite these limitations, the study has several strengths. It offers a novel integration of Grounded Theory and Social Exchange Theory, enabling both inductive category generation and relational explanation of vocational career transformation. The study also employs rigorous qualitative procedures, including iterative coding, constant comparison, and reflexive memoing, which enhance analytical credibility and transparency. Furthermore, its focus on construction-sector TVET graduates in a project-based labor market provides contextually grounded insights that are highly relevant for vocational education policy and practice in emerging economies.

Policy and Practice Implications

The GT–SET synthesis points toward a behavioral curriculum reform agenda in vocational education. Key implications include:

1. Integrating entrepreneurship and digital literacy into construction-related TVET curricula to align learning with labor-market realities.
2. Institutionalizing alumni–industry mentorship networks that compensate for weak formal employment channels.
3. Developing micro-contracting incubators to provide structured support for self-employed graduates.
4. Embedding social exchange training trust, feedback, and collaboration into pedagogical practice, cultivating relational competence alongside technical expertise.

These policy directions operationalize the social dimension of vocational learning, transforming TVET from a transactional training system into an *interactive ecosystem of exchange, adaptability, and trust*.

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Received June 30th, 2025

Revisions Received November 20th, 2025