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Collaborative Leadership in Industry–Higher Education Partnerships: A Review of Theories and Practices in Workforce Reskilling

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Abstract. In the context of rapid technological advancements and evolving labor-market demands, the alignment between higher education and industry has become increasingly critical. Traditional university models rooted in theoretical instruction are no longer sufficient to equip graduates with the practical skills required for modern employment. This has created a growing need for effective partnerships between educational institutions and industry, focusing on workforce reskilling and upskilling. This literature review explores the strategic role of educational leadership in facilitating industry and higher education partnerships, particularly in workforce development initiatives. It examines how leadership competencies such as effective communication,

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trust building, shared decision making, and resource coordination serve as mediating factors in the success of these collaborations. The review integrates insights from human capital theory, social exchange theory, the resource-based view, and collaboration theory to explain how educational leadership influences workforce reskilling and upskilling outcomes. It also investigates contextual differences through a comparison of China and Malaysia. China's centralized, state-driven model contrasts with Malaysia's decentralized, multi-stakeholder framework, highlighting the need to adapt leadership practices to specific political, cultural, and policy contexts. This comparative analysis emphasizes the importance of context-sensitive collaborative competencies in achieving successful outcomes. The main conclusion is that educational leadership and collaborative competencies are essential for effective industry and higher education partnerships. Strong leadership directly enhances the success of workforce development initiatives in both centralized and decentralized systems, offering practical implications for policymakers and educational leaders seeking to strengthen reskilling and upskilling programs.

Keywords: educational governance; industry–academia collaboration; skills development; cross-cultural partnership; education quality

1. Introduction

In the context of rapid technological advancements, global economic transformation, and evolving labor-market demands, the alignment between higher education and industry has become increasingly critical. Traditional university models, often rooted in theoretical instruction, are no longer sufficient to equip graduates with the practical skills needed for contemporary employment landscapes. In response, industry and higher education partnerships have emerged as strategic platforms for addressing skills mismatches through targeted reskilling and upskilling initiatives.

These partnerships go beyond transactional training arrangements. They are increasingly seen as complex, collaborative ecosystems in which educational institutions, industries, and governments co-construct workforce development pathways. Within this evolving landscape, educational leadership plays a pivotal role, not only in managing academic programs but also in forging cross-sector collaboration, driving curriculum reform, and cultivating institutional responsiveness to market demands. Leadership in this context requires a blend of strategic vision, collaborative competence, and adaptability to external environments (Wu & Liu, 2021).

This review investigates the theoretical and practical dimensions of such partnerships, focusing particularly on how educational leadership and collaborative capacity contribute to their effectiveness. Drawing upon established frameworks such as human capital theory (HCT), social exchange theory (SET), the resource-based view (REV), and collaboration theory, this study explores the mechanisms through which leadership shapes and sustains cross-sector cooperation. Additionally, the review highlights the comparative experiences of

different national systems, with emphasis on how political structures, institutional cultures, and policy priorities influence partnership dynamics. By synthesizing theoretical insights and empirical findings, this paper aims to offer a comprehensive framework for understanding the leadership competencies and institutional strategies that underpin effective industry–higher education collaborations for workforce development.

2. Theoretical Foundations

2.1 Human Capital Theory

Human capital theory (Figure 1) posits that investment in education and training increases individual productivity, yielding broad economic benefits. According to this view, structured learning experiences in higher education should systematically cultivate the skills that industries value (Dong et al., 2025; Taddese et al., 2025). Educational leaders thus act as "strategic architects of human capital development", shaping curricula and pedagogies to address skills gaps and economic needs.

For example, carefully designed technical programs can directly enhance employee competencies and innovation, thereby improving firm performance and national competitiveness. Scholars have also noted that HCT highlights adaptability: As industries change, institutions must revise programs (e.g., by adding new modules) so that alumni remain relevant. In practice, universities and colleges often co-develop courses with industry partners to ensure graduates learn up-to-date technologies and methods (Kaarsemaker, 2008; Weiss, 2015).

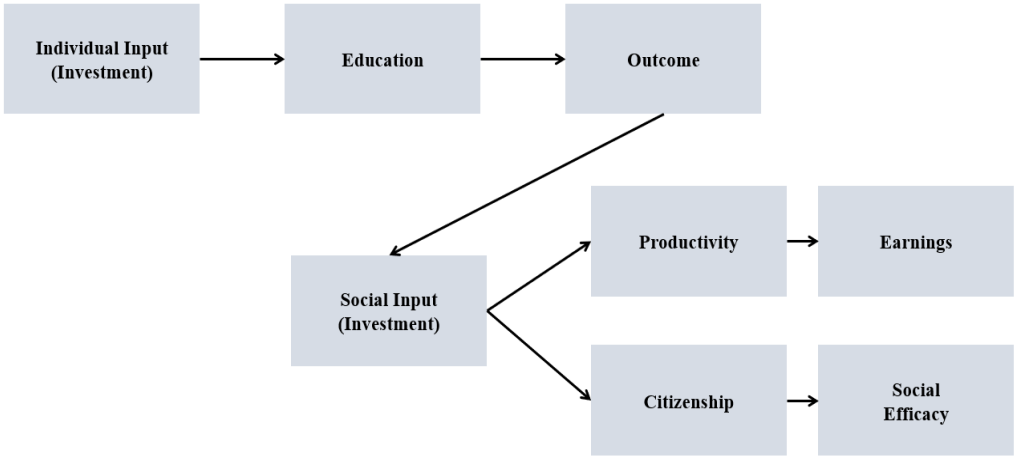

Figure 1: Human capital theory (Dong et al., 2025; Kaarsemaker, 2008; Weiss, 2015)

However, HCT alone does not explain the processes of collaboration. It shows why education investments matter, but not how cross-sector partnerships operate. As noted in the literature, HCT "does not fully explicate" the mechanisms by which industry and academia cooperate, nor how leadership competencies (such as communication and coordination) influence collaboration (Ting et al., 2019). For instance, HCT emphasizes the need for effective curricula, but it does not address how leaders negotiate with industry to share resources or co-create programs. This gap points to the importance of relational and governance factors

(explored below) in making educational investments count in workforce development (White, 2017).

2.2 Social Exchange Theory

Social exchange theory (Figure 2) focuses on the reciprocal nature of organizational relationships. It views inter-organizational cooperation as a series of exchanges where each party expects fair benefits; sustained partnerships require trust and balanced give-and-take (Cook et al., 2013; Homans, 1958). In the education–industry context, SET suggests universities typically contribute expertise, research capabilities, and training infrastructure, while companies provide funding, practical knowledge, and employment opportunities. Mutual trust is paramount: When academic and industry stakeholders believe the partnership yields net gains (e.g., a stronger curriculum for the university, a pipeline of skilled workers for the firm), collaboration is reinforced (Cook & Hahn, 2021).

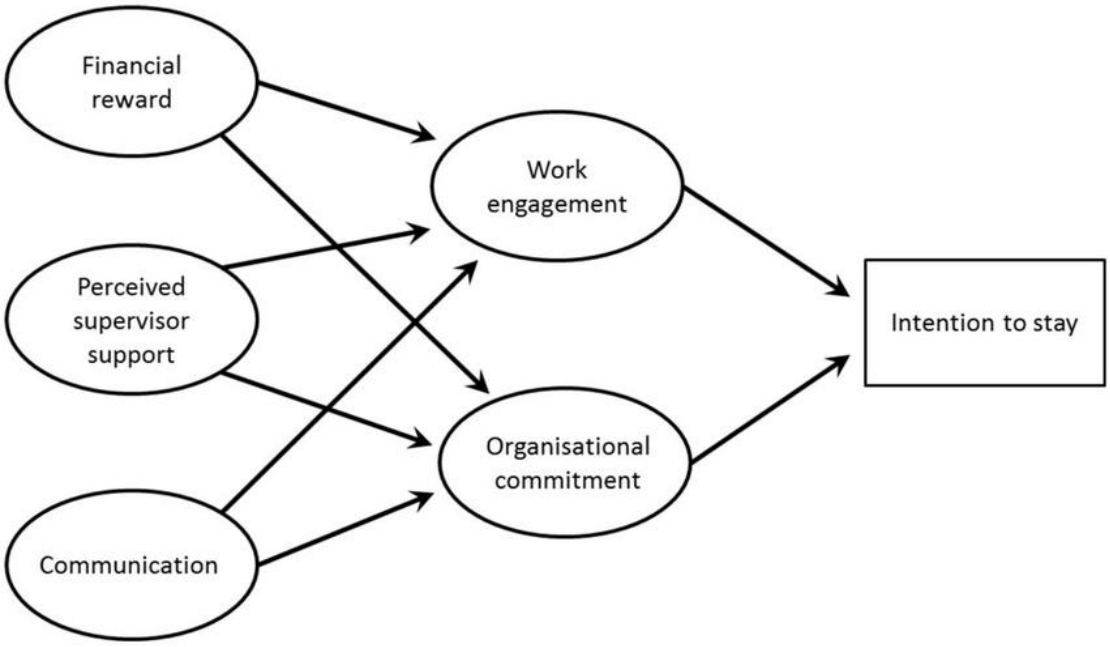

Figure 2: Social exchange theory

Educational leadership plays a critical role under SET by establishing governance structures that ensure equitable exchanges. Deans and program directors create forums (joint committees, advisory boards) where industry input is transparently integrated into curriculum decisions and resources (time, money, equipment) are allocated fairly. For example, an engineering school and a manufacturing firm might agree that each invests equally in a new lab; clear communication about this arrangement builds confidence on both sides (MacDonald et al., 2022). Leaders must balance academic standards with practical relevance so that neither partner feels shortchanged. Empirical studies show that when partnerships exhibit high levels of trust and reciprocity, they report better outcomes: Programs have higher completion rates and students are placed more easily in jobs (Manzoor et al., 2019).

Social exchange theory also underscores the need for ongoing communication and coordination. Even with initial goodwill, partnerships can falter if one side feels the exchanges have become unbalanced. For instance, if an industry sponsor perceives that the university is not fully sharing research results, or if academics feel that their workload is unfairly increased, motivation can wane. Educational leaders mitigate this by fostering open dialogue (e.g., regular meetings and feedback loops) and ensuring transparency in decision-making. As one study has observed, clear and continuous communication channels "build and maintain trust", which is essential to long-term collaboration (Boyd, 2021; Grant, 2024). In sum, SET highlights that reciprocity and trust, facilitated by effective leadership, form the relational bedrock of successful educational partnerships (Kim et al., 2018).

2.3 Resource-Based View

The RBV (Figure 3) examines how an organization's unique assets and capabilities generate a competitive advantage. In this framework, resources include tangible items (labs, technology) and intangibles (reputation, human expertise), while capabilities are organizational routines and skills for deploying those resources (Adnan et al., 2018). The RBV holds that only valuable, rare, inimitable resources lead to sustained performance. Applied to cross-sector collaboration, universities and industries combine their distinct resources (e.g., faculty know-how, proprietary technologies) to achieve innovation and workforce goals (Adeyinka-Ojo, 2018; Sheridan & Fallon, 2018).

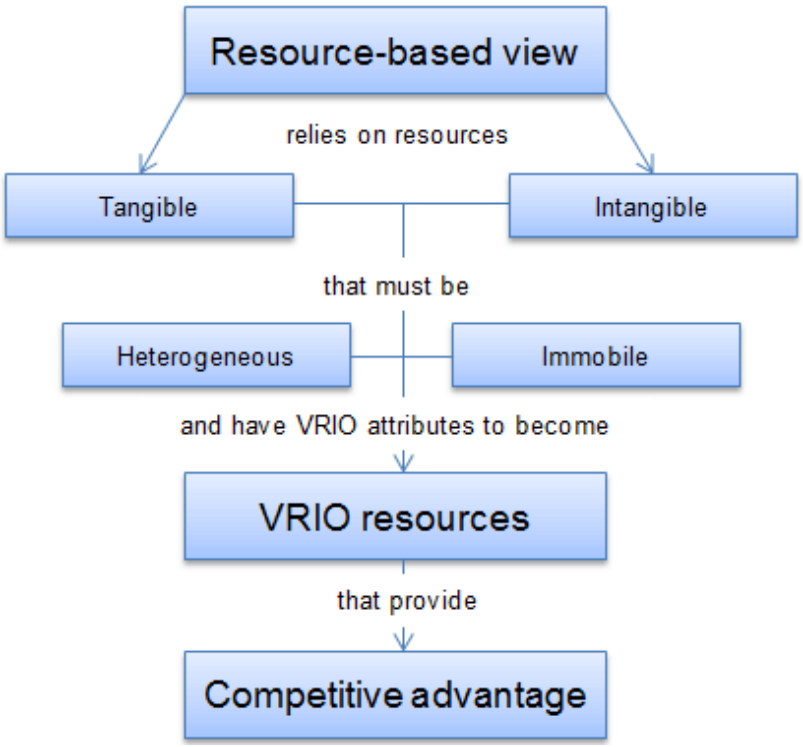

Figure 3: Resource-based view (VRIO = value, rarity, imitability, and organization)

From an educational leadership perspective, the RBV highlights collaborative competencies as strategic capabilities. Leadership skills in communication, shared decision-making, and project coordination can be viewed as organizational processes that set some institutions apart (Vasudevan, 2021). Such relational capabilities are often "socially complex and path-dependent", meaning they evolve over time and are hard for competitors to replicate. For example, a university that systematically builds strong ties with local industry, say, through recurring co-op programs and joint seminars, may develop a reputation and know-how that others lack. This embedded practice becomes a resource: Graduates from that university may be perceived as more "industry-ready", giving the institution an edge in attracting talent and funding (Patnaik et al., 2022).

The RBV also flags potential pitfalls. If a university and company have misaligned cultures or goals, the theoretically valuable partnership may yield little advantage. Consider a vocational college that prides itself on academic rigor, collaborating with a fast-paced tech firm: Without effective leadership to bridge these differences (e.g., through clear communication and conflict management skills), the alliance could falter despite shared resources. Thus, the RBV suggests that educational leaders must not only accumulate resources (labs, curricula, funding) but also cultivate intangible capabilities, notably in collaboration, that enhance and protect the value of those resources (Arik & Dunne, 2014).

2.4 Collaboration Theory

Collaboration theory and related frameworks integrate the above views to explain how organizations coordinate to achieve shared goals. Gray (1999) defined *collaboration* as stakeholders engaging in a shared vision or problem-solving process across boundaries, while Wood and Gray (1991) emphasized features such as voluntary participation, joint decision-making, and equitable power relations. In industry–higher education partnerships, this theory highlights processes of negotiation, planning, and action – for example, how universities and companies co-create curricula, or how committees are formed to steer joint programs.

Educational leaders are central in operationalizing these processes. Collaboration theory notes that industry partners often focus on agility and productivity metrics, whereas academic institutions emphasize pedagogical integrity and accreditation standards. Leaders must therefore harmonize divergent agendas. For instance, academic administrators might form cross-sector working groups where faculty and engineers jointly define course outcomes that satisfy both educational rigor and practical skills needs (Di Domenico et al., 2009).

Effective collaboration also depends on robust communication and norms of accountability. Leaders set up the "channels" (regular meetings, shared platforms) through which expectations are clarified, and responsibilities are delineated. They also establish structures, such as partnership agreements or steering committees, that make all parties accountable for agreed-upon goals (Wübbeke et al., 2016).

A key insight from collaboration theory is its emphasis on the long-term process. While short-term project outcomes are important, true collaboration creates a foundation for ongoing joint work. For workforce development, this means one successful training program can lead to new initiatives, creating a virtuous cycle of innovation. Wood and Gray (1991) argued that effective collaborations become self-sustaining communities of practice, where mutual learning continues even after initial goals are met. This perspective aligns closely with the needs of reskilling/upskilling, which often require continuous adaptation to new technologies.

In summary, no single theory fully captures the dynamics at play. Human capital theory explains why educational investment is needed, but not how cross-sector team's function. Social exchange theory stresses the importance of trust and reciprocity, while the RBV directs attention to unique institutional capabilities (Diaz-Delgado et al., 2020). Collaboration theory ties these strands together by focusing on shared processes and structures. Together, these frameworks "provide different yet complementary lenses" on industry–education collaboration (Seshadri, 2013). They suggest that collaborative competencies, that is, communication, engagement, and coordination, are the key mediators translating leadership and resources into skills gains (Figure 4). This theoretical synthesis will guide the review of specific partnership cases and outcomes in the sections that follow.

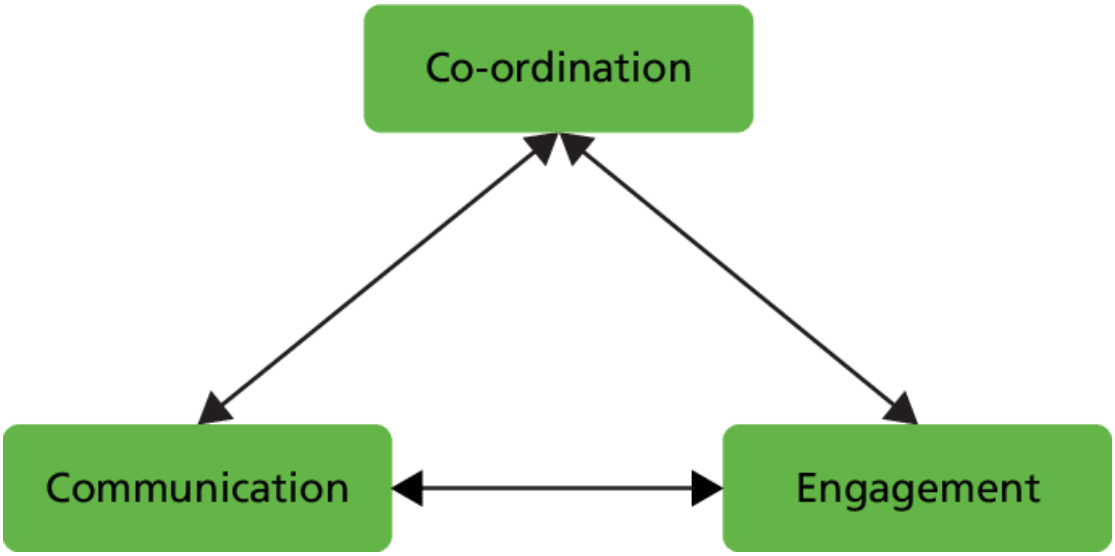

Figure 4: Collaboration theory

3. Industry–Higher Education Partnerships

3.1 Historical Development and Typologies

University–industry partnerships have evolved considerably. In the early stages, collaborations were largely unidirectional: Universities conducted basic research and development (R&D) and shared findings with industry for commercialization. Educational leaders mainly facilitated access to campus labs and expertise, with a limited role in shaping research agendas. Over time, however, the model became interactive (Sjöö & Hellström, 2019). By the 2000s, firms began funding research

projects and influencing research directions through joint ventures and technology transfer offices. Administrators responded by adopting more entrepreneurial and boundary-spanning roles, helping bridge academic and business goals (Bruneel et al., 2010).

A pivotal change came with Etzkowitz's (2002) triple helix model, which posits that universities, industry, and government should all be active partners in innovation. This framework "redefined" collaborations: Instead of linear knowledge flows, all three sectors were seen as co-creators and co-beneficiaries of innovation. Educational leaders thus became architects of multi-party governance structures (Nsanzumuhire & Groot, 2020).

For example, universities started hosting joint steering committees with government R&D agencies and corporate sponsors, ensuring that curricula and research agendas aligned with national innovation strategies. In countries such as China and Malaysia, government policies explicitly encourage this ecosystem approach. Chinese and Malaysian universities now often serve as knowledge brokers, strategically linking state-led industrial priorities with academic programs.

In the current era, partnerships extend well beyond R&D. Higher education–industry linkages now frequently focus on workforce development and skills training. Universities collaborate with companies to co-design courses, offer internships, and deliver continuing education that directly addresses labor-market skills gaps. For instance, engineering faculties might integrate company case studies into classes and jointly supervise industry-sponsored capstone projects.

Plewa et al. (2013) observed that the goal has shifted from mere knowledge exchange to "continuous learning and adaptation" – effectively building human capital via symbiotic collaboration. As a result, educational leaders today devote much effort to curriculum innovation, pedagogical agility, and organizational strategies (e.g., flexible degree requirements) that support rapid knowledge transfer and skills development.

3.2 Critical Success Factors

Empirical studies have identified several key factors that determine the effectiveness of industry–higher education collaborations, with leadership as the linchpin. First, trust is indispensable. When universities and companies trust each other, they freely share proprietary information, training materials, and strategic vision, which fuels innovation. Educational leaders build this trust by being transparent and consistent, for example, by honoring agreements on intellectual property or following through on promised resources. In volatile, cross-cultural settings (e.g., partnerships involving foreign institutions), trust acts as a stabilizing mechanism that mitigates uncertainty, reduces perceived risks, and facilitates open communication among stakeholders (O'Dwyer et al., 2023).

Second, top leadership support from both sides is vital. High-level commitment (from university presidents, deans, and corporate executives) ensures that partnerships get the resources and priority they need. Such support provides legitimacy; when senior academic leaders champion an initiative, faculty and staff treat it as an institutional priority. It also helps reconcile cultural differences: For instance, Gill and Butler (2003) noted that senior sponsors are especially important in bridging divergent organizational norms in cross-border partnerships. Educational leaders who personally engage in partnership governance can more effectively navigate conflicts and align objectives.

Third, resource allocation must be handled strategically. University managers decide how to deploy limited budgets, lab space, faculty time, and technology equipment to support collaboration. Successful partnerships typically feature well-planned resource sharing: For example, universities may provide equipment and faculty time, while companies offer funding and industry-lab access. Leaders must balance many demands to ensure that joint programs are adequately staffed and equipped. When done well, resource interdependency can reinforce trust (as each side sees the other's genuine commitment). Notably, in China and Malaysia, these leaders must align resources with national initiatives: Chinese universities often allocate funds to programs that support "Made in China 2025" industry priorities, whereas Malaysian colleges may access public–private grants, such as the Human Resources Development Fund.

Finally, communication is crucial. Partnerships involve stakeholders with different languages (literally and figuratively) and expectations. Leaders must establish continuous, transparent communication channels so that information flows freely. For example, faculty meetings, joint workshops, and digital collaboration platforms help keep everyone on the same page. Clear communication allows universities to translate industry needs into academic terms and companies to understand academic constraints.

Gill and Butler (2003) stressed that ongoing dialogue is needed to maintain trust in culturally diverse alliances. Effective communication protocols (e.g., regular reporting schedules) help manage conflicts and keep partnership goals aligned. In summary, trust, leadership backing, smart resource decisions, and open communication – all enabled by proactive educational leadership – are the cornerstones of successful education–industry partnerships.

3.3 Cross-Cultural Dimensions

Context matters in partnerships. Cultural norms in China and Malaysia shape how collaborations unfold. In China's culture of guanxi (strong personal networks), relationships and trust are built gradually before formal agreements are made. Chinese educational leaders therefore invest time in long-term relationship-building (e.g., dinners, informal visits) before accelerating joint projects. This often leads to slower initial decision-making but results in enduring commitment once trust is established. In contrast, Malaysia's multicultural environment (with Malay, Chinese, Indian communities) means educational leaders must be adept at multicultural communication. They navigate diverse

expectations – for example, adjusting negotiation styles and communication to accommodate different cultural attitudes. Malaysian partnerships can benefit from this diversity (bringing multiple perspectives) but also face coordination challenges if communication and cultural understanding are weak (Lick & Bakar, 2021).

Policy differences also influence partnerships. China's government plays a leading role in directing collaboration. National strategies such as "Made in China 2025" (a state-led initiative) emphasize R&D in high-tech industries. Chinese universities align their programs and resources with these centralized goals; educational leaders often work within top-down governance to implement workforce development initiatives. Malaysia, on the other hand, emphasizes more decentralized public–private cooperation. Its Industry4WRD policy encourages broad-based upskilling (especially in digital skills) through grants and incentives for university–industry projects. Malaysian leaders, operating in a more market-oriented environment, must balance inputs from local industries, multinational firms, and regional development agencies (Gill & Butler, 2003).

Global initiatives also shape partnerships. China's Belt and Road Initiative (BRI) has spurred collaborations between Chinese institutions and foreign universities (including in Malaysia) to transfer knowledge and build skills in BRI-related industries. Malaysian leaders engaging in BRI projects, however, must reconcile these collaborations with domestic priorities. They need diplomatic skills to negotiate international programs while serving national interests (Lick & Bakar, 2021).

In sum, the context of China versus Malaysia reveals contrasts in scale and approach. China's top-down, collectivist model produces large-scale, nationally aligned projects but may stifle local flexibility. Conversely, Malaysia's inclusive, consensus-driven model yields adaptive partnerships but requires more intercultural coordination. These differences affect how educational leaders set goals, allocate resources, and implement joint programs. It follows that successful partnerships must be tailored to national contexts, leveraging local governance structures and communication norms.

4. Educational Leadership and Collaborative Competencies

4.1 Decision-Making Structures

The governance model of an educational institution heavily influences how industry-linked programs are created and run. In distributed or participatory structures (shared governance), multiple stakeholders – for example, faculty, administrators, industry reps (and sometimes students) – have formal input on program design. Research has found that these inclusive models tend to produce more responsive and innovative programs. For example, Wang (2023) observed that Chinese universities using inclusive decision processes in industry collaborations saw higher curricular innovation and graduate employability. The idea is that when authority is shared, educators can draw on diverse expertise to tailor reskilling courses to market needs.

By contrast, centralized decision-making (hierarchical models) offers consistency and quick action. If a university's vice-chancellor or a government body sets a strategy, programs across the system may maintain uniform quality (Shepherd, 2018). For instance, Malaysia standardized technical education through ministerial oversight. However, this can reduce agility, as centralized systems may be slower to adapt niche programs to local industry demands (Azkiya & Wandebori, 2025). Context again matters. Leaders must balance academic autonomy with industry input.

As noted, administrators act as "boundary-spanners", building governance that respects academic values while giving industry a voice. In China's centralized environment, decision-making processes may default to formal procedures, whereas Malaysian institutions often allow more local committee input. Many scholars have recommended an evolving approach: Start with some central guidance to launch a partnership, then gradually devolve authority as trust and experience grow (Eddy & Amey, 2023; Waddock, 1989). In this way, initial hurdles are cleared efficiently, and later phases benefit from broader buy-in.

To conclude, decision-making structures shape reskilling outcomes. Adaptive leaders will match governance to partnership maturity – using hierarchical models to establish programs quickly, then opening decision-making processes as collaborations deepen. Whether distributed or centralized, the key is that leaders consciously configure decision rights (who decides what) to ensure academic standards and industry relevance are both met.

4.2 Curriculum Development Processes

How programs are designed and updated is another crucial leadership domain. Competency-based curricula have been especially effective in upskilling contexts. Here, leaders work with industry to identify specific skills needed in the workforce and then design courses around those competencies. For example, technical universities in China now routinely solicit employer feedback in curriculum cycles; one study noted that incorporating regular industry input helped align graduate skills with employer expectations (Azevedo et al., 2012; Jackson, 2015). In contrast to traditional lecture formats, competency models make learning outcomes transparent and directly tied to job tasks.

Another trend is experiential and work-integrated learning. Educational administrators implement internships, co-op placements, and project-based learning embedded in real workplaces. Research (Mitchell et al., 1994) has shown that when students engage in authentic industry projects, they not only acquire technical skills faster but also develop the very collaborative competencies (communication, teamwork) that employers value. Leaders facilitate this by establishing systems (e.g., internship offices, lab partnerships) that integrate academic study with on-the-job learning. These initiatives strengthen the connection between theory and practice, making the upskilling program more effective.

Curriculum agility is also important (Brink et al., 2021). Traditional development cycles (often multi-year) can be too slow for fast-changing industries. Some institutions have created rapid-approval tracks or modular certificates to respond quickly to new skills needs (Amarakoon et al., 2021). For instance, universities that set up specialized curriculum teams with authority to expedite vocational modules found that they could update content in months instead of years (United States Department of Education, 1993).

In leadership terms, this reflects empowering dedicated teams and streamlining bureaucratic steps. Technology integration is another leadership role in the curriculum. By creating policies and frameworks for adopting new instructional technologies (e.g., learning platforms, simulation software), leaders ensure that digital skills are embedded in courses (Abrahams, 2010; Reid, 2014). As digital transformation accelerates across sectors, systematically including tech use in training helps students stay current with industry practices.

4.3 Resource Allocation Approaches

Educational leaders' decisions about resources, funding, facilities, and personnel critically affect program success. Strategic funding allocation means matching investments with clear workforce objectives. Leaders who adopt transparent prioritization processes tend to sustain partnerships longer. For example, Mitchell et al. (1994) found that institutions with formal ROI evaluation metrics for industry programs had more consistent outcomes. ROI in this context refers to the systematic assessment of the benefits derived from partnership initiatives relative to the financial, human, and institutional resources invested. This might involve setting up review committees that allocate a budget based on criteria such as expected skills-gap impact or enrollment growth.

Diversifying revenue streams has also been emphasized. Rather than relying on a single source, leaders often develop a portfolio of funding – government grants, industry sponsorships, tuition, and competitive awards. Research has shown that such diversification insulates programs from fluctuations (Mitchell et al., 1994). For cross-border or multi-sector partnerships, this is crucial: If, say, a government funding line is cut, having industry or international grants can keep the training running. Leaders also invest in specialized facilities and technology as learning resources.

Building simulation labs, maker spaces, or advanced workshops gives students hands-on experience with industry-standard tools. Chinese vocational colleges, for example, have prioritized high-tech labs aligned with manufacturing goals, which has in turn deepened industry ties and improved graduate employment outcomes. Similarly, Malaysian universities have created tech parks adjacent to campuses, enabling companies to use university equipment and jointly train students. Allocating such facilities requires foresight by administrators to match infrastructure with partnership needs.

Finally, human resources are important. Leaders create incentive structures for faculty to engage with industry. This might include recognition in promotion

criteria for industry collaboration or assigning dedicated partnership roles (e.g., industry liaison officers). Research has indicated that when universities reward lecturers for co-teaching with industry or supervising internships, faculty participation in joint programs increases. By strategically allocating people, not just money, leaders build capacity for collaboration (Buckingham et al., 2021; Cordie et al., 2020).

While allocating human resources is an important step in building leadership capacity, it is equally important to recognize that financial investment, training programs, and other forms of support are essential in motivating leaders and ensuring their continued focus and effectiveness in executing tasks (Hitt & Duane, 2002). Financial compensation provides leaders with security, allowing them to maintain focus on their responsibilities while ensuring their personal and professional well-being.

Contextual differences are also relevant. In China, centralized funding (e.g., national development grants) often finances large-scale training hubs, though this can be inflexible. Malaysian institutions, by contrast, may rely more on private co-investment and cost-recovery models, requiring leaders to emphasize industry partnerships and revenue generation. These variations influence how resources are mobilized. Effective educational leadership thus aligns funding models and investments with both national priorities and local industry dynamics.

4.4 Collaborative Competencies in Partnerships

4.4.1 Communication skills

Clear, open communication is the cornerstone of any partnership. Within university–industry collaborations, leaders must convey complex academic concepts in ways that non-academics can understand and likewise translate industry needs into actionable curriculum terms. Studies show that effective communication builds trust and ensures alignment among stakeholders. In practice, this means scheduling regular dialogue (meetings, reports) and leveraging multiple channels (Huxham & Vangen, 2013).

Educational leaders also use communication to bridge cultural and organizational gaps. When universities (academic language, peer review culture) partner with companies (business jargon, efficiency focus), misunderstandings can arise. Researchers such as Aunger (2020) and Zahoor and Al-Tabbaa (2020) emphasized that skilled communicators on both sides help navigate these divides.

For instance, a dean may organize bilingual workshops or cross-training sessions so faculty grasp industry terminology and vice versa. Leaders who establish clear feedback loops allow for iterative improvement: Industry can clarify what skills it needs in graduates, and educators can adjust content accordingly. Beyond information exchange, communication in educational partnerships builds relationships and resolves conflict. Proactive communicators anticipate issues (like scheduling clashes) and set up protocols to handle them.

In sum, communication competency means not only transmitting information, but also listening, interpreting, and nurturing the interpersonal fabric of the collaboration. Leaders who model transparent, frequent communication set the tone for a cooperative culture across the partnership.

4.4.2 Shared decision-making

Shared governance processes are another key competency in educational partnerships. This involves creating structures in which stakeholders collectively set goals, design curricula, and make implementation choices. Research suggests that when universities involve industry representatives (and sometimes learners) in decision bodies, outcomes improve. Kolleck et al. (2020) found shared decision-making to be a strong predictor of success, especially when partners have different priorities. By pooling perspectives, teams can co-create solutions that balance pedagogical rigor with practical utility.

Co-creation of the curriculum is a concrete example of this competency. Educational leaders might organize joint workshops where faculty and engineers collaboratively draft course modules (Aunger et al., 2024). This ensures that the final program meets accreditation standards while covering the latest industry practices. Such inclusive processes also foster stakeholder commitment. If a company helped decide the learning outcomes, it is more likely to value and support the program. Ansell and Gash (2008) argued that accountable, transparent shared decisions lead to better alignment between academic standards and workforce needs.

Importantly, shared decision-making is not limited to the curriculum. It also pertains to the governance of the partnership itself. Educators often co-establish partnership charters or committees where all parties have voting rights on funding use, evaluation metrics, etc. Leaders skilled in this competency know how to facilitate inclusive meetings and manage potential conflicts. The upshot is that shared decision-making turns a partnership into a joint venture, with each side invested in the outcome, rather than a client–provider relationship.

4.4.3 Project coordination

Effective project coordination is the ability to organize, manage, and align resources and tasks to meet program goals. In the context of reskilling initiatives, this means overseeing all moving parts, course schedules, faculty assignments, lab reservations, and industry inputs, so that the training runs smoothly and on time. Educational leaders with strong coordination skills often have project management training or support.

Coordination also involves aligning goals at each stage. For example, Kolleck et al. (2020) emphasized that setting clear, common objectives at the outset of a project (coordinated by leaders) helps keep teams on track. Digital tools can facilitate this: Learning management systems and shared platforms allow faculty and industry mentors to update progress, assign tasks, and track outcomes remotely. Somanathan (2023) highlighted that technology-enhanced coordination is increasingly crucial, especially for international collaborations.

Different types of educational projects demand specific coordination approaches. Interdisciplinary programs, for instance, require leaders to schedule and integrate input from diverse departments and external partners. Chandrasekaran et al. (2013) proposed frameworks for coordinating such projects. Educational leaders who refine this competency ensure that logistical details do not derail learning: they set realistic timelines, define roles (e.g., industry liaison, student mentors), and maintain oversight of deliverables.

In practice, strong coordination competency means that an upskilling program stays within budget and schedule, while also remaining responsive to feedback. It keeps the partnership "focused and organized" from start to finish. When educational leaders excel at coordination, they make it possible for complex, multi-stakeholder initiatives to succeed even across institutional boundaries.

4.4.4 Importance of collaborative competencies

In summary, the literature has consistently found that communication, shared decision-making, and project coordination are not just useful but predictive of partnership success. Leaders who cultivate these competencies create the conditions under which educational partnerships can deliver effective workforce training. When communication is open, decisions are inclusive, and projects are well-coordinated, both universities and companies are more likely to realize their goals (e.g., higher student outcomes, innovation). Conversely, deficits in any of these areas can undermine collaborations despite strong theories or resources.

Managing diverse perspectives from various stakeholders requires structured methodologies such as regular communication, collaborative decision-making platforms, and clear guidelines for prioritizing differing interests. Stakeholder engagement techniques, including consensus-building and conflict resolution strategies, are crucial to ensure that all viewpoints are considered and integrated into a single, coherent decision-making process. The comparative significance of collaborative competencies across China and Malaysia lies in their distinct political and cultural contexts.

In China, where centralized governance prevails, collaborative competencies often focus on institutional alignment and top-down decision-making. In contrast, Malaysia's more decentralized and multi-stakeholder framework emphasizes negotiation and consensus-building. These differences underscore the need for context-specific leadership strategies and collaborative approaches. Thus, strengthening collaborative competencies is a key task for educational leadership in reskilling and upskilling initiatives.

5. Reskilling/Upskilling Outcomes and Comparative Analysis

5.1 Reskilling and Upskilling Outcomes: Completion Rates, Skills Acquisition, and Employment Impact

Reskilling and upskilling programs are typically evaluated through multiple complementary metrics. For example, program **completion rates** are often reported alongside learning outcomes (Jagannathan, 2021). In practice, targeted workforce training initiatives achieve much higher completion rates than open-

enrollment online courses; one provider has even cited an "80% program completion rate". Alongside attendance, many initiatives define clear **skills-acquisition benchmarks** to ensure participants truly learn the intended competencies (Curtis et al., 2024). This can take the form of required certifications or assessed competencies: Industry experts recommend embedding "skills-acquisition benchmarks" (e.g., passing specific assessments or earning credentials) into program designs so that learning gains are measured explicitly (Figure 5).

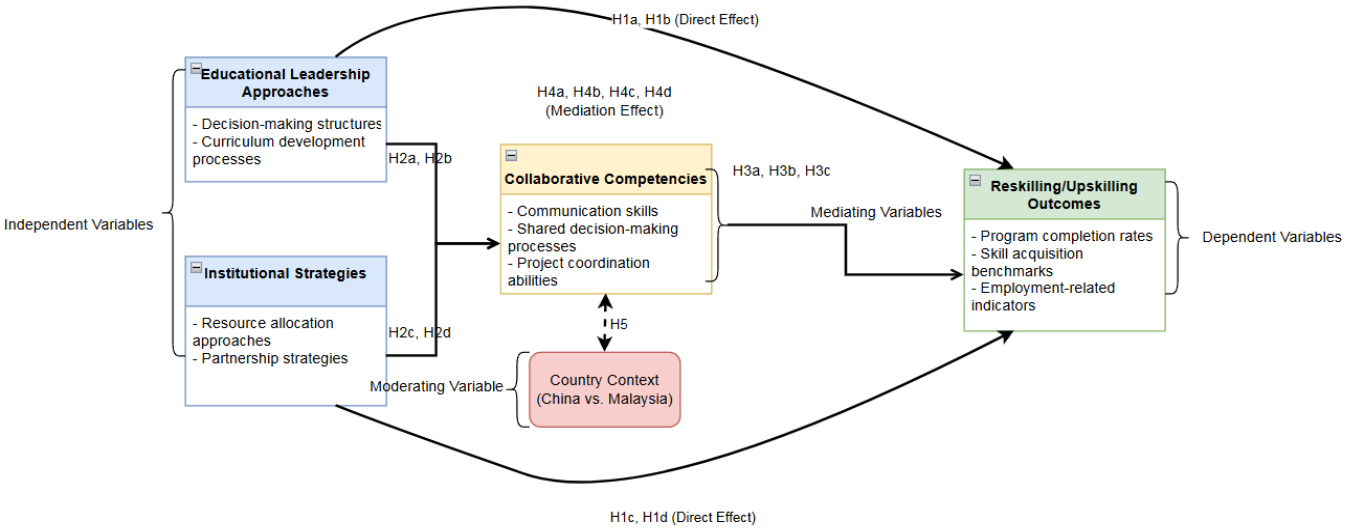

Figure 5: The conceptual framework

Equally important are employment-related outcomes (Damianidou et al., 2019). Upskilling programs routinely track post-training job placement and career advancement as key success indicators. As one expert review notes, post-program employment rates, the percentage of graduates securing jobs in target fields, and subsequent promotions or salary gains are critical measures of effectiveness. In fact, real-world upskilling initiatives report very high placement rates:

For instance, an internal Amazon IT training program saw "80% of participants transition into new technical roles" immediately after completion, and a separate Amazon technical academy placed "95% of its graduates" into software engineering positions (Patel, 2023). These high placement figures often accompany substantial economic benefits for learners. The same studies reported dramatic increases in earnings. For example, one provider observed "68% higher wage gains" for trained employees, while Amazon's program graduates earned on average "93% higher" compensation post-training (Donovan & Bradley, 2018; Francis et al., 2002).

By weaving together these strands – high completion rates, rigorous skills attainment benchmarks, and strong employment outcomes – the literature shows that effective upskilling initiatives not only retain learners through program completion but also demonstrably improve their skills and career prospects.

5.2 Comparative Analysis

A cross-national perspective highlights how different contexts affect these partnerships (Hinds et al., 2011). Both China and Malaysia urgently prioritize reskilling/upskilling to remain competitive, but their strategies differ. China's approach is top-down and state-led: Its "Made in China 2025" initiative drives universities to focus on advanced manufacturing and high-tech skills (Wübbeke et al., 2016).

Educational programs are often designed to fit national innovation goals, with substantial government funding and mandates that guide curriculum content. In contrast, Malaysia's Industry4WRD framework emphasizes decentralized public–private partnerships. Malaysian policies provide tax incentives and training grants to link a broad range of industries with universities. This inclusive approach encourages regional collaboration and adapts to diverse sectoral needs (AlAfnan & MohdZuki, 2024; Azhar et al., 2018).

Culturally, China's collectivist norms encourage long-term, centralized collaborations (Ma et al., 2014). Trust-building (guanxi) underpins partnerships, and institutional structures align closely with national priorities. In Malaysia's multicultural setting, by contrast, partnerships often bring together stakeholders with varied communication styles and objectives (Balakrishnan, 2022). Decision-making tends to be more consensus-driven, reflecting a need to accommodate different cultural values. These differences manifest in outcomes: Chinese initiatives often deliver large-scale programs that achieve consistent technical standards, whereas Malaysian programs may pilot more niche or adaptive projects tailored to local industries (Ukoba et al., 2024).

Importantly, comparative research has found that despite these differences, the mediating role of collaborative competencies remains consistent. According to Lee and Bruvold (2003), in both countries, shared decision-making mediates how governance structures translate into curriculum relevance. In other words, even though Chinese and Malaysian universities use different governance models, in each context, it is how they engage partners (the collaboration process) that determines success. This underscores that while policy and culture shape the form of partnerships, the fundamental leadership skills (communication, coordination, inclusion) that drive effective reskilling are universally important.

Reskilling refers to the process of teaching workers new skills to enable them to transition into a different role or industry, while upskilling involves enhancing existing skills to improve performance within a current role (Rangraz & Pareto, 2021). The distinction between these two concepts is critical, as each addresses different aspects of workforce development. This research is significant, as it provides insights into how educational leadership can support both reskilling and upskilling initiatives, ultimately contributing to workforce adaptability and economic resilience.

In summary, China and Malaysia's contrasting approaches reveal valuable insights. China's centralized system can mobilize resources at scale but may limit

flexibility, making strong leadership and collaboration skills essential to adapt programs to on-the-ground needs. Malaysia's decentralized model relies on leaders' ability to orchestrate diverse stakeholders, highlighting the need for intercultural communication and network-building skills. These lessons suggest that effective reskilling strategies must align with national contexts while investing in the same core collaborative capacities.

6. Conclusion

This review highlights that multiple theoretical lenses and empirical findings converge on a key insight: Educational leadership and collaborative competencies jointly determine the success of industry-linked reskilling/upskilling programs. Human capital theory clarifies why investment in education is needed, while SET emphasizes trust and reciprocity in partnerships. The RBV shows that unique institutional assets, including leaders' collaboration skills, are critical, and collaboration theory integrates these, focusing on shared processes and governance.

Taken together, these theoretical perspectives and empirical findings suggest a conceptual model: Leadership approaches (decision-making structures, curriculum processes) and institutional strategies (resource allocation, partnership mechanisms) build collaborative capacities (communication, shared governance, coordination), which in turn drive skills outcomes. The empirical evidence strongly supports this mediation perspective: Educational leadership affects program effectiveness primarily through its impact on collaborative dynamics.

Cross-national comparisons underscore that the form of partnerships varies with context, but the mechanisms are similar. In every setting, leaders who systematically cultivate communication and coordination create the conditions for educational programs to translate into workforce competencies. Therefore, policy and practice should emphasize leadership development as much as curriculum content. Investing in leaders' collaborative skills and tailoring partnership governance to the institutional environment will enhance program completion, learning, and employment outcomes.

In sum, a holistic approach grounded in theory and informed by comparative evidence provides a framework for future research and practice. As the literature suggests, focusing on the interaction between leadership, institutional strategy, and relational competencies offers the most promising path to sustain industry–higher education collaborations that deliver meaningful reskilling results.

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