A Managerial Competency Model That Ensures Competitiveness In Vocational Education

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Abstract: This article develops and justifies a managerial competency model tailored to vocational education and training (VET) organizations with the explicit purpose of strengthening institutional and system-level competitiveness. While VET institutions confront accelerating technological change, volatile labor markets, and high expectations for equitable outcomes, many governance failures result not from the absence of strategies but from gaps in managerial competencies that translate strategy into sustained performance. Building on competence-based management theory, contemporary quality standards for educational organizations, and labor-market responsiveness literature, the paper proposes a model that integrates five competency clusters: strategic and policy competence; partnership and market intelligence competence; pedagogy-technology alignment competence; data and quality assurance competence; and people-centered leadership competence. Methodologically, the study applies a design-oriented conceptual synthesis supported by document analysis and theory-informed reasoning. The model is elaborated through mechanisms, capabilities, and outcome indicators that link managerial behavior to competitiveness proxies such as program relevance, completion and employment rates, industry partnership density, and innovation throughput. Results indicate that institutions which systematically cultivate these competencies can more reliably renew curricula, orchestrate dual training and work-based learning, deploy interoperable learning technologies, and maintain a culture of continuous improvement. The discussion highlights implementation challenges, including workload pressures, fragmented data ecosystems, and risks of performativity and credential inflation. The article concludes with implications for policy and institutional practice, affirming that

competitiveness in VET is less a function of one-off reforms than of compound managerial capabilities exercised consistently across planning, operations, and evaluation cycles.

Keywords: Vocational education and training; managerial competencies; competitiveness; quality assurance; labor-market alignment; data governance; dual training; leadership; curriculum renewal; educational management.

Introduction: Competitiveness in vocational education and training is commonly framed in terms of program portfolios aligned with priority sectors, modern workshop equipment and simulation facilities, and the employability of graduates measured by job placement, wage trajectories, and employer satisfaction. These factors matter, yet they often obscure the managerial capacities required to orchestrate them coherently over time. In practice, VET institutions face a permanent coordination problem: they must interpret national skills strategies, accreditation rules, and qualification standards; translate them into curricula and assessment; secure and maintain partnerships with firms; marshal scarce financial and human resources; and adapt digital infrastructure to pedagogical purposes without compromising equity or quality. Many institutions adopt ambitious plans but struggle during execution because managerial competencies are uneven, unarticulated, or misaligned with the demands of digitalization and fast-moving labor markets.

The case for a managerial competency model, therefore, is not to add another layer of abstraction but to make explicit the behavioral repertoire and knowledge base that enable managers at all levels—directors, department heads, center coordinators—to convert policy aspirations into outcomes. Competency thinking in management has matured from static "traits" lists to dynamic, context-specific frameworks that define observable behaviors, underlying knowledge and values, and associated performance metrics. In VET, the contextual specificity is pronounced: the core value proposition is mastery of occupational standards attained through authentic practice, often in partnership with employers, where time-to-skills and safety are non-negotiable. Managerial practice must consequently balance educational integrity, regulatory compliance, and operational pragmatism. The introduction of digital platforms, learning analytics, and micro-credentials complicates the landscape by creating integration and validation requirements that can only be met through

deliberate competencies in data stewardship, interoperability, and change leadership.

This article advances a model that integrates strategic, relational, pedagogical-technological, analytical, and human-centric dimensions of management into a coherent architecture linked to competitiveness. Rather than offering an exhaustive catalogue, the model emphasizes a minimal, mutually reinforcing set of competencies that can be developed, assessed, and rewarded through institutional systems. It also positions competencies as cumulative assets: their value compounding through repeated planning–doing–reviewing cycles, where learning from evidence corrects course and accelerates renewal.

The aim of this research is to design and substantiate a managerial competency model for VET institutions that demonstrably contributes to competitiveness by enhancing labor-market alignment, quality of learning, operational efficiency, and innovation capacity, and to explicate mechanisms through which these competencies produce measurable improvements at organizational and system levels.

The study applies a design-science approach oriented to artifact construction—in this case, a competency model—supported by conceptual synthesis and document analysis. The synthesis draws on management competence literature, standards for educational organizations, guidance on e-learning quality, and empirical work on VET governance, industry partnerships, and work-based learning. Sources include ISO 21001 requirements for educational management systems and ISO/IEC 40180 for quality in learning technologies as structural references, the European frameworks for digital competence for both citizens and educators to articulate digital literacy expectations, and policy documents from organizations such as UNESCO, OECD, and the European Training Foundation to calibrate labor-market alignment and governance trends. Peer-reviewed studies on learning analytics, assessment, curriculum renewal, and organizational learning inform the behavioral anchors of the proposed competencies.

The procedure consisted of three steps. First, the literature and standards were coded for managerial tasks, knowledge requirements, and observable behaviors linked to VET performance, with attention to causal pathways suggested or implied by the sources. Second, candidate competencies were grouped and refined through the lens of parsimony and complementarity: each competency needed to be conceptually distinct yet practically interdependent with the others, and jointly sufficient to cover the core challenges VET managers face. Third, the model was

articulated into competency definitions with embedded mechanisms—policies, processes, and tools—and linked to competitiveness indicators such as program renewal rate, proportion of learners in dual pathways, graduate employment, and rates of assessment moderation and audit closure. While the study is not an empirical validation, it is designed to be operational: institutions can adapt the definitions into recruitment, professional development, and performance management instruments.

The resulting model comprises five interlocking competency clusters that together form a managerial capability system aligned with competitiveness imperatives in VET. Strategic and policy competence centers on the ability to translate national strategies, qualification and accreditation requirements, and sector roadmaps into institutional plans and program-level outcomes. Managers exercising this competence maintain a clear line of sight from occupational standards to curriculum and assessment, ensuring that intended learning outcomes are explicit, measurable, and aligned with assessment tasks and work-based learning experiences. They establish renewal cycles whereby evidence from employer feedback, tracer studies, and technology trends informs the periodic revision of modules and the introduction of micro-credentials that stack into full qualifications. This competence is consequential for competitiveness because it lowers the latency between market signals and curriculum change, thereby sustaining program relevance.

Partnership and market intelligence competence pertains to structuring and sustaining relationships with employers, sector associations, and public employment services in ways that generate authentic learning opportunities, high-quality apprenticeships, and co-investment in facilities. Managers operationalize this competence by formalizing partnership agreements that articulate learning outcomes, mentorship responsibilities, safety protocols, and data-sharing rules; by curating a portfolio of firms that reflects sector diversification; and by routinely ingesting and interpreting vacancy data, occupational forecasts, and technology adoption patterns. Competitiveness arises from the density and quality of these ties, which expand access to updated equipment and real-world tasks, accelerate graduate placement, and enrich feedback loops into curriculum and assessment.

Pedagogy-technology alignment competence concerns the selection, integration, and governance of learning technologies in service of pedagogical intent. Managers with this competence resist the tendency to procure platforms as ends in themselves; instead, they define use cases mapped to program outcomes and assessment practices. They insist on interoperability and accessibility, leveraging standards-compliant learning management systems, content repositories, and simulation environments that interface with student information systems and e-portfolio tools. They build instructional design capacity to support teachers in developing blended, competency-based sequences and authentic assessments that can be moderated and validated. Aligned technology magnifies the reach and quality of teaching, reduces friction, and enables formative analytics that support timely interventions, thereby boosting completion and mastery, both critical to institutional competitiveness.

Data and quality assurance competence is the backbone of evidence-informed management. Competent managers implement data governance policies that define ownership, stewardship, and quality assurance of datasets; ensure compliance with privacy and security requirements; and structure data architectures to provide coherent dashboards at program and institutional levels. They embed quality assurance processes—internal audit, curriculum and assessment moderation, cyclical review, and external accreditation—into everyday practice rather than episodic events. They are literate in the interpretation of learning analytics and translate patterns into decisions about resource allocation, support services, and curriculum redesign. This competence is directly related to competitiveness because it enables reliable performance improvement, reduces rework and compliance risk, and signals credibility to partners and regulators.

People-centered leadership competence emphasizes the human substrate of transformation. Managers cultivate professional communities focused on pedagogical innovation and safety, align workloads and incentives with strategic goals, and provide structured development paths in digital pedagogy, assessment literacy, occupational updating, and leadership. They communicate purpose with clarity, set realistic change rhythms, and attend to well-being and inclusion, recognizing that staff and student trust are preconditions for sustained performance. People-centered leadership attracts and retains talent, harmonizes change with capacity, and turns individual initiatives into institutional routines; it is therefore a determinant of long-run competitiveness.

These five competencies operate as a system. Strategic clarity without partnerships yields insular curricula; partnerships without data devolve into anecdotes; technologies without pedagogy create friction and cynicism; quality frameworks without leadership become performative. When exercised together,

however, the competencies reduce the variance between intention and outcome. Institutions begin to exhibit faster program iteration cycles, higher proportions of learners in work-based learning, improved completion and employment rates, and stronger reputational signals that attract students and partners. The model also scales across managerial tiers: senior leaders set policy and resource envelopes; mid-level managers orchestrate program operations and partnerships; unit coordinators translate plans into schedules, assessments, and learner support. Competence definitions can be contextualized for each tier while preserving alignment with institutional competitiveness indicators.

The proposed competency model advances the conversation on VET competitiveness by shifting attention from structural inputs to managerial behaviors that convert those inputs into value. It resonates with the literature on learning organizations, coherence in systems change, and the disciplined use of data and standards in educational improvement. Yet its implementation is subject to constraints that must be addressed to avoid ritualization. One challenge is workload saturation. Managers and teachers in VET often carry heavy teaching, supervision, and administrative burdens, leaving limited bandwidth for partnership cultivation, curriculum renewal, or reflective use of analytics. If institutions overlay competency expectations without rebalancing workloads or investing in instructional design and partnership roles, competencies will remain aspirational. The practical response is to redesign processes to remove low-value administrative friction, standardize core digital toolsets to reduce cognitive load, and cluster development around accreditation cycles so that learning has a clear payoff in external validation.

A second challenge is data fragmentation. Institutions frequently accumulate platforms that do not interoperate, leading to inconsistent data definitions and manual reconciliation efforts. Without a managed data architecture and stewardship roles, analytics generate misleading signals or fail to inform decisions. The competence model presumes deliberate choices about systems integration, master data management, and the governance of indicators, including disaggregation by equity categories. While the initial transaction costs of integration and governance are non-trivial, the competitive gains in reliability, responsiveness, and trust are significant.

Third, partnership density can be uneven across sectors and regions, exposing institutions to volatility when a small number of firms dominate placements and equipment support. Managers need to purposefully diversify partnership portfolios and protect learners through robust agreements that articulate learning outcomes and safety. Digital tools can broaden reach, but human brokerage remains central; therefore, partnership roles require recognition as skilled professional functions, not ad hoc duties grafted onto overburdened staff.

Fourth, the risk of performativity—managing to metrics rather than learning—must be contained. Competitiveness indicators are necessary but insufficient; they need to be embedded in narratives that explain causal mechanisms and contextual factors. For example, a temporary dip in completion rates during a curriculum overhaul may be justified by long-term gains in quality; analytics literacy among managers should cultivate the ability to distinguish signal from noise and to communicate trade-offs honestly.

Fifth, credential inflation and the proliferation of micro-credentials can erode employer trust if not grounded in recognized frameworks and assessment rigor. The managerial competencies must therefore include the capability to design micro-credentials that are stackable into qualifications, validated through moderation and industry review, and transparent about the knowledge, skills, and contexts they certify. Without such discipline, the appearance of innovation can mask a dilution of value, undermining competitiveness.

The people-centered dimension also warrants emphasis. VET learners are diverse, and many balance study with work and family obligations. Managers who understand the lived realities of students and design support structures—flexible scheduling, targeted advising, accessible materials—improve retention and equity. Diversity and inclusion in staffing, mentorship, and curriculum help to widen participation and expand the talent pipeline for priority sectors. Leadership that models ethical conduct in the use of learning data, that listens to staff concerns about technology adoption, and that recognizes mastery in practical teaching builds resilience and reputation.

In policy terms, competency-based management should be supported by enabling frameworks. Ministries and funding agencies can align incentives with outcomes that reflect quality and equity rather than sheer enrollment. Accreditation bodies can emphasize the presence of managerial development systems and evidence of competence in action, not merely policy documents. Sector councils and employer associations can co-produce competency profiles and provide structured occupational updating for teachers and managers. International partners can fund integration and capacity building rather than equipment alone. The model offered here provides a common language for

such alignment.

Finally, while the study is conceptual, it lends itself to empirical validation. Institutions could pilot the model by embedding the five competencies into selection, induction, and appraisal processes; operationalize behaviors into rubrics; and monitor associations with competitiveness indicators over multiple cycles. Mixed-methods designs could then explore causality: for example, whether gains in pedagogy-technology alignment competence predict improvements in completion, or whether growth in partnership competence correlates with increased apprenticeship quality and job placement.

Competitiveness in vocational education is the compounded outcome of managerial competencies that render strategy actionable, partnerships productive, technologies pedagogically meaningful, data trustworthy, and people willing and able to improve their practice. The competency model articulated in this article is intentionally concise and integrative, aimed at enabling institutions to focus development resources on the capabilities most predictive of performance. Strategic and policy competence reduces the lag between market signals and curriculum change; partnership and market intelligence competence opens access to authentic training and employment pathways; pedagogy-technology alignment competence turns platforms into learning gains; data and quality assurance competence institutionalizes evidence-based improvement; and people-centered leadership competence converts initiatives into culture. Together they constitute a managerial capability system that supports higher program relevance, improved completion and employment rates, and a reputation for reliability and innovation—core dimensions of VET competitiveness.

For policymakers, the implications are to fund capacity building that targets these competencies, to require evidence of their practice in accreditation, and to calibrate incentives toward outcomes that reward quality and equity. For institutional leaders, the task is to embed the competencies into recruitment, development, workload design, and performance review; to invest in interoperable systems and instructional design; and to cultivate employer partnerships as structured learning alliances. For researchers, the agenda includes rigorous validation of competency–outcome relationships across diverse contexts and the ethical scaling of analytics-enabled improvement. The future of competitive VET will belong to institutions that treat managerial competence not as an optional attribute but as their primary strategic asset.

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