Iranian Journal of Educational Sociology

Journal Website

Article history:
Received 08 April 2026
Revised 20 September 2026
Accepted 27 September 2026
Initial Publication 27 September 2026
Final Publication 01 November 2026

Iranian Journal of Educational Sociology

Volume 9, Issue 6, pp 1-15

Quarterly Iranian Journal of Educational Sociology

E-ISSN: 2645-3460

Identification of the Components of a Public–Private Partnership Model for Employment Enhancement in a Skill-Based Education System: A Qualitative Study in the Iran Technical and Vocational Training Organization

Jalil. Shahriari[1], Shiva. Madahian[2*], Alireza. Peyvand[3], Sanjar. Salajegheh[2]

[1] PhD Student, Department of Management, Ke.C., Islamic Azad University, Kerman, Iran
[2] Department of Management, Ke.C., Islamic Azad University, Kerman, Iran
[3] Department of Psychology, Ke.C., Islamic Azad University, Kerman, Iran

*** Corresponding author email address**: shivamadahian@iau.ac.ir

Article Info

Article type:
Original Research

How to cite this article:
Shahriari, J., Madahian, S., Peyvand, A., & Salajegheh, S. (2026). Identification of the Components of a Public–Private Partnership Model for Employment Enhancement in a Skill-Based Education System: A Qualitative Study in the Iran Technical and Vocational Training Organization. *Iranian Journal of Educational Sociology*, *9*(6), 1-15.
https://doi.org/10.61838/kman.ijes.1574

© 2026 the authors. Published by Iranian Association for Sociology of Education, Tehran, Iran. This is an open access article under the terms of the Creative Commons Attribution-NonCommercial 4.0 International (CC BY-NC 4.0) License.

ABSTRACT

Purpose: The present study aimed to identify and explain the dimensions, components, and indicators affecting public–private partnership (PPP) in enhancing employment within a skill-based education system, with particular emphasis on the Iran Technical and Vocational Training Organization.

Methodology: This study adopted a qualitative approach using thematic analysis and the logic of grounded theory. The participants included experts, managers, academics, private-sector practitioners, industry representatives, and specialists in vocational and skills training, employment, and public–private partnerships, who were selected through purposive sampling. Data were collected through document analysis and semi-structured interviews, and the interview process continued until theoretical saturation was achieved. The resulting data were analyzed through three stages of open, axial, and selective coding.

Findings: The findings indicated that the skill-based education system faces structural and institutional, infrastructural and educational, legal and governance, economic and financial, labor-market and employment, and public–private partnership challenges. Within the paradigmatic model, "transformation of the vocational skills training system based on participatory governance and public–private partnership with a demand-driven approach" was identified as the central phenomenon. The principal strategies of the model included participatory governance, demand-driven training, delegation of executive functions, decentralization, trust-building, continuous skills needs assessment, and the design of customized training programs.

Conclusion: The results demonstrated that public–private partnership is not merely a financing instrument but rather an institutional and governance model for linking government, industry, the private sector, training centers, and the labor market. Implementation of this model can contribute to enhanced employability, entrepreneurship development, human resource empowerment, and a reduction in the gap between education and employment.

Keywords: *public–private partnership, skill-based education, employment enhancement, participatory governance, employability.*

1. Introduction

The accelerating transformation of labor markets, production systems, and organizational structures has intensified the strategic importance of skill development as a central component of employment policy and economic competitiveness. Contemporary economies increasingly require workers who are not only technically competent but also adaptable, digitally literate, capable of continuous learning, and responsive to rapidly changing occupational demands. Technological change, automation, artificial intelligence, platform-based employment, and the reconfiguration of conventional career structures have made the relationship between education and employment increasingly dynamic rather than linear. As technological change alters occupational tasks and shortens the life cycle of many job-specific competencies, individuals are expected to develop transferable and adaptive skills that enable them to move across jobs, sectors, and forms of employment (George, 2023). This transformation has placed considerable pressure on educational and vocational training systems to move beyond traditional supply-driven models and establish more responsive mechanisms for identifying emerging skills, updating curricula, and linking training provision with actual labor-market demand. Evidence from vocational education systems also indicates that simply expanding participation in vocational education does not necessarily resolve skilled labor shortages if the content and orientation of training remain disconnected from employers' real requirements (Song & Xu, 2024). Consequently, improving the effectiveness of skill-based education requires institutional arrangements capable of connecting public policy, education providers, private enterprises, employers, and labor-market actors within an integrated framework.

Technical and vocational education and training constitutes one of the most important institutional mechanisms through which governments can strengthen human capital, facilitate school-to-work transitions, improve occupational mobility, and enhance employability. However, the effectiveness of vocational education depends substantially on the extent to which training content corresponds to the competencies required in contemporary workplaces. Employability is increasingly understood as a multidimensional capability involving technical knowledge, interpersonal and cognitive competencies, adaptability, career-management capacity, and the ability to respond constructively to changing employment conditions. Research has shown that employability skills contribute to individuals' capacity to adjust to career transitions and changing occupational environments (Koe, 2022). At the same time, uncertainty concerning employment opportunities can generate considerable psychological pressure among students and graduates, particularly where educational credentials do not provide a clear pathway into employment (Belle et al., 2022). These conditions demonstrate that skill development cannot be considered independently of broader employment systems. Training programs must be designed not merely to provide certificates or formal qualifications but to generate competencies that improve individuals' capacity to secure, retain, and develop sustainable employment.

The relationship between education and occupational choice is also influenced by social, cultural, institutional, and family factors. Career trajectories are shaped not solely by labor-market opportunities but by the interaction between personal aspirations, educational experiences, social expectations, and public policy. Studies of students' career preferences have demonstrated that social, cultural, and science-related factors can significantly influence career orientation and the pathways through which individuals enter particular occupational fields (Mansour, 2025). Similarly, research examining the transition pathways of younger generations indicates that families, educational institutions, and the state jointly contribute to defining educational and occupational opportunities and expectations (Arar et al., 2025). Educational relationships themselves can also influence students' engagement, identity formation, and learning experiences, highlighting the importance of supportive instructional environments in developing professional capability (Katsogridakis & Leather, 2025). Moreover, inequalities in access to educational and extracurricular opportunities may produce differentiated advantages in educational and occupational progression (Park et al., 2023). These findings reinforce the need for skill-development policies that recognize employability as an outcome of interconnected educational, institutional, social, and economic processes rather than as the responsibility of trainees alone.

One of the most important mechanisms for strengthening the relationship between vocational education and employment is systematic collaboration between educational institutions and industry. Industry partnerships can provide training institutions with direct information about occupational standards, technological change, emerging skill requirements, and workplace expectations. Such collaboration can also facilitate curriculum

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

development, work-based learning, apprenticeships, internships, instructor development, equipment upgrading, certification, and the evaluation of training outcomes. Evidence from skill-development programs suggests that cooperation with industry can substantially enhance the relevance and quality of vocational and skills-oriented courses by ensuring that educational content reflects actual professional requirements (Jaiswal, 2023). This relationship is particularly important in sectors where technologies and production processes evolve rapidly. Digitalization and artificial intelligence are increasingly transforming technical and vocational education by enabling personalized learning, simulation, adaptive assessment, virtual training environments, and data-supported instructional systems (Deckker & Sumanasekara, 2025). Earlier large-scale evidence has likewise demonstrated that appropriate use of educational technology can improve learning outcomes when technological tools are effectively integrated into instructional processes (Naik et al., 2020). Therefore, the modernization of skill-based education requires not only investment in physical infrastructure but also continuous interaction with industries that are themselves generating and adopting new technologies.

Despite the importance of public vocational systems, governments often face financial, managerial, infrastructural, and institutional constraints that limit their capacity to independently provide training at the scale and quality required by labor markets. Public–private partnerships have consequently emerged as an important governance mechanism for mobilizing complementary resources and capabilities. In the educational context, public–private partnership can involve varying combinations of public oversight, private investment, joint service delivery, infrastructure provision, curriculum design, occupational standard setting, training management, technology transfer, and employment placement. Comparative experience in technical and vocational education has demonstrated that PPP arrangements can provide lessons for improving public management by integrating public responsibilities with private-sector expertise and operational capacity (Amorn-Uthivorn, 2016). Similarly, studies of educational infrastructure have emphasized that PPP arrangements may offer alternative mechanisms for addressing resource deficits and improving the provision of facilities and educational services where governments face fiscal or implementation constraints (Hassan & Fatile, 2022). Accordingly, PPP should not be reduced to a financing technique; rather, it can be understood as a broader institutional architecture through which public and private actors jointly contribute to educational and employment objectives.

The effectiveness of PPP arrangements, however, depends on the quality of governance relationships among the participating actors. Partnerships can fail when responsibilities are ambiguous, incentives are poorly aligned, accountability mechanisms are weak, or one party perceives the distribution of risks and benefits as inequitable. The literature therefore increasingly emphasizes the importance of designing “win–win” partnership structures in which public and private actors obtain identifiable value while broader social objectives are preserved. Systematic research on PPP arrangements has highlighted the need to balance stakeholder interests, contractual structures, risk allocation, long-term value creation, and institutional trust in order to produce mutually beneficial outcomes (Eshun et al., 2020). More recent evidence suggests that successful PPP implementation requires a combination of competencies across participating organizations, including managerial, relational, technical, contractual, and collaborative capabilities (Eshun et al., 2024). Such findings are highly relevant to vocational training because cooperation between governments, employers, training providers, and industry associations requires sustained coordination rather than one-time contractual interaction. A partnership model that lacks institutional capacity or clearly defined coordination mechanisms may reproduce fragmentation instead of resolving it.

Governance fragmentation represents a particularly important obstacle in public systems characterized by multiple organizations with overlapping mandates. When responsibility for skills development is distributed across ministries, public agencies, educational institutions, employers, industry associations, and regional authorities, the absence of effective coordination can produce duplication, inconsistent standards, inefficient resource allocation, and weak accountability. Recent work on local education governance has emphasized the importance of moving from fragmented institutional arrangements toward coordination and collective-action capacity among relevant actors (Musa et al., 2026). This concern is directly applicable to skill-based education, where effective employment outcomes depend on the alignment of institutions responsible for training, labor-market policy, economic development, certification, and industrial regulation. Public–private partnership may provide a framework for strengthening such coordination, but only where governance

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

mechanisms specify the roles, responsibilities, decision rights, and accountability of each stakeholder. Contemporary research on vocational education partnerships similarly emphasizes that PPP effectiveness depends on efficient governance structures capable of improving institutional performance, coordination, and responsiveness (Jreifi & Lakrarsi, 2025).

Trust is another fundamental dimension of sustainable public–private collaboration. Long-term partnerships typically require repeated interaction, exchange of information, shared investment, and confidence that participating actors will fulfill their commitments. Where public agencies distrust private providers, or private firms perceive government procedures as unpredictable, bureaucratic, or insufficiently supportive, incentives for sustained collaboration may remain weak. Evidence from PPP governance research has shown that reputation mechanisms can influence cooperative behavior and encourage participants to maintain reliable performance over the life cycle of partnership arrangements (Li et al., 2020). This suggests that effective vocational-training partnerships require institutional mechanisms that support transparency, performance evaluation, mutual accountability, and reputational incentives. Such arrangements become particularly important when private-sector actors are expected to invest in training infrastructure, contribute instructors, participate in occupational standard setting, or provide workplace-based learning opportunities. In these situations, trust cannot depend solely on informal relationships but must be reinforced through credible institutional rules and transparent governance processes.

The economic and social value of PPP arrangements also requires careful consideration of their actual outcomes. International evidence indicates that PPPs can produce important effects across infrastructure, health, and education, although their performance depends heavily on project design, institutional context, contractual arrangements, and implementation capacity (Fabre & Straub, 2023). Therefore, the adoption of PPP mechanisms in vocational training should not be treated as inherently effective. Their contribution must instead be assessed in relation to clearly defined objectives such as training quality, employability, employer satisfaction, labor productivity, entrepreneurship, access to training, and the sustainability of employment outcomes. In vocational education, performance evaluation should also examine whether partnerships successfully reduce the mismatch between training provision and labor-market demand. This is especially significant where formal expansion of vocational programs coexists with employer reports of shortages in technically skilled labor (Song & Xu, 2024). A demand-driven approach requires continuous skills-needs assessment and institutional mechanisms through which employers and industries can communicate current and future competency requirements to training providers.

The development of demand-oriented vocational systems also requires attention to innovation, international learning, and organizational adaptability. Skills systems operate increasingly within interconnected global labor and technology environments, making international benchmarking, knowledge transfer, and adaptation of successful training models potentially valuable. Comparative PPP experiences in vocational education suggest that countries can learn from established models while still adapting institutional arrangements to domestic administrative and labor-market conditions (Amorn-Uthivorn, 2016). International mobility and cross-cultural educational experience may additionally expose learners and institutions to new expectations, practices, and adjustment challenges, demonstrating the importance of institutional support when educational systems become more internationally connected (Mulyadi et al., 2024). Internationalization should therefore not be understood simply as copying foreign models but as a structured process of identifying transferable practices, strengthening institutional learning, and adapting relevant standards to national needs. In the context of skill-based education, this may include international occupational standards, dual training arrangements, quality-assurance frameworks, emerging technologies, certification practices, and industry-based learning models.

The role of private-sector participation becomes particularly significant when innovation and occupational change occur more rapidly than public training institutions can independently accommodate. Enterprises possess direct knowledge of production processes, workplace technologies, required competencies, and recruitment challenges. Their participation in curriculum development, standards formulation, instructor training, training delivery, equipment investment, and assessment can therefore strengthen the responsiveness of vocational systems. At the same time, public institutions remain essential for protecting equity, ensuring national standards, financing socially necessary training, coordinating stakeholders, and preventing narrow firm-specific interests from replacing broader workforce-development objectives. An effective

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

PPP model must consequently establish complementarity between public and private roles rather than simply transferring public responsibilities to private actors. Research on PPP governance and performance indicates that sustainable collaboration depends on clearly differentiated yet mutually reinforcing competencies among participating institutions (Eshun et al., 2024). This complementarity is particularly important in skill-based education because the system must simultaneously serve employers' immediate competency requirements and broader public objectives such as inclusive employment, regional development, entrepreneurship, and human-capital formation.

Furthermore, strengthening the relationship between skills training and employment requires attention to the quality of transitions from training into work. Graduates may possess formal qualifications while remaining uncertain about employment opportunities, career pathways, or the relevance of their acquired competencies. Employment anxiety among graduating students illustrates the significance of psychological resources, coping mechanisms, and perceived employability during transitions into the labor market (Belle et al., 2022). Career adaptability similarly depends on the development of employability skills that enable individuals to respond to occupational change and uncertainty (Koe, 2022). From an institutional perspective, these findings imply that vocational-training systems should not terminate their responsibilities at course completion. Stronger relationships with employers, job-placement services, apprenticeships, entrepreneurship support, career guidance, and employment tracking can help transform training outputs into sustainable labor-market outcomes. This perspective also aligns with the broader transformation of careers under technological change, where continuous reskilling and flexible career pathways are becoming increasingly important (George, 2023).

A further challenge concerns the need to reconcile educational aspirations with actual opportunities in the labor market. Educational and occupational expectations are shaped through interactions among families, schools, public institutions, and wider social structures (Arar et al., 2025). Career interests are likewise influenced by social and cultural contexts that affect perceptions of desirable or attainable occupations (Mansour, 2025). These dimensions suggest that the effectiveness of vocational education cannot be evaluated exclusively in terms of technical curriculum delivery. Its legitimacy and attractiveness also depend on whether trainees perceive vocational pathways as credible routes to employment, advancement, entrepreneurship, and social mobility. Strengthening the reputation and economic value of vocational qualifications may therefore require closer employer recognition, standardized competency certification, stronger pathways to further education, and demonstrable employment outcomes. Relationships between instructors and learners may also contribute to engagement and professional identity formation, making educational quality and interpersonal dimensions relevant to successful skills development (Katsogridakis & Leather, 2025).

Taken together, the literature indicates that the transformation of skill-based education requires an integrated governance perspective encompassing public–private collaboration, institutional coordination, labor-market responsiveness, innovation, technology, stakeholder participation, and employability. Existing research provides valuable evidence regarding PPP governance, educational infrastructure, industry partnerships, employability, technological change, and vocational education; however, these themes are frequently examined separately. The practical challenge is to integrate them into a coherent model that explains how causal challenges, contextual conditions, intervening factors, governance strategies, and employment-related consequences interact within a national vocational training organization. Such integration is particularly important where structural fragmentation, outdated training infrastructure, limited public financial resources, weak coordination with employers, technological change, and persistent skill mismatches occur simultaneously. Under these conditions, PPP represents not merely an alternative source of resources but a potential governance mechanism for restructuring relationships among the state, training institutions, industry, private providers, employers, and the labor market.

Accordingly, the aim of the present study is to identify and explain the dimensions, components, and indicators of a public–private partnership model for enhancing employment in the skill-based education system, with particular emphasis on the Iran Technical and Vocational Training Organization.

2. Methods and Materials

The present study is qualitative in terms of approach and exploratory and applied in terms of purpose, because its primary objective is to identify, discover, and explain the dimensions, components, and indicators affecting public–private partnership in enhancing employment within a skill-based education system. Given that the research topic is multidimensional and encompasses institutional,

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

educational, economic, and social aspects, and considering that a comprehensive and context-specific model has not yet been fully developed for the Iran Technical and Vocational Training Organization, the use of a qualitative method can facilitate an in-depth understanding of experts' perspectives, experiences, and perceptions. In this study, the principal research method is based on thematic analysis and, where necessary, grounded theory logic. Accordingly, data obtained from the interviews are systematically coded, and the major categories, themes, and components of the public–private partnership model are extracted from them. Therefore, the study does not seek to test predetermined hypotheses; rather, it attempts to develop a conceptual framework for explaining public–private partnership in enhancing employment within the skill-based system on the basis of field data and expert perspectives.

The study population in the qualitative phase includes experts, scholars, and specialists in vocational and skills training; senior and middle managers of the Iran Technical and Vocational Training Organization; managers of technical and vocational training centers; university scholars; private-sector practitioners; representatives of industry and the labor market; and specialists involved in employment and skills-training policymaking. The principal criterion for inclusion in the study population is possession of specialized knowledge, executive experience, or research experience in technical and vocational education and training, employment enhancement, skills development, educational policymaking, and public–private partnership. Purposive sampling is employed in this study because the objective is to select individuals possessing the greatest knowledge and experience regarding the research topic. Where necessary, snowball sampling is also used to gain access to additional experts, whereby some initial participants introduce other qualified specialists to the researcher. The sample size in qualitative research is not determined definitively in advance; rather, interviews continue until theoretical saturation is reached, that is, until new interviews no longer add new concepts or components to the findings. Given the nature of the study, approximately 15–20 experts are expected to participate in this phase.

Data collection in this study combines document analysis and semi-structured interviews. In the first stage, the researcher reviews the theoretical literature and previous studies using library sources, scientific articles, theses and dissertations, official reports, upstream policy documents, laws, and policies related to technical and vocational education and training and public–private partnership. An initial interview framework is then developed on the basis of the theoretical findings and research objectives. The principal instrument for field data collection is the semi-structured expert interview. This type of interview enables the researcher to maintain an overall framework and a set of core questions while also posing supplementary and more in-depth questions in response to participants' answers. The interview questions are designed around themes such as the concept of public–private partnership in vocational skills training, the roles of the public and private sectors, barriers and challenges to partnership, legal and institutional requirements, financing mechanisms, the relationship between training and the labor market, the role of industries and employers, mechanisms for improving employability, and the outcomes of partnership. To enhance the content validity of the interview instrument, the preliminary questions are submitted to several university professors and specialists, and the final version of the interview protocol is prepared after incorporating their corrective comments.

Data analysis in the qualitative study is conducted through systematic coding of the interview data. Following the interviews, audio files are recorded with the participants' consent and are subsequently transcribed in full. The interview transcripts are read several times to enable the researcher to develop an in-depth understanding of the data. The coding process is then conducted at three levels: during open coding, initial concepts and meaning units are extracted from the interview transcripts; during axial coding, similar codes are classified into major categories and components; and during selective coding, the principal categories are related to one another and the preliminary conceptual model of the study is developed. To enhance the credibility of the findings, methods such as member checking, expert review, intercoder agreement, repeated review of the data, and constant comparison of codes are employed. The final output of the qualitative analysis is the identification of the principal dimensions, components, and indicators of the public–private partnership model for employment enhancement within the skill-based education system.

3. Findings and Results

In the first stage of qualitative data analysis, the interviews conducted with experts in technical and vocational education and training, skills development, employment generation, and public–private partnership were systematically examined using an inductive approach. The purpose of this stage was to extract initial concepts,

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

identify meaning units, and formulate open codes relating to the challenges of the skill-based education system within the context of public–private partnership. During this process, statements and propositions expressed by the participants were first transformed into initial codes, after which these codes were organized into subcategories and main categories. Thus, open coding provided the basis for explaining the conceptual structure of the study and identifying the most important structural, institutional, legal, governance, and labor-market challenges.

Examination of the data obtained indicates that, at the macro level, the research topic concerns how public–private partnership can be developed to enhance employment through strengthening the skill-based education system. Accordingly, the extracted concepts refer not only to the internal conditions of the vocational skills training system but also reflect the direct relationship of this system with institutional requirements, the legal environment, governance mechanisms, and the actual needs of the labor market. Therefore, the findings of the open-coding stage provide a relatively clear picture of the principal bottlenecks to achieving effective partnership in this field and constitute the basis for proceeding to axial coding and developing the final research model.

Table 1

Open Coding of the Research Findings

No.	Main Category	Subcategory	Extracted Concept
1	Structural and institutional challenges of the vocational skills training system	Lack of coordination among responsible institutions	Lack of uniform procedures among educational, executive, and vocational institutions
2		Multiplicity of authorities responsible for vocational training	Fragmentation of responsibilities among different organizations and absence of integrated management
3		Centralization in decision-making	Limited authority of local centers, provinces, and the private sector in decision-making
4		Organizational duplication	Implementation of similar programs by different institutions without effective coordination
5		Weak implementation capacity	Inability of existing structures to support skill-based training
6	Infrastructural and educational challenges	Obsolescence of training equipment	Outdated tools, workshops, and technologies used in vocational training centers
7		Insufficient practical facilities	Inadequate space, equipment, and resources required for practical training
8		Poor quality of vocational skills training	Ineffectiveness of some courses in developing practical skills applicable to the labor market
9	Legal and governance challenges	Gaps in supportive legislation	Absence of specific laws supporting private-sector involvement in vocational skills training
10		Lack of enforcement mechanisms	Non-implementation or non-binding nature of laws relating to skills training and private-sector participation
11		Administrative bureaucracy	Complexity of administrative procedures for concluding contracts and implementing partnership projects
12		Weak monitoring and evaluation	Ineffective mechanisms for monitoring training quality and the implementation of partnerships
13		Weak participatory governance	Insufficient private-sector involvement in policymaking, decision-making, and implementation
14	Economic and financial challenges	Limited government financial resources	Insufficient public funding for the development and modernization of vocational skills training
15		Lack of economic incentives for the private sector	Insufficient financial, facility-based, and supportive incentives for industries and firms to participate in training
16		High cost of vocational skills training	High costs associated with equipment, instructors, workshops, and delivery of practical training
17	Labor-market and employment challenges	Skills gap	Misalignment between acquired skills and actual labor-market needs
18		Weak linkage between education and industry	Insufficient interaction among training centers, employers, and business enterprises
19		Lack of a clear career pathway	Unclear pathways for trainees to enter the labor market after completing training
20		Low employability of trainees	Inability of vocational training to transform trainees into job-ready workers
21		Employment instability	Temporary nature of employment opportunities and lack of job security for trainees
22		Weak occupational foresight	Insufficient attention to emerging occupations, new technologies, and future labor-market needs

E-ISSN: 2645-3460

23	Public–private partnership challenges	Distrust between government and the private sector	Lack of mutual trust required for sustainable cooperation in vocational skills training
24		Ambiguity of roles	Lack of clarity regarding the responsibilities, benefits, and commitments of government and the private sector within partnerships
25		Weak partnership mechanisms	Absence of a clear operational model for cooperation between the public and private sectors
26		Limited private-sector participation	Limited private-sector involvement in the design, implementation, financing, and evaluation of training programs

Following open coding and the extraction of initial concepts and categories, the study proceeds to the "axial coding" stage. The fundamental objective at this stage is to establish logical relationships among the lower-level categories and organize them within a coherent conceptual model. In practice, by focusing on the central phenomenon, the researcher seeks to explain the relationships among causal conditions (factors giving rise to the phenomenon), contextual conditions (the prevailing context), intervening conditions (facilitating or constraining factors), strategies (actions and interactions), and, ultimately, consequences (outcomes resulting from implementation of the strategies).

Analysis of the interview data showed that the challenges of the vocational skills training system and the requirements for developing public–private partnership constitute components of an interconnected system. Accordingly, the extracted categories were organized within a paradigmatic model to enable the development of a comprehensive map for transformation of the vocational skills training system.

Table 2

Paradigmatic Model for Transformation of the Vocational Skills Training System

Paradigmatic Dimension	Main Components	Subcomponents	Extracted Concepts (Meaning Units)
Central phenomenon	Transformation of the vocational skills training system based on participatory governance	Redesign of the skills training system and development of public–private partnership	Decentralized governance, strategic government–industry networking, structural flexibility, demand-driven orientation, and delegation of functions to the private sector
Causal conditions (antecedent factors)	Structural, legal, economic, and labor-market challenges	Institutional deficiencies, legal gaps, financial constraints, and the education–employment gap	Multiplicity of responsible authorities, organizational duplication, extensive bureaucracy, obsolete equipment, mismatch between skills and market needs, unemployment among vocational graduates, and weaknesses in the occupational competency system
Contextual conditions (prevailing context)	International interactions and the research and innovation environment	Global benchmarking and development of vocational knowledge	Need to obtain international licenses, benchmarking against the dual vocational training system, absence of a specialized research institute, lack of a data-driven system, and dominance of traditional approaches over modern training methods
Intervening conditions (facilitating or constraining factors)	Role of the private sector and stakeholder participation	Private-sector capacity building and institutional synergy	Participation in developing standards, educational investment by industries, involvement of associations and chambers of commerce in decision-making, and networking among actors
Strategies (actions and interactions)	Participatory governance and demand-driven training	Development of public–private partnership and alignment with the market	Delegation of executive functions, trust-building between government and the private sector, decentralization, continuous skills needs assessment, and design of customized training programs
Consequences (outcomes and achievements)	Employability and entrepreneurship	Human resource empowerment and economic development	Employment-oriented training, reduction of the education–employment gap, self-employment, enhanced labor productivity, and increased credibility of vocational qualifications

The findings obtained from axial coding indicated that transformation of the vocational skills training system is a multidimensional phenomenon resulting from the interaction of a set of structural, legal, economic, educational, and institutional factors. Accordingly, "transformation of the vocational skills training system based on participatory governance and public–private partnership with a demand-driven approach" was identified as the central phenomenon around which the other categories acquire meaning. The causal conditions represent existing deficiencies and challenges within the current system; contextual conditions provide the environment required for

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

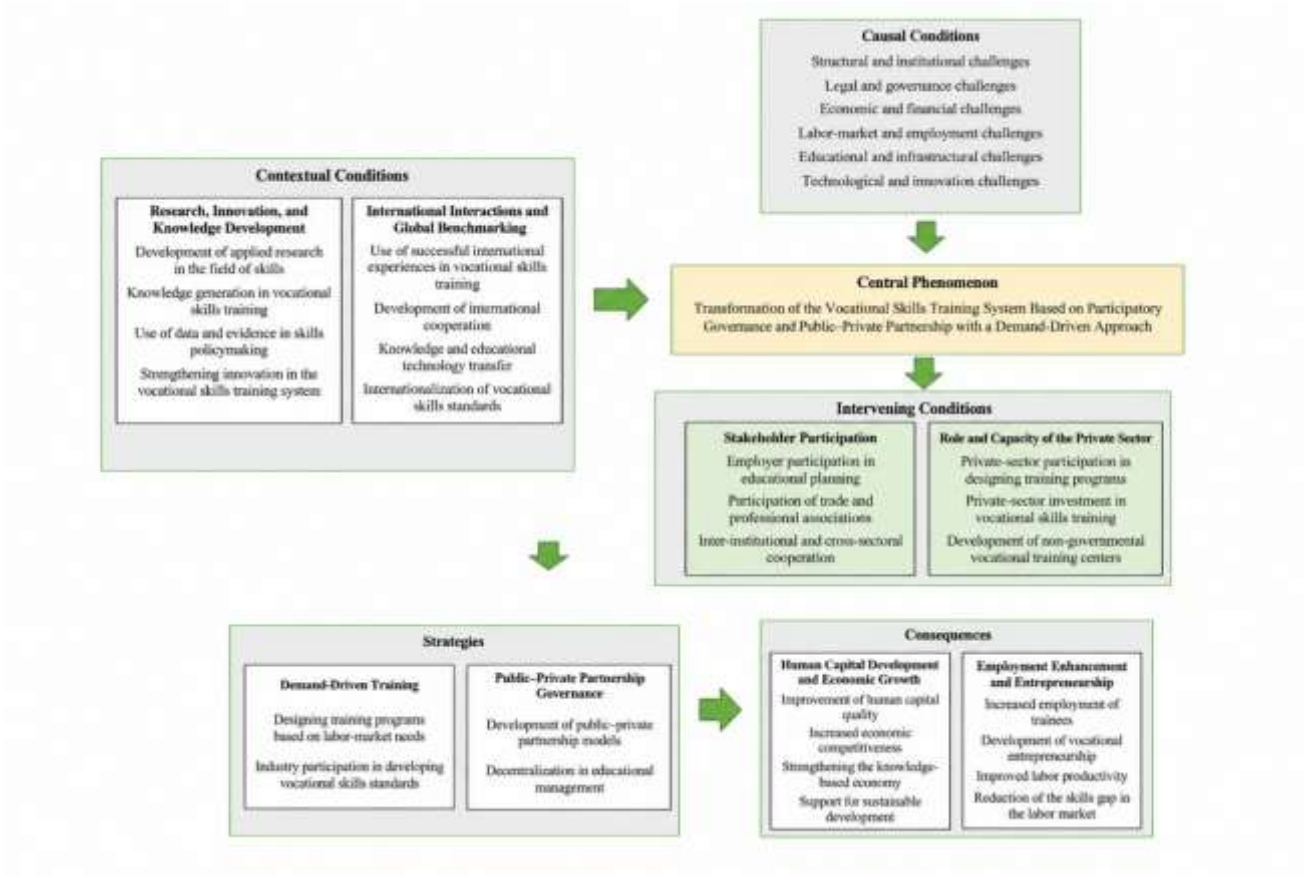
transformation; intervening conditions perform facilitating or inhibiting roles; and the strategies specify the practical pathway for addressing the existing situation. Ultimately, the consequences of this process are directed toward improving employability, increasing human resource productivity, and strengthening economic development. Therefore, the axial model of the study indicates that transformation of the vocational skills training system is possible only through an integrated, participatory approach grounded in the actual needs of the labor market.

Selective coding is the final stage of analysis in the Strauss and Corbin grounded theory approach, during which the researcher integrates the categories generated through open and axial coding, identifies the core category of the study, and develops the final theoretical framework. At this stage, the primary objective is to establish conceptual coherence among the categories and explain their relationships within a coherent theoretical narrative so that all identified dimensions are organized around a central concept. Accordingly, selective coding in the present study provides the basis for presenting the final model for transformation of the vocational skills training system.

The research model developed in this study indicates that transformation of the vocational skills training system constitutes a response to a set of accumulated structural, managerial, legal, economic, and educational challenges. The model emphasizes that overcoming the existing situation requires the establishment of participatory governance, the strengthening of public–private partnership, and a transition toward demand-driven training. Furthermore, contextual factors such as international interactions, innovation, and knowledge development, together with intervening factors such as private-sector capacity and stakeholder participation, play a decisive role in realizing this transformation. Overall, the final research model explains that establishing an effective linkage among government, the private sector, and the labor market can lead to increased employability, enhanced human capital, and improved efficiency of the vocational skills training system.

Figure 1

Final Model



Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

4. Discussion and Conclusion

The findings of the present study indicate that the development of public–private partnership in the skill-based education system is not reducible to a single financial, administrative, or educational intervention; rather, it is a multidimensional transformation process shaped by structural, institutional, legal, economic, technological, educational, and labor-market conditions. The open-coding results identified six major groups of challenges, including structural and institutional challenges, infrastructural and educational challenges, legal and governance challenges, economic and financial challenges, labor-market and employment challenges, and challenges related to public–private partnership itself. In the axial-coding stage, these challenges were integrated into a paradigmatic model in which the "transformation of the vocational skills training system based on participatory governance and public–private partnership with a demand-driven approach" emerged as the central phenomenon. The model further showed that this transformation is influenced by causal conditions, contextual conditions, and intervening conditions and requires strategies such as decentralization, trust-building, delegation of executive functions, continuous skills-needs assessment, and customized training. The anticipated consequences include increased employability, entrepreneurship development, higher labor productivity, stronger human capital, and a reduction in the education–employment gap. Overall, the findings suggest that improving employment outcomes requires a shift from fragmented, supply-driven skills provision toward a coordinated and market-responsive governance system.

One of the most important findings concerns the structural and institutional fragmentation of the vocational skills training system. The participants emphasized the multiplicity of responsible organizations, organizational duplication, centralized decision-making, and weak implementation capacity. These findings indicate that fragmented institutional arrangements can undermine coordination, create overlapping responsibilities, and restrict the ability of local training centers and private actors to respond flexibly to labor-market needs. This interpretation is consistent with the argument that fragmented education governance limits collective-action capacity and that stronger coordination across institutions is required to improve educational outcomes and policy implementation (Musa et al., 2026). Similarly, research on public–private partnerships in vocational education emphasizes that effective governance depends on clearly defined responsibilities, coordination mechanisms, and institutional arrangements that facilitate cooperation between public authorities, training providers, and private-sector actors (Jreifi & Lakrarsi, 2025). Therefore, the structural challenges identified in this study support the view that PPP effectiveness depends not merely on the presence of multiple stakeholders but on the institutional architecture through which those stakeholders interact.

The legal and governance challenges identified in the study further reinforce this interpretation. Participants referred to gaps in supportive legislation, insufficient enforcement mechanisms, administrative bureaucracy, weak monitoring and evaluation, and inadequate private-sector participation in policymaking and implementation. These findings suggest that sustainable public–private collaboration requires more than informal cooperation; it depends on predictable rules, transparent procedures, accountability, and credible institutional commitments. This result is in line with studies conceptualizing successful PPPs as arrangements in which stakeholder interests, risk allocation, governance responsibilities, and expected benefits are balanced to generate mutually beneficial outcomes (Eshun et al., 2020). More recent work also demonstrates that successful PPP implementation requires a combination of managerial, technical, relational, and collaborative competencies across participating organizations (Eshun et al., 2024). The importance of trust-building identified in the current model is also consistent with evidence showing that reputation and incentive mechanisms can promote sustained cooperation and reduce opportunistic behavior in PPP arrangements (Li et al., 2020). Thus, the governance findings of the present study indicate that trust should be institutionalized through transparent rules, performance monitoring, and clear allocation of responsibilities rather than being treated solely as an interpersonal factor.

The economic and financial challenges identified in the study, particularly limited public resources, high training costs, and insufficient incentives for private-sector participation, demonstrate why PPP may be particularly relevant to vocational education. Skill-based training often requires substantial investment in workshops, equipment, technologies, instructor development, and practical learning environments. Where public budgets are insufficient, training institutions may struggle to keep pace with technological change and workplace requirements. Previous

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

research has similarly shown that public–private partnership can help address deficits in educational infrastructure by mobilizing private investment and operational capacity while maintaining public oversight (Hassan & Fatile, 2022). Comparative analysis of PPP in technical and vocational education has also suggested that partnerships can improve public management by combining governmental responsibilities with private-sector resources and expertise (Amorn-Uthivorn, 2016). However, the present findings imply that private participation is unlikely to expand merely because public funding is constrained. Effective participation requires economic incentives, credible contractual arrangements, and a governance structure in which the private sector perceives tangible benefits from investing in training.

A further major finding was the persistent gap between vocational training and actual labor-market demand. The interview data highlighted skill mismatches, weak linkages between training institutions and industry, unclear occupational pathways, low employability among some trainees, unstable employment, and insufficient attention to emerging occupations. These findings strongly support the central role assigned to demand-driven training in the final model. Prior research has shown that expansion of vocational education does not necessarily resolve skilled labor shortages if training content does not correspond to employer needs (Song & Xu, 2024). Similarly, industry partnerships have been found to improve the relevance and quality of skill courses by ensuring closer alignment between curricula and workplace requirements (Jaiswal, 2023). From an employability perspective, the current findings are also consistent with evidence that employability skills improve individuals' capacity to adapt to changing career conditions (Koe, 2022). Therefore, the present study confirms that employment enhancement requires systematic mechanisms for identifying current and future labor-market requirements, translating those needs into competency standards, and continuously updating training programs.

The finding that skill-based education must become more adaptive is particularly important in the context of technological change. Participants emphasized the need to strengthen innovation, improve the technological infrastructure of training, and anticipate emerging occupations. This result aligns with evidence showing that artificial intelligence and digital technologies are transforming vocational and technical education through simulation, personalized learning, adaptive assessment, and new forms of skill acquisition (Deckker & Sumanasekara, 2025). Experimental evidence also indicates that technology can improve learning outcomes when it is effectively embedded within educational design rather than introduced as an isolated tool (Naik et al., 2020). In addition, contemporary career structures are increasingly shaped by technological disruption, flexible employment arrangements, and the need for repeated reskilling throughout working life (George, 2023). Accordingly, the technological and innovation challenges identified in this study are not peripheral issues; they directly affect whether vocational graduates acquire skills that remain valuable in changing labor markets.

The study also found that international interaction, benchmarking, research, and knowledge development form important contextual conditions for system transformation. The participants emphasized the importance of learning from successful international vocational systems, transferring educational knowledge and technology, internationalizing skill standards, and strengthening applied research. These findings are consistent with comparative work showing that national vocational systems can benefit from studying PPP experiences in countries where public and private actors have developed more mature forms of cooperation (Amorn-Uthivorn, 2016). However, such learning should not be interpreted as direct institutional imitation. Context-sensitive adaptation is essential because educational systems operate within different legal, cultural, organizational, and labor-market environments. The broader literature also indicates that students and institutions operating across international educational contexts may encounter adjustment and cultural challenges, reinforcing the importance of adapting imported practices to local conditions (Mulyadi et al., 2024). The results therefore support selective benchmarking rather than mechanical adoption of external models.

Another significant finding concerns the role and capacity of the private sector as an intervening condition. Private-sector participation in curriculum design, training investment, standard development, decision-making, and the establishment of non-governmental training centers was identified as essential to strengthening the vocational skills system. This finding is consistent with the view that PPP outcomes depend on complementary competencies among participating actors (Eshun et al., 2024). Enterprises possess information about workplace technologies, recruitment difficulties, occupational standards, and emerging competencies that public training institutions may not obtain quickly through conventional administrative channels. At

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

the same time, the public sector retains responsibility for regulation, equity, national standards, and the protection of broader social goals. The findings therefore suggest that PPP should be structured as institutional complementarity rather than simple privatization. This interpretation is also compatible with broader evidence showing that the effects of PPPs in education and other public sectors depend heavily on institutional design, implementation capacity, and the allocation of risks and responsibilities (Fabre & Straub, 2023).

Stakeholder participation was likewise identified as an important intervening condition, particularly the involvement of employers, trade and professional associations, and other institutional actors. This finding indicates that training-system transformation requires broad participation beyond bilateral interaction between government and private training providers. Employers and professional associations can contribute to identifying competency requirements, validating occupational standards, providing workplace learning opportunities, and assessing graduate readiness. This result aligns with evidence on industry–education collaboration showing that employer engagement can strengthen the relevance of skill-development programs (Jaiswal, 2023). It also reflects the broader principle that successful educational pathways are shaped by interactions among institutions, social actors, and policy structures rather than by educational organizations acting in isolation. Research on educational and career pathways has similarly shown that schools, families, states, and wider social expectations jointly influence young people's transitions and aspirations (Arar et al., 2025), while social and cultural factors significantly shape career preferences (Mansour, 2025). Thus, stakeholder participation can improve both the technical relevance and social legitimacy of vocational pathways.

The strategies identified in the model—participatory governance, demand orientation, decentralization, delegation of executive functions, trust-building, continuous skills-needs assessment, and customized training—represent practical responses to the challenges identified in the earlier stages of analysis. Decentralization can increase institutional flexibility by allowing local training centers to respond more rapidly to regional labor-market requirements, while delegation can allow private providers and industries to contribute where they possess comparative advantages. Demand-driven and customized training can reduce the mismatch between training supply and employer needs. These findings are consistent with PPP research emphasizing that effective partnerships require flexible institutional arrangements, appropriate distribution of responsibilities, and mechanisms for ensuring mutual benefits (Eshun et al., 2020). They are also aligned with work in vocational education that emphasizes efficient governance and performance enhancement through stronger public–private coordination (Jreifi & Lakrarsi, 2025). Consequently, the strategic component of the model provides a governance pathway through which fragmented institutional conditions can be converted into more coordinated forms of skills development.

The findings regarding consequences indicate that successful implementation of the proposed model may strengthen employability, entrepreneurship, human capital, labor productivity, and economic development. These consequences are theoretically consistent with the function of vocational education as a mechanism connecting human-capital development with labor-market participation. Employability is especially important because technical training alone does not guarantee successful transition to work. Evidence suggests that employability skills influence career adaptability and the capacity to cope with changing occupational conditions (Koe, 2022). Similarly, uncertainty about employment can generate substantial anxiety among graduating students, indicating the importance of creating credible pathways from training to employment (Belle et al., 2022). The current study therefore supports an outcome-oriented conception of vocational training in which program success is evaluated not only by enrollment or certification but by employment, career progression, entrepreneurship, and productivity.

The emphasis on entrepreneurship is also important because labor-market absorption cannot always depend solely on formal wage employment. A flexible skill-based system should equip trainees with the technical, managerial, and adaptive competencies necessary for self-employment and enterprise creation, particularly in sectors affected by technological restructuring and changing work arrangements. The shift toward more flexible and less stable career structures increases the importance of adaptability, continuous learning, and independent economic activity (George, 2023). At the same time, vocational pathways must be perceived as legitimate and attractive career options. Social expectations and educational aspirations can shape whether individuals view vocational training as a desirable pathway (Arar et al., 2025; Mansour, 2025). Strengthening the credibility of vocational qualifications, therefore, may require better employer recognition, clearer career

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

progression routes, stronger certification systems, and visible evidence of successful employment outcomes.

Finally, the study suggests that the transformation of the skill-based education system should be understood as a governance reform rather than merely an educational reform. The central phenomenon identified through axial and selective coding integrates institutional coordination, market orientation, private-sector participation, technological modernization, and stakeholder involvement. This integrated interpretation is supported by prior research showing that PPP performance depends on governance capacity, competency complementarities, and balanced stakeholder relationships (Eshun et al., 2024; Fabre & Straub, 2023). It is also consistent with findings that coordinated governance is necessary to overcome fragmentation in education systems (Musa et al., 2026). In this sense, the most important contribution of the present model is that it positions public–private partnership as an institutional mechanism for aligning training provision with employment creation rather than as a narrow contractual or financial arrangement. The results indicate that sustainable employment enhancement is more likely when governance, training design, industry participation, financing, innovation, and labor-market intelligence operate as interconnected components of a single skills ecosystem.

The present study has several limitations that should be considered when interpreting its findings. First, the qualitative design prioritizes depth of understanding rather than statistical generalizability, and the findings are based on the perspectives of a purposively selected group of experts and managers. Second, participants were drawn primarily from stakeholders familiar with vocational education, employment policy, industry, and public–private partnership, and other groups such as trainees, unemployed graduates, local employers, and frontline instructors may have provided additional perspectives. Third, the findings reflect the institutional and policy context of the Iran Technical and Vocational Training Organization and may not be directly transferable to other national, organizational, or sectoral settings. Fourth, although procedures such as member checking, expert review, intercoder agreement, and constant comparison were used to enhance credibility, qualitative coding inevitably involves interpretive judgment. Finally, the proposed model represents a conceptual explanation derived from qualitative data and has not yet been subjected to large-scale quantitative validation or longitudinal assessment of its employment outcomes.

Future studies should quantitatively validate the dimensions, components, and indicators identified in the proposed model using larger and more diverse samples of managers, instructors, employers, trainees, graduates, and private-sector representatives. Structural equation modeling could be used to test the relationships among causal conditions, contextual factors, intervening conditions, strategies, and employment-related outcomes. Comparative studies across provinces, industries, or national vocational systems could determine whether the proposed relationships remain stable under different economic and institutional conditions. Longitudinal research would also be valuable for evaluating whether PPP-based reforms produce sustained improvements in employment, productivity, entrepreneurship, and employer satisfaction over time. Additional research should examine sector-specific skills partnerships in areas such as advanced manufacturing, information technology, renewable energy, construction, tourism, and health services. Future studies could also investigate the effects of digital learning, artificial intelligence, micro-credentials, competency-based certification, and labor-market information systems on the effectiveness of PPP arrangements in vocational education.

Policymakers and managers should develop a clear national governance framework for public–private partnership in vocational skills training that defines stakeholder roles, decision-making authority, financing responsibilities, accountability mechanisms, and measurable performance indicators. Greater operational authority should be delegated to provincial and local training centers so that programs can be adapted to regional labor-market conditions. Employers, industry associations, chambers of commerce, and professional organizations should participate systematically in skills-needs assessment, curriculum design, occupational-standard development, practical training, and evaluation. Financial and regulatory incentives should be developed to encourage private-sector investment in training infrastructure, modern equipment, instructors, and work-based learning. The vocational system should establish continuous labor-market intelligence mechanisms to identify emerging occupations and update programs before skill shortages become severe. Training outcomes should be evaluated using employment, retention, productivity, entrepreneurship, employer satisfaction, and wage progression rather than relying primarily on enrollment and certification indicators. Finally, sustained investment in digital infrastructure, instructor development, international benchmarking, applied research, and

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

transparent monitoring is necessary to transform PPP from an occasional form of cooperation into a stable governance mechanism linking skills development with employment and economic development.

Authors' Contributions

Authors equally contributed to this article.

Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

Acknowledgments

We hereby thank all participants for agreeing to record the interview and participate in the research.

Declaration of Interest

The authors report no conflict of interest.

Funding

According to the authors, this article has no financial support.

Ethical Considerations

All procedures performed in studies involving human participants were under the ethical standards of the institutional and, or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

References

Amorn-Uthivorn, K. (2016). Public-Private Partnerships (PPPs) in Technical Vocational Education and Training (TVET): Lessons Learned from Singapore and USA and Implications for Public Management in Thailand. *Journal of Public and Private Partnership*.

Arar, K. H., Özen, H., Aslan, G., & Abo-Zaed Arar, E. (2025). Between Aspirations and Policies: How Families, Schools, and the State Define Generation Z's Pathways in Türkiye. *International Studies in Sociology of Education*, 1-24. https://doi.org/10.1080/09620214.2025.2531832

Belle, M. A., Antwi, C. O., Ntim, S. Y., Affum-Osei, E., & Ren, J. (2022). Am I Gonna Get a Job? Graduating Students' Psychological Capital, Coping Styles, and Employment Anxiety. *Journal of Career Development*, *49*(5), 1122-1136. https://doi.org/10.1177/08948453211020124

Deckker, D., & Sumanasekara, S. (2025). AI in Vocational and Technical Education: Revolutionizing Skill-Based Learning. *EPRA International Journal of Multidisciplinary Research*, *11*(3), 9-23. https://doi.org/10.36713/epra20462

Eshun, B. T., Chan, A. P., Boateng, E. B., & Oteng, D. (2024). A Triadic Competency Requirement Model for Successful Win-Win Optimization in Public-Private Partnerships: A Structural Equation Modelling. *Buildings*, *14*(12), 3768. https://doi.org/10.3390/buildings14123768

Eshun, B. T. B., Chan, A. P., & Osei-Kyei, R. (2020). Conceptualizing a Win-Win Scenario in Public-Private Partnerships: Evidence from a Systematic Literature Review. *Engineering, Construction and Architectural Management*, *28*, 2712-2735. https://doi.org/10.1108/ECAM-07-2020-0533

Fabre, A., & Straub, S. (2023). The Impact of Public-Private Partnerships (PPPs) in Infrastructure, Health, and Education. *Journal of Economic Literature*, *61*(2), 655-715. https://doi.org/10.1257/jel.20211607

George, A. S. (2023). The Ephemeral Career: How Technological Change Necessitates Flexible Employment. *Partners Universal International Innovation Journal*, *1*(5), 47-62.

Hassan, K. I., & Fatile, J. B. (2022). Public Private Partnership and Educational Infrastructure in Nigeria. *Journal of Public Administration, Finance & Law*, *26*, 138-151. https://doi.org/10.47743/jopafl-2022-26-13

Jaiswal, V. R. (2023). The Role of Industry Partnerships in Enhancing the Quality of Skill Courses in Indian Education. *World Journal of English Language*, *6*(4), 97-113.

Jreifi, K., & Lakrarsi, A. (2025). Public-Private Partnerships in Vocational Education and Training: Toward Efficient Governance and Enhanced Performance. *International Journal of Accounting Finance Auditing Management and Economics*, *6*(10), 63-81.

Katsogridakis, G., & Leather, M. (2025). Teacher-Student Relationships in Higher Education: Reflections from an Adventure Sport Context. *Sport, Education and Society*, *30*(2), 237-248. https://doi.org/10.1080/13573322.2023.2298794

Koe, A. R. (2022). The Influence of Employability Skills toward Career Adaptability. *Social Sciences*, *12*(7), 2035-2046. https://doi.org/10.6007/IJARBSS/v12-i7/14445

Li, H., Lv, L., Zuo, J., Su, L., Wang, L., & Yuan, C. (2020). Dynamic Reputation Incentive Mechanism for Urban Water Environment Treatment PPP Projects. *Journal of Construction Engineering and Management*, *146*, 04020088. https://doi.org/10.1061/(ASCE)CO.1943-7862.0001879

Mansour, N. (2025). Exploring the Impact of Social, Cultural, and Science Factors on Students' STEM Career Preferences. *Research in Science Education*, *55*(3), 641-668. https://doi.org/10.1007/s11165-024-10210-4

Mulyadi, E., Permatasari, D., Soares, D., Syarifudin, M., da Silva Pinto, T., & Sarmento, J. (2024). Culture Shock: Challenges of International Students. *International Journal of Health Engineering and Technology*, *3*(1). https://doi.org/10.55227/ijhet.v3i1.208

Musa, M., Magaji, S., & Ismail, Y. (2026). From Fragmentation to Coordination: Evaluating Local Education Governance and Collective Action Capacity in Nigeria's Federal Capital Territory.

Naik, G., Chitre, C., Bhalla, M., & Rajan, J. (2020). Impact of Use of Technology on Student Learning Outcomes: Evidence from a Large-Scale Experiment in India. *World Development*, *127*, 104736. https://doi.org/10.1016/j.worlddev.2019.104736

Iranian Journal of Educational Sociology
E-ISSN: 2645-3460

Park, J. J., Jia, Z., & Kim, B. H. (2023). Unveiling the Inequalities of Extracurricular Activities in Admissions. *Change: The Magazine of Higher Learning*, *55*(5), 45-54. https://doi.org/10.1080/00091383.2023.2235253

Song, X., & Xu, D. (2024). More Graduates, Fewer Skills? Vocational Education Expansion and Skilled Labour Shortages in China. *The China Quarterly*, *260*, 970-985. https://doi.org/10.1017/S0305741023001856

E-ISSN: 2645-3460