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Journal of Social Studies Education Research

Sosyal Bilgiler Eğitimi Araştırmaları Dergisi

2025:16 (3), 128-169

A Qualitative Study on the Perceived Contributions of Regional Standards-Based Vocational Training to Work Performance and Innovation Skills in the Kazakhstan Labor Market

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Abstract

This study aims to reveal the impact of training based on regional human resources development standards in the Kazakhstan labor market on employees' work performance and innovation skills. The research employed a case study based on qualitative research designs. The study group consists of 18 participants selected with maximum diversity from 150 participants who participated in the training program based on regional human resources development standards in the Kazakhstan labor market. The training was carried out between October and December in 2024 based on the Rapid Foresight (RF) methodologies. During the training, basic stages such as preliminary preparation, in-house analyses, foresight sessions, scenario development, and result reporting were implemented, and future competency maps, strategy drafts, and projection scenarios were formed with the participants. The data were collected using a semi-structured interview form developed by the researchers and subjected to content analysis. The research results revealed that training based on regional human resources development standards implemented in the Kazakhstan labor market had positive effects on employees' work performance and innovation skills. The participants showed significant improvements in areas such as time management, problem-solving, strategic thinking, and teamwork. The practical and interactive structure of the trainings deepened the learning process and transformed individual gains into institutional success. In this context, it is recommended that future training programs be structured according to sectoral needs, enriched with individual mentoring support, and cover areas such as digital literacy and crisis management. Training should be considered a key to not only individual but also regional development.

Keywords: *Human resources development, Kazakhstan labor market, regional standards, vocational training.*

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Introduction

The intensity of global competition makes investments in labor force qualifications a strategic priority for countries. A comprehensive study of strategies and tools for the development of human capital contributes not only to increasing the competitiveness of individual regions but also to the sustainable socio-economic development of the country as a whole. In modern conditions of dynamic economic and social changes, the importance of well-developed personnel is becoming increasingly evident. In this context, human capital is considered the main determinant of institutional and regional growth and is supported by comprehensive training processes (Brodny & Tutak, 2024; Olowookere et al., 2022; Pike et al., 2016).

Historically, all developed countries have provided personnel training since the mid-20th century, when industrialization and scientific and technological progress exacerbated the problem of a shortage of skilled workers. In the 1960s, Japan was one of the first to introduce advanced learning approaches within the framework of state technological development programs such as Technopolis, which aimed to create competencies that contribute to the development of high-tech industries (Lewis, 2020). In the 1980s and 1990s, the concept of long-term personnel planning was developed in the USA and Germany, where the first "predictive learning" models were formed to train specialists in innovative fields. At the beginning of the 21st century, interest in dynamic education models increased in countries such as South Korea and Singapore (O'Brien et al., 2018). South Korea has been developing personnel standards for the training of specialists in the IT sector since the 2000s, anticipating the development of the digital economy and strategic technologies such as artificial intelligence and robotics (Amish, 2024). Today, European Union countries are actively implementing advanced development approaches, including programs such as Skillnet in Ireland and projects of the European Commission aimed at creating a unified qualification system for all EU member states (Chapagain et al., 2022). These examples show that advanced personnel are becoming an integral part of strategic planning in the knowledge economy.

The Kazakh economy is diversifying its demand for qualified labor through the transition from natural resource-based sectors to service and technology-oriented sectors (Jašková & Havierniková, 2020). This transformation demonstrates the necessity of new skill areas with the acceleration of digitalization and automation trends (Lewis, 2020; Steger et al., 2025). This research examines the impact of training organized within the framework of Kazakhstan's regional

human resources development standards, which include the analysis of the current situation of personnel and the determination of development areas, on the work performance and innovation skills of employees.

The dynamics of contemporary labor markets are increasingly shaped by globalization, digital transformation, and regional development strategies, all of which demand new approaches to human resource development. In this regard, education and training policies serve as critical mechanisms for enhancing employees' adaptability, productivity, and innovative potential. Previous studies highlight the strong relationship between well-designed training interventions and improved work performance (Bartel, 1994; Chapagain et al., 2022). Moreover, research underscores that training aligned with regional and sectoral standards not only fosters skill acquisition but also contributes to organizational performance and competitiveness (Slavić & Berber, 2019; Martins et al., 2019). Despite this, the integration of region-specific standards into human resource development practices remains an underexplored area in several national contexts, including Kazakhstan.

From the perspective of innovation, the literature recognizes creativity, problem-solving, collaboration, and digital literacy as core competencies for 21st-century employees (Nakano & Wechsler, 2018; Mwantu et al., 2021). Studies conducted in different geographical contexts demonstrate that training programs designed according to regional standards enhance these competencies by ensuring consistency and relevance to local economic priorities (Slavić & Berber, 2019). However, in Kazakhstan, few studies have examined how standards-based training influences innovation skills in practice (Abdiyev et al., 2023; 2025; Sekerbayeva et al., 2024). Furthermore, the phenomenon of skill-job mismatch, widely reported in international literature (Flisi et al., 2017; Shin & Bills, 2021), remains insufficiently investigated in terms of its implications for innovation capacity in the Kazakh labor market. This represents a critical research gap, as innovation is widely regarded as a cornerstone of sustainable economic growth.

Addressing this gap requires situating the problem in both theoretical and practical terms. Theoretically, the study contributes to human capital and regional development literature by analyzing how standardized training programs impact employee outcomes in a specific national labor market. Practically, it offers suggestions about how Kazakhstan can restructure its human

resource management strategies to align with regional standards while maintaining relevance to local economic conditions. In doing so, the study not only examines the direct relationship between training, work performance, and innovation but also explores the broader implications of adapting international standards to local contexts.

The Kazakhstan labor market, situated at the intersection of post-Soviet economic restructuring and global digitalization, presents a unique context for examining the role of standards-based training. While government initiatives and education policies emphasize skill development and workforce modernization, empirical studies assessing the direct impact of training interventions on employee performance and innovation remain limited. Existing research tends to focus on macro-level policy frameworks or international comparisons (Bocean & Sitnikov, 2015; Jašková & Havierniková, 2020), without sufficiently addressing how regional standards can be adapted to local labor market needs. Consequently, there is a lack of systematic evidence on how such training interventions shape individual competencies and organizational outcomes within Kazakhstan.

The purpose of this qualitative study is to explore employee perceptions of vocational training based on regional human resources development (HRD) standards in Kazakhstan, with a particular focus on how participants perceive its contributions to their work performance and innovation-related skills such as collaboration, creativity, and strategic thinking.

Literature Review

Development of Human Capital and the Labor Market

Human resources are considered to be one of the fundamental elements that determine existence and development in today's global economy and different organizational structures (Brodny & Tutak, 2024). Traditionally defined as the knowledge, skills, and experience of individuals (Becker, 1964; Schultz, 1961), the concept of human capital has evolved over time to encompass competence, commitment, and motivation (Nakano & Wechsler, 2018). In this context, human capital theory is one of the fundamental models that explain how investments in education and health support the productivity of individuals and thus economic growth (Brodny & Tutak, 2024; Nikisi et al., 2025; Olowookere et al., 2022). It is emphasized in the literature that human capital has significant effects not only on economic productivity but also on innovation capacity and social sustainability (Ahmed et al., 2020; Bekele et al., 2024). This situation is seen as critical in terms

of individuals' and societies' ability to adapt to dynamic conditions. Effective human resources practices increase organizational performance and improve the quality of the workforce by equipping employees with up-to-date skills (Sima et al., 2020).

In the context of regional development, the role of human resources in economic growth, competitiveness, and social welfare is increasing (Jašková & Havierniková, 2020). Goals such as increasing employment rates, improving living standards, and developing workplaces are directly dependent on the quality of human capital. Among the main determinants of economic growth, labor force, physical capital, and technical progress, it is also emphasized that technical progress has the potential to increase the efficiency of other factors. At this point, human resources are not only passive inputs; they are also considered as active components affecting development processes. For policymakers, the systematic development of human infrastructure is directly related to long-term development goals. According to the endogenous growth theory, investments in knowledge, innovation, and human capital are decisive for the sustainability of economic growth (Lucas, 1988; Romer, 1990). The dynamic nature of human capital necessitates regular monitoring and evaluation of indicators in this area (e.g., education level, skill acquisition) (Brodny & Tutak, 2024).

The rapidly changing global economy and technological transformation processes, especially with the Industry 4.0 revolution, are significantly transforming the structure of the labor market and the need for human capital (Anwar & Abdullah, 2021; Brodny & Tutak, 2024). Automation, digitalization, and the rise of the platform economy are reshaping occupational definitions, employment patterns, and job profiles (Sima et al., 2020). This transformation necessitates that education systems quickly adapt to changing skill demands. In the context of Industry 4.0, the evolution of production processes from centralized control to self-managed systems requires the requalification of human resources. In the digital age, the traditional low-cost labor-based competitive advantage is giving way to a structure that prioritizes qualified and innovative individuals. In this context, new business models and production technologies increase the demand for expert personnel who will close the existing skill gaps. It is of extreme importance to restructure education programs to respond to this need. Increasing innovation capacity for SMEs has become critical in terms of maintaining competitiveness. However, to manage structural risks such as job loss, human capital needs to be strategically redefined and directed according to the skills that need

to be anticipated. In this process, tools like Skills Technology Foresight (STF) are becoming increasingly important for determining future competency needs (Sudakov et al., 2016; Petrenko et al., 2022).

In increasingly complex labor market conditions, employability skills and education-job fit strategies are becoming decisive in human capital development (Amish, 2024). Skills that are not job-specific but support general performance, such as critical thinking, problem solving, technology literacy, and creative thinking, facilitate the integration of graduates into the workforce. The digital transformation that comes with Industry 4.0 requires individuals to have not only technical but also flexible and transferable skills (Fasanmi, 2023; Lubinga et al., 2023; Mlangeni et al., 2024). However, the mismatch between the education system and the labor market continues to be a significant problem (Matabane et al., 2022; Shin & Bills, 2021). It occurs when individuals' skills cannot find a full response in the labor market. It is observed in horizontal (field mismatch) and vertical (over- or under-education) forms (Allen & Van der Velden, 2001; Banerjee et al., 2019). Such mismatches are more common, especially in transition economies, and the level of stratification of the education system directly affects this situation. In the case of Kazakhstan, Khasanova et al. (2021) analyzed the impact of education investments on regional development and found that differences in infrastructure between rural and urban areas affect the quality of the workforce. Strategic tools such as Skills Technology Foresight (STF) help to anticipate such mismatches and enable the restructuring of human capital policies at the regional level (Sudakov et al., 2016). Thus, a stronger fit is established between the qualifications of individuals and the demands of the labor market, and productivity and social efficiency increase. The degree to which individuals can apply their knowledge and skills in business life directly influences the performance of education systems.

Education policies and human resource management practices play a central role in adapting to the changing needs of the labor market and strategically developing human capital (Brodny & Tutak, 2024; Lekhu, 2023; Olowookere et al., 2022). Human resource management aims to achieve both individual and organizational goals with a holistic approach that includes the recruitment, development, motivation, and evaluation of the workforce (Choiriyah & Riyanto, 2021). Effective education and training programs directly increase job performance by improving the knowledge, skills, and attitudes of employees (Bartel, 1994; Chapagain et al., 2022). In this

context, formal and informal learning opportunities provided in the workplace support both employee motivation and organizational efficiency (Hutchins & Burke, 2007; Manuti et al., 2015).

In transition economies like Kazakhstan, such practices are becoming more important. The need for integration between education investments and regional development policies is increasing (Khasanova et al., 2021). While the limited educational infrastructure in rural areas negatively affects the quality of the workforce, technology-supported programs implemented in urban centers strengthen human capital. The performance of the education system directly affects not only individual skills but also economic competitiveness (Ndunguru, 2015). In addition, programs structured in line with employer expectations are effective in creating career paths and increasing education transfer (Pike et al., 2016). Therefore, strong collaborations between educational institutions, employers, and public authorities in Kazakhstan will support the sustainable development of advanced human resources.

Regional Standards in the Development of Human Resources

Regional human resources development standards are defined as a set of practices and criteria that adapt to economic, social, and sectoral needs in a specific geographical context. These standards are compatible with both national policy objectives and international norms, while also taking into account the specific needs of local labor markets (Bocean & Sitnikov, 2015). The literature emphasizes that the effectiveness of regional development strategies largely depends on the correct analysis of human capital potential and the establishment of structures that will direct this potential (Jašková & Havierniková, 2020). Human resources are considered not only as an input of production but also as an active dynamic affecting regional development. Therefore, the structuring of regional-specific certification systems, skill frameworks, and training programs is of great importance (Petrenko et al., 2022). In this process, the active participation of stakeholders such as public institutions, local governments, education providers, sector representatives, and employer associations increases the applicability and sustainability of the standards.

In the development of regional human resources development standards, not only current economic requirements but also future skill demands should be taken into account. In this context, various conceptual models have been developed for the design of applicable standards at the regional level. Jašková and Havierniková (2020) clearly define the roles of stakeholders by

defining the standard-setting process step by step in the regional development-based human resources model. This process aims to directly influence the content and certification structure of educational programs. Similarly, Bocean and Sitnikov (2015) emphasize that the criteria should be comprehensive and objective in the process of integrating international standards into local contexts. The five-stage model proposed by Pike et al. (2016) defines a comprehensive process starting with the determination of regional needs, skill sets, structuring educational content, and developing certification and assessment criteria. In addition, foresight methodologies are important tools that ensure that standards are flexible and sustainable.

Although the standardization of human resources management practices has enormous potential in terms of quality and process compliance, it also poses various challenges due to differences in implementation in different contexts (Bocean & Sitnikov, 2022). In this context, human resources standards, especially those proposed by globally recognized structures such as ISO and SHRM, constitute a reference point for multinational companies and regional development actors. However, the long-term effectiveness of these standards depends on their flexibility to respond to dynamic workforce needs. At this point, foresight methodologies come to the fore; they enable the shaping of human resources strategies in line with future job profiles, skill needs, and technological transformation scenarios (Szpilko, 2020; Sima et al., 2020). These approaches inform the decision-making processes of not only education systems but also regional policy makers (Petrenko et al., 2022). Indeed, applications in different regions necessitate the restructuring of standards according to local economic, sectoral, and social contexts. For example, studies in the pharmaceutical, transportation, and maritime sectors show that regional training programs have a direct impact on labor productivity (Bader et al., 2018). In addition, it is emphasized that development-based human resources models should be reframed in regions considered "underdeveloped" (MacKinnon et al., 2022). All these examples reveal that flexible and region-specific human resources standards supported by foresight approaches are not only technical regulatory tools but also strategic mechanisms that increase regional competitiveness and social inclusiveness.

Innovativeness Skills and Work Performance

Innovation skills in the workplace enable employees to generate new ideas, creatively transform these ideas into solutions, and put them into practice. These skills have a multidimensional structure that is not limited to R&D units but enables innovative contributions at all levels of the

organization (Suarta et al., 2017; Mwantu et al., 2021). In the literature, these skills are defined by components such as creativity, critical thinking, problem-solving, technological literacy, and digital competencies, and it is emphasized that they foster individual awareness and organizational learning together (Nakano & Wechsler, 2018; Lewis, 2020). Technological developments, globalization, and digital transformation have made innovation competencies in the workplace not only a competitive advantage but also a condition of sustainability (Sima et al., 2020; Martínez-Peláez et al., 2023). Innovation means the implementation of new or improved products, services, or processes, and it requires the development of all aspects of human capital that affect productivity, such as knowledge, skills, and health (Gruzina et al., 2021; Nomnga, 2024). Therefore, these skills should be considered as a strategic sub-component of human capital and should be systematically supported by education systems, employer policies, and public strategies. Skill renewal based on digital competencies and lifelong learning increases the participation of employees in innovation processes and accelerates organizational transformation (Noe et al., 2014; Pashaki, 2018).

Job performance is defined by evaluating the tasks and responsibilities that employees fulfill at work in terms of quantity and quality. This concept includes two important dimensions: task and contextual performances. Task performance shows the extent to which the employee completely and effectively fulfills the tasks determined in accordance with the job description. Contextual performance includes the employee's activities that contribute to the organizational culture, such as teamwork, leadership, cooperation, and organizational citizenship behaviors, and strengthens the organizational climate (Martins et al., 2019). In addition, Taouab and Issor (2019) point out the value of an integrated approach to quantitative and qualitative criteria when defining job performance in company performance models. However, Ali et al. (2018) state in their study examining job performance that managerial coaching practices indirectly increase job performance through work commitment and job satisfaction. Similarly, Moloele and Moeti (2024) critique how various antecedents—including job satisfaction, leadership style, and organizational commitment—serve as predictors of job performance in school settings, further supporting the multidimensional nature of performance constructs in educational environments. Van Horn, Edwards, and Greene (2015) revealed that job performance is closely related to training, mentoring, and skill development processes within the scope of regional workforce development

policies. In this context, job performance encompasses not only individual productivity but also team performance and contribution to organizational goals. In addition, in the measurement models of Taouab and Issor (2019), job performance is evaluated with the criteria of efficiency of business processes, job quality, and customer satisfaction as well as financial indicators. In other words, job performance has a multidimensional structure and includes both tasks related to the job description and social interactions within the organization. However, when academic literature addresses job performance, it is crucial that performance indicators are clear and measurable. Ali et al. (2018) emphasized that in addition to managerial coaching practices, factors such as motivation, leadership, and work environment that affect job performance should be considered.

The alignment of training programs with regional standards has been shown to exert a significant influence on employee job performance (Martins et al., 2019). Indicators of organizational performance serve as comprehensive reflections of behavioral changes observed in the workplace (Ford et al., 2018). According to Slavić and Berber, standardized training practices contribute to the enhancement of both productivity and quality outcomes (Slavić & Berber, 2019). Moreover, the assessment of employees' innovative competencies often involves an integration of problem-solving abilities with creative idea generation (Mwantu et al., 2021). Nakano and Wechsler further highlight that innovation capacity constitutes a critical component of 21st-century skill sets (Nakano & Wechsler, 2018).

Within the broader context, the global digital transformation has fundamentally altered labor market competence requirements, compelling nations to strategically restructure investments in human capital in order to safeguard competitiveness. Brodny and Tutak (2024) argue that multi-criteria human capital measurement models allow for rapid identification of skill gaps. Despite this, empirical evidence regarding the effect of regional standards-based training on performance and innovation outcomes in Kazakhstan's labor market remains insufficient. For instance, while Slavić and Berber (2019) examined cases from the Danube region and Jašková and Havierniková (2020) introduced regional development frameworks for various geographical contexts, these contributions did not specifically address regional standards in Kazakhstan. Similarly, Bocean and Sitnikov (2015) emphasized the formulation of international standards but failed to sufficiently address their adaptation to local conditions and integration into Kazakhstan's labor dynamics.

Furthermore, Olowookere et al. (2022) demonstrated that human capital development is intrinsically linked to the achievement of sustainable development goals. In line with this, the regional development literature increasingly underscores the significance of tailoring standards-based training to local requirements. Pike et al. (2016) suggest that the adaptation of skills constitutes a pivotal element of local development strategies. Nonetheless, the role and effectiveness of regional human resource standards within the Kazakh context have yet to be systematically evaluated. The majority of existing research remains concentrated on national-level policy analyses, offering limited insight into the organizational impact of micro-level training interventions. Although Slavić and Berber (2019) confirmed that standardized training practices positively influence productivity, their work did not provide detailed assessments across different sectors.

The aim of this study is to explore employees' perceptions regarding the contributions of vocational training based on regional human resources development standards to their work performance and innovation skills in the Kazakhstan labor market. The study seeks to capture how participants experienced the training and how they perceived its influence on key workplace competencies such as time management, problem-solving, creativity, collaboration, and strategic thinking.

1. How do employees perceive the contributions of regional standards-based vocational training to their work performance in the Kazakhstan labor market?
2. In what ways do participants report improvements in innovation-related competencies following the training?
3. How do employees describe changes in their teamwork and collaboration practices after participating in the training?
4. What are participants' views on the strengths of the training design, and what suggestions do they offer for improving future training programs?

Method

Research Design

The present study was conducted within the framework of the qualitative research method in order to deeply examine the impact of vocational training based on regional human resources development standards on employees' job performance and innovation skills in the Kazakhstan labor market. Qualitative research offers effective methods for addressing individuals' experiences, perceptions, and worlds of meaning in context (Creswell, 2013). In this context, the study was designed in the case study design. These studies provide a holistic and in-depth examination of a specific event or phenomenon in a real-life context. This method allows social phenomena to be evaluated without being separated from the context (Yin, 2018).

Study Group

Experts from the priority industries of the regions identified during the preliminary analysis of the regions' socio-economic status and development were invited to participate in foresight sessions. Maximum variation sampling, one of the qualitative research methods, was used in the study.

It is one of the purposeful sampling strategies used in qualitative research. In this approach, the researcher selects participants who exhibit different characteristics in the widest possible range in terms of "dimensions" related to the phenomenon under study (e.g., age, gender, seniority, region, profession, level of success, etc.) for a specific purpose. The aim is to reveal common themes, patterns, and significant differences within a very heterogeneous group (Patton, 2015). For this purpose, 18 participants were included in the sample group from a total of 150 people who participated in the training program organized in 2024. Considering the diversity of professions, regions, seniority, gender, and sectors. When data saturation was reached, the data collection process was completed.

In determining the participants, demographic variables such as working in different sectors (e.g., construction, agriculture, energy, transportation and logistics, tourism, education, mechanical engineering, petrochemicals, etc.), length of professional experience (seniority), gender, and regional distribution were taken into consideration. In this way, a heterogeneous sample group was created to expand the scope of the research and evaluate various perspectives.

Table 1

Demographic Profile of Participants

Participant Code	Region	Sector	Gender	Seniority (Years)
P1	Mangystau	Transportation & Logistics	Male	12
P2	Mangystau	Energy	Female	7
P3	Mangystau	Construction	Male	15
P4	Atyrau	Petrochemical Industry	Male	10
P5	Atyrau	Education	Female	8
P6	Atyrau	Transportation & Logistics	Male	14
P7	Turkestan	Construction	Male	6
P8	Turkestan	Agriculture	Female	11
P9	Turkestan	Tourism	Female	9
P10	Kostanay	Agriculture	Male	13
P11	Kostanay	Construction	Male	5
P12	Kostanay	Mechanical Engineering	Female	10
P13	Almaty	Transportation & Logistics	Male	7
P14	Almaty	Tourism	Female	6
P15	Almaty	Energy	Male	9
P16	Atyrau	Agriculture	Male	8
P17	Atyrau	Energy	Female	12
P18	Atyrau	Construction	Male	10

As seen in Table 1, the participants are sector employees working in the regions of Mangystau, Atyrau, Turkestan, Kostanay, and Almaty. The participants have attended trainings based on regional human resources development standards and work in eight main sectors active in these regions. These are transportation and logistics, energy, construction, agriculture, tourism, education, mechanical engineering, and the petrochemical industry.

In the group of 18 participants in total, the gender distribution is 10 male and 8 female. The sectoral diversity of the participants allows the research to provide a perspective to understand the effects on different professions. The professional seniority of the participants ranges from 5 to 15 years and includes employees with intermediate and advanced experience.

Data Collection Tools

In the study, a semi-structured interview form, which was determined in advance but allowed flexibility, was used as the data collection tool. This method allows both the researcher to collect

data on specific questions and the participants to share their own experiences in detail (Kvale & Brinkmann, 2009).

Interviews were conducted with experts from the priority sectors. A total of 15 experts participated in the interviews, with 5 experts selected from each sector. This process was carried out during the preliminary analysis phase (for sample material, see Appendix 1).

Instrument validation

According to this process, the main interview form was prepared to deeply understand the effect of the vocational training that the participants received based on regional standards on their job performance. The form was first developed as a draft form in line with the purposes of the study with 8 questions and submitted to the evaluations of two field experts to ensure content validity. After expert opinion, 2 questions that overlapped with each other and did not serve the purpose were removed from the form, and corrections were made on 2 questions. In addition, the interview form was subjected to a preliminary test on 2 participants, and necessary adjustments were made.

In addition to demographic information, the questions in the interview form cover the effects of education on problem-solving and decision-making processes, its contribution to innovative thinking and new idea generation skills, its reflections on collaboration within the team, useful practices, and suggestions for future training content.

Application of the Training

The implementation process of this research was carried out within the framework of a training program lasting approximately two months between October and December 2024. Foresight sessions were conducted as part of the study. Within these sessions, efforts were made to identify new occupations to be included in the regional occupational standards. Participants discussed the prevailing trends within the sectors, evaluated potential threats and opportunities, and proposed strategies to mitigate those threats. Furthermore, they analyzed which existing occupations might become obsolete, which roles would require new skill sets, and which entirely new occupations might emerge in the future. In each region, foresight activities were carried out over a two-day period. On the second day, discussions focused on determining the new job roles and functions

that would arise, along with the specific skills required for these roles, including cross-sectoral and transferable competencies.

Participants participated in activities based on the RF methodologies. The aim of the training program is to increase the work performance of employees, develop innovative thinking skills, and advance competencies such as generating new ideas, problem-solving, decision-making, and teamwork. This constitutes a future objective whereby the educational programs of universities in the six regions will be updated, and new students will begin their education under these revised curricula. The primary aim of the new educational programs is to prepare future professionals who will be able to respond to these objectives and implement them effectively.

During the program, basic stages such as preliminary preparation, in-house analyses, foresight sessions, scenario development, and result reporting were implemented, and future competency maps, strategy drafts, and projection scenarios were created with the participants. Within the scope of the RF methodology, more flexible and participant-oriented short-term foresights were developed. With the STF approach, long-term skill needs were analyzed in detail. Throughout the training, various workshops, group studies, and practical activities were carried out for the following skills:

- Improving business performance
- Innovative thinking and creative solution generation
- Effective communication and collaboration within the team
- Accelerating problem-solving and decision-making processes
- Recognizing and analyzing technology-based future skills
- Career planning and competency mapping

In this process, participants were actively involved in group work, scenario creation sessions with experts, strategic future planning, and skill mapping activities. Thus, the trainings did not only provide theoretical knowledge but were also designed as a practical process where participants gained direct experience. At the end of the trainings, participants developed action plans suitable for their sectors and provided feedback.

Table 2

Stages and Contents of the Training Program

Stages	Explanation	Methods
Foresight Skills Training	Participants were informed about the basic concepts of RF and STF methodologies.	Presentation, seminar, sample analysis
Pre-Foresight	Regional workforce and sector analyses were conducted; sectoral needs were defined.	SWOT, literature review, survey
Foresight Sessions	Strategic scenarios and skill maps were developed.	Group work, scenario analysis
Career Guidance	Awareness-raising events were organized for professions and skills in demand.	Panel, interview, case study
Implementation and Monitoring (Post-F)	The applicability of the developed strategy and skill maps was evaluated.	Evaluation reports, self-assessment

As seen in Table 2, the training program is structured in five basic stages, and each stage is implemented with various methods in line with specific objectives. In the first stage, Foresight Skills Training, basic concepts related to RF methodology were presented to the participants, and presentations, seminars, and sample analyses were carried out within this framework. This process aimed to ensure that the participants are prepared for the next stages of the process. In the second stage, Pre-Foresight, analyses were conducted regarding the labor market and sectors in the relevant regions, and sectoral needs were determined. Methods such as SWOT analyses, literature reviews, and surveys were used at this stage. Thus, a data-based basis was created for the training process. In the third stage, Foresight Sessions were organized. In these sessions, participants created future scenarios through group work and developed skill maps that would be needed in the labor market. Scenario analyses and interactive discussions were the basic applications of this stage. In the fourth stage, Career Guidance, activities aimed at increasing the awareness of participants about the professions in demand and the competencies required for these professions were carried out. In this context, panels, interviews, and case studies were organized. In the last stage, Implementation and Monitoring (Post-Foresight), the applicability of the strategy suggestions and skill maps developed during the training process was evaluated and supported with self-assessment reports. This stage aimed to ensure permanence by concretizing the obtained outputs and transferring the results to the field.

Data Collection

The research data were collected through one-on-one interviews with participants of the training program based on regional human resources development standards in the Kazakhstan labor market. They were invited to an interview at a previously scheduled date at the end of the training, and the interviews lasted approximately 25-45 minutes. Voice recordings were made with the consent of the participants. The purpose of the research, the average duration, and the data collection method were clearly stated to the participants, and they were informed that they could withdraw from the research at any time. They were informed that the data was collected for scientific purposes only and the participant information would be anonymized and stored in an encrypted computer with a number given to each participant. They are also told that ethical rules would be followed during the reporting process.

Procedures

In order to increase validity and reliability, the interview was recorded with a voice recorder and then transcribed onto paper by the researcher. Participants were briefly informed about the purpose of the study before the interviews and were asked to sign a consent form stating that they participated in the study voluntarily. During the interview, the researcher took care to ask the questions in order and repeated the questions when there was something that was not clear. In addition, participants were briefly informed about the study so that they could comfortably express their ideas without hesitation and felt free to ask any questions regarding the study. They were given the opportunity to withdraw from the study at any time in case of feeling uncomfortable. It was stated that their real identities would not be reported in the study, that each participant would be given a participant code, and that the information obtained would be evaluated only for scientific purposes.

Data Analysis

The data obtained in the study were analyzed using the content analysis method. It is an analytical approach that involves systematic coding of qualitative data and the determination of themes (Braun & Clarke, 2006). To ensure the reliability of the study, researcher notes were kept throughout the data analysis process, direct quotations were included, and a comparative analysis

was conducted by consulting a second researcher in coding the data. During this process, care was taken to present the findings in a transparent and auditable manner. In this context, the reliability formula suggested by Miles and Huberman (1994) was used to test the reliability of the codes and themes obtained within the scope of the study, and 78% agreement was achieved between the two independent evaluators. This rate shows that the reliability was at an acceptable level during the analysis process of the study.

Findings

Findings regarding the First Research Question

The findings regarding the first question of the study, "How do employees perceive the contributions of regional standards-based vocational training to their work performance in the Kazakhstan labor market? are presented in Table 3.

Table 3

Participants' Perceptions on the Contributions of Regional Standards-Based Vocational Training to Work Performance

Theme	Subtheme	Category	Participant Opinions
Increase in Work Performance/Task Efficiency	Increased Productivity	Time Management	- *"I can now complete my work in a shorter time. I learned to plan my time." (P6)* - *"My awareness of using time efficiently has increased." (P3)* - *"I can now easily meet deadlines that I was previously stuck on." (P10)* - *"Working according to a plan was very difficult for me, but I acquired this habit through the training." (P5)*
		Prioritisation Skill	- *"I can better distinguish what is more important in my daily work." (P12) –* -*"I am no longer confused about what is urgent with what is important." (P7)* - *"I realized that I needed to restructure my work order." (P1)* - *"Setting priorities and proceeding accordingly made my work easier." (P8)*
	Production Increase	Innovative Approach	- *"Thanks to the creative thinking techniques I learned in the training, I can produce more solutions." (P3)* - *"I, always, used to try the same methods. Now I am not afraid to try new ideas." (P15)* - *"I see that my creativity is starting to reflect on my work." (P14)* - *"I started to suggest innovations in the institution." (P2)*
		Goal-oriented Work	- *"I now shape my work in line with company goals." (P10)* - *"I realized that, working in a goal-oriented manner saves time." (P4)*

Theme	Subtheme	Category	Participant Opinions
			- "I observed that working by seeing the big picture increases performance." (P9)
Problem solving and Decision Making	Way of Approach	Analytical Thinking	*- "I approach problems more structurally. Breaking them down into parts makes it easier to solve." (P13)* *- "My problem analysis skills have improved." (P17)* *- "I have acquired the habit of questioning the reasons." (P12)* *- "I have started to act by thinking about the reason for each step." (P6)*
		Deciding depending on Data	*- "I now base my decisions on data instead of intuition." (P8)* *- "Reports and analysis results have become more meaningful to me." (P14)* *- "I learned how to read and interpret data in training." (P5)* *- "My decisions have become more grounded and debatable." (P1)*
	Strategic Approach	Alternative Production	*- "I don't settle for a single solution, I create several options." (P2)* *- "We learned how to develop alternative scenarios in the training and I started to implement them." (P4)* *- "Learning that every plan has a plan B gave me confidence." (P11)* *- "I understood alternative thinking thanks to team work." (P18)*
		Predicting Risks	*- "Learning to intervene before a problem occurs was a great gain." (P9)* *- "I started to see the risks more clearly with scenario development exercises." (P15)* *- "I can now identify possible risks and take precautions." (P16)* *- "Risk analysis was an abstract concept in education, but now it is my daily task." (P7)*

The findings obtained within the scope of the study show that the vocational training program has multidimensional and had positive effects on the participants' work performance. These effects are generally grouped under three main themes. These are increase in work performance, development in problem solving and decision-making skills, and acquisition of strategic approach.

Firstly, under the theme of increasing work performance, it was observed that the participants made a significant improvement in their task efficiency. It is understood that the participants started to exhibit positive behaviors towards time planning, especially in sub-dimensions such as time management and prioritization skills. The statement of Participant 6 clearly reflects this situation: "*I can now complete my work in a shorter time. I learned to plan my time*." Similarly, regarding prioritization, P12 stated the following opinion: "*I can better distinguish what is more important in my daily work*." These findings show that the training program made the daily workflow more strategic and effective.

Another important development area regarding work performance was increased productivity. Participants stated that they adopted more innovative approaches and integrated more creative solutions into their work after the training. For example, P3 expressed this transformation by saying, "*Thanks to the creative thinking techniques I learned in the training, I can produce more solutions.*" It was also stated that their goal-oriented working skills had strengthened. Participants stated that they acted more strategically by making individual plans compatible with corporate goals (for example, P10: "*I now shape my work in line with company goals.")*. In the second main theme, problem-solving and decision-making skills, it was determined that especially their analytical thinking skills had strengthened. Participants stated that they had made progress in their solution-producing skills by approaching problems in a more structured and fragmented manner. P13 expressed this situation as follows: "*I approach problems more structurally. Breaking them down into parts makes it easier to solve.*" Similarly, their data-based decision-making skills had also improved. Participants emphasized that they now adopted decision-making processes based on analysis and reports rather than instinctive approaches (for example, P8: "*I now base my decisions on data instead of intuition."* This demonstrates the power of education to integrate cognitive skills into concrete decision-making processes.

The third theme, strategic approach, revealed that the participants had significant gains in both generating alternatives in uncertain environments and risk prediction skills. Most of the participants stated that they were no longer satisfied with a single solution, but had acquired the habit of developing alternative scenarios. This situation is supported by the following statement of P2: "*I don't settle for a single solution, I create several options*." Similarly, a significant improvement was observed in predicting risks. The participants stated that they foresaw the problems they might encounter in the future and developed precautions accordingly. For example, P9 summarized his post-training gain by saying, "*Learning to intervene before a problem occurs was a great gain.*" The findings show that the vocational training program created significant positive effects on the participants' basic work performance indicators such as task efficiency, innovation, decision-making and strategic thinking. These findings, in which the participants developed at both cognitive and behavioral levels, support the applicability and effectiveness of training programs based on regional human resources development standards.

Findings regarding the Second Research Question

The findings regarding the second question of the study, "In what ways do participants report improvements in innovation-related competencies following the training?" are presented in Table 4.

Table 4

Participants' Perceptions on the Contributions of Vocational Training on Participants' Problem Solving andDecision-Making Skills

Theme	Subtheme	Category	Participant Opinions
Development in Problem-Solving Skills	Cognitive Procedural Development	Analytical Thinking	*- "I am no longer just interested in the visible part of the problem; I am trying to understand the dynamics underneath." (P3)- "I have learned to reach more than one conclusion by interpreting the data." (P6)- "I now take more parameters into account when evaluating situations." (P12)- "I can simplify a complex problem in my mind." (P17)- "I used to act instinctively, now I give more importance to the causality relationship." (P14)*
		Systematic Approach	*- "I now determine small steps for myself to solve problems." (P5)- "Instead of looking for a solution at once without a plan, I establish the process from beginning to end." (P9)- "First, I define the problem and then I start to produce solutions." (P7)*
	The Usage of Strategy and Technique	Developing Alternative	*- "Developing different solutions without sticking to a plan made me more flexible." (P11)- "Thinking about alternative solutions saves time." (P2)- "I have made it a habit to produce three different solutions instead of a single solution." (P4)- "Now I constantly ask the question 'what if this doesn't work?" (P10)- "Weighing the possibilities before making a decision gives me freedom of choice." (P13)*
		Risk Prediction and Taking Precautions	*- "After the scenario studies in the training, I can notice possible problems in advance." (P8)- "I do not take a step without thinking about the possibility of a situation getting worse." (P14)- "Thanks to alternative plans, crises affect me much less." (P6)*
	Emotional and Behavioral Reflection	Stress Management	*- "I no longer get tangled up in times of crisis." (P15)- "I learned to manage stress instead of suppressing it." (P1)- "I gained composure, this was the biggest development for me." (P16)- "As I got my panic under control, it became easier for me to produce solutions." (P7)- "My ability to make decisions under pressure or in discussions improved." (P18)*
Development in the Decision-Making Process	Methodological Differences in the Decision-Making Process	Data-based Decision Making	*- "Instead of making intuitive decisions, I now act according to analysis results." (P5)- "I prefer to trust numbers instead of my instincts." (P13)- "Thinking based on data gives confidence to both myself and my team." (P8)- "I try not to make decisions without observation and analysis." (P9)- "The graph reading skill I learned in the training was very useful for me." (P2)*
		Systematic Decision Process	*- "I plan my decisions by prioritizing." (P3)- "I put my decision-making process in writing and share it with the team." (P17)- "I realized that proceeding step by step reduces risks." (P10)*

Theme	Subtheme	Category	Participant Opinions
	Individual Competence Increase	Self-Confidence	*- "I am now clearer when making decisions because the information I rely on is solid." (P4)- "Before the training, I was constantly consulting, now I make more independent decisions." (P12)- "My ability to defend my own decisions has improved." (P11)- "I can take the initiative at critical moments." (P16)- "My hesitation period has decreased when making decisions." (P1)*
		Taking Responsibilities	*- "I own the results of the decisions I make." (P9)- "Taking the initiative no longer puts pressure on me." (P7)- "I prefer to take responsibility instead of sharing it." (P18)*

The research findings presented in Table 4 show that the implemented vocational training program created significant improvements in the participants' problem-solving and decision-making skills.

Firstly, the development in problem-solving skills is reflected in the remarkable changes in the participants' approach to problems. In this context, it is seen that the capacity for analytical thinking has increased significantly. The participants stated that they have developed a more structured and multi-dimensional perspective towards solving complex situations. For example, P3 summarized this gain as follows: *"I am no longer content with the visible part of the problem, I am trying to understand the dynamics underneath."* This type of cognitive transformation makes it possible not only to analyze events but also to produce more accurate solutions by grasping causal relationships. In addition, another prominent finding is the tendency to develop a systematic approach. The participants stated that they planned the problem-solving process in stages and moved away from sudden, reactive solutions. P5's statement, "*I now determine small steps for myself to solve problems."* is a clear indicator of this transformation. It is also understood that the ability to produce alternatives and the capacity to design different solutions has increased during the problem-solving process. This strategic approach enables the participants to give more flexible responses to situations involving uncertainty and variability. P11's statement, "*Developing different solutions without sticking to a plan has made me more flexible.*" view emphasizes this achievement.

It was observed that the participants were more sensitive and prepared in terms of risk prediction and taking precautions. It was stated that scenario-based studies in particular provided the habit of planning in advance against possible problems (e.g. P8: "*After the scenario studies in the training, I can notice possible problems in advance.").* This skill is an important development area that strengthens the capacity for proactive intervention in business life. On an emotional and behavioral

level, a serious development was observed in stress management skills. Participants stated that they can act more controlled and solution-oriented, especially in times of crisis. This development supports both individual psychological resilience and effective decision-making within the team. P15's statement, "*My hands and feet no longer get tangled up in times of crisis*," is remarkable in this context.

The second main effect of the training can be defined as the development in decision-making processes. In this area, it was determined that data-based decision-making skills in particular were strengthened. Participants emphasized that they moved away from intuitive approaches and focused on making decisions based on analysis and objective data. P5's statement, "*Instead of making intuitive decisions, I now act according to analysis results.*" directly demonstrates this change. In addition, the tendency to develop a systematic decision-making process is also striking. Participants stated that they structured their decision-making processes in a planned, sequential manner and in a way that included sharing within the team. This systematic structure increases both decision quality and team harmony (P3: "*I plan my decisions by prioritizing."*). Significant gains were also reported in terms of individual competence. There were strong statements in the themes of self-confidence and taking responsibility in particular. Participants stated that they felt more competent in matters such as standing behind the decisions they made, taking initiative, and defending their decisions. The following statement from P4 clearly demonstrates this situation: "*I am now clearer when making decisions because the information I base them on is solid."* In this context, the vocational training program has significantly improved the participants' problem-solving and decision-making competencies in terms of both cognitive strategy development and emotional balance. This development has qualitatively transformed not only the participants' individual business skills but also their contributions within the team. The multi-layered structure of the training program enables the permanence of these results and their integration into the work environment.

Findings Regarding the Third Research Question

The findings regarding the third question of the research, "How do employees describe changes in their teamwork and collaboration practices after participating in the training?" are presented in Table 5.

Table 5

Participant Reflections on Teamwork and Collaboration Outcomes After Training

Theme	Sub-Theme	Category	Participant Opinion
Improvement in Communication and Interaction Within the Team	Increase in Communication Skills	Clear Expressions and Feedback	*- "I can now express my thoughts more clearly and constructively." (P6)- "I can give feedback to my colleagues directly without hurting them." (P3)- "I defend my own ideas more easily, I do not hesitate any more." (P13)- "I speak more carefully to reduce misunderstandings in communication." (P17)*
		Listening and Comprehension	*- "I started to listen to others more carefully." (P5)- "I realized that understanding is important, not just explaining." (P9)- "I always try to understand the ideas within the team." (P2)*
	Empathy and Respect	Openness to Different Opinions	*- "Instead of conflicting with different ideas, I try to understand them." (P8)- "I realized more within the team that every opinion has a value." (P12)- "I used to object immediately, now I listen first and then discuss." (P14)- "I started to prioritize compromise in disagreements." (P10)- "Respecting the contribution of each team member increased cooperation." (P16)*
Participation in Teamwork and Collaboration	Active Participation	Sharing Tasks and Taking Responsibility	*- "I am now taking part in projects more voluntarily." (P11)- "I have started to approach the distribution of work more fairly." (P4)- "I take ownership not only of my own work but also of the team's work." (P15)- "Sharing the team's load has increased work efficiency." (P1)*
		Volunteering and Providing Support	*- "I help my teammates more in the areas where they have difficulty." (P7)- "I no longer see the work as just doing my share." (P18)- "We started working in a way that complements each other." (P3)*
	Change in Team Dynamics	Collaborative Decision Making	*- "No decisions are made in meetings without getting everyone's opinion." (P9)- "The understanding of producing common sense has developed." (P6)- "Instead of insisting on my own solution, I try to find the best one together with the team." (P13)*
		Trust and Solidarity	*- "I started to trust my teammates more." (P12)- "A sense of unity emerged around common goals." (P5)- "I felt the power of producing together better." (P8)- "Transitioning from individuality to team spirit was very priceless for me." (P10)*
		Belonging to the Team	*- "I feel more like a part of that group now." (P14)- "I realized that I was visible in the team, this motivated me." (P17)- "I feel like I am not alone. I'm a part of a whole." (P16)*

Participant views on teamwork and collaboration after the training revealed that there were significant improvements in various dimensions such as communication, empathy, active participation and belonging. Participants stated that they made significant progress especially in

their communication skills. A positive change was observed in terms of open expression and feedback. For example, one participant expressed this situation with the following statement, *"I can now express my thoughts more clearly and constructively."* (P6). It was also observed that there was an improvement in listening and understanding skills. Participants attached importance not only to speaking but also to understanding others.

Under the theme of empathy and respect, it is understood that a more open attitude towards different opinions has been developed. Participants stated that they prefer compromise instead of conflict in disagreement situations and that they value each contribution of the team members more. In this context, one participant said, *"Respecting the contribution of each team member increased cooperation."* (P16). In terms of participation in teamwork, it is seen that volunteering and taking responsibility in task sharing has increased. Participants stated that they care not only about their own tasks but also about the overall success of the team. The statement, *"I take ownership of not only my own task but also the task of the team."* (P15) supports this situation.

In team dynamics, it was stated that a collaborative approach was adopted in decision-making processes and that feelings of trust and solidarity were strengthened. Participants stated that they were united in line with common goals and stated the following opinion: *"I felt the power of producing together better."* (P8). Finally, it was reported that the sense of belonging increased and team members felt more visible and motivated as part of the group (P14, P16, P17).

Findings Regarding the Fourth Research Question

The findings regarding the fourth question of the research, "What are participants' views on the strengths of the training design, and what suggestions do they offer for improving future training programs?" are presented in Table 6.

Table 6

Participants' Reflections on Training Content and Improvement Areas

Theme	Subtheme	Category	Participant Opinions
Most Useful Applications in Current Educational Content	Interactive Learning Tools	Group Work and Scenario Development	*- "I both thought and had fun during the scenario creation sessions." (P5)- "I developed different perspectives thanks to the discussions within the group." (P11)- "I learned a lot from my teammates while creating solutions for my own sector." (P6)- "Analyzing situations like in real life was very*

Theme	Subtheme	Category	Participant Opinions
			educational." (P13)- "Writing a scenario made me think about the future." (P8)
		Applied Workshops	*- "Learning the concepts in practice was more permanent." (P1)- "Practical applications were more meaningful to me instead of theory." (P12)- "The small exercises I did in the activities helped me grasp the subject immediately." (P3)*
	Individual Reflection Tools	Self-Assessment Reports	*- "Self-assessment was very useful in terms of observing my own development." (P4)- "Realizing what I learned increased my motivation." (P15)- "I documented my development via written reports." (P18)*
Evaluations on Educational Method and Content Design	Methodological Strengths	Participant-Centered Approach	*- "It was very effective to have a participation-oriented system instead of classical lectures." (P6)- "Being given the right to speak included even the shy ones like me in the process." (P2)- "There was no hierarchy in education, everyone contributed equally." (P9)*
		Industry Focused Content Alignment	*- "There were examples in the training that were exactly the same as our sector." (P14)- "I developed strategies for my own field, this was very valuable." (P10)- "Offering specific content, not general, made a difference." (P7)*
Participant Suggestions for Future Trainings	Skill-Focused Development Areas	Digital Transformation and Technology Literacy	*- "Technology skills should be included more in training." (P16)- "I would like to see topics such as artificial intelligence and automation added." (P8)- "More practical information should be given on the use of digital tools." (P17)- "Things such as data analysis and dashboards should be demonstrated in practice." (P3)*
		Strategic Leadership and Crisis Management	*- "I would like to learn more about leadership in times of crisis." (P13)- "Modules on quick decision making and leadership skills can be added." (P4)- "More case studies should be conducted on uncertainty management." (P15)*
	Contextual Depth and Scope	Industry Based Modules	*- "If there were a module specific to each sector, efficiency would increase a lot." (P10)- "The trainings were a bit too general; there should be customization for the construction sector." (P11)- "Different content is needed for participants in the agricultural sector." (P18)*
		Career Planning and Mentoring	*- "It would be useful to be paired with experts who would provide us with mentorship." (P5)- "The content for career planning was very limited, it should be increased." (P12)- "If we had created a personal career map at the end of the training, the effect would have been permanent." (P14)- "One-on-one guidance should be provided about future career paths." (P1)*

Participant opinions include comprehensive evaluations regarding the effectiveness and development of the training content. In the current training content, interactive learning tools, group work and scenario development applications were among the most useful elements. Participants stated that these sessions supported intellectual development and creative contribution. The statement *"I both thought and had fun during the scenario development sessions."* (P5) reflects this effect. Applied workshops were found to be effective in terms of

concretizing the concepts and ensuring permanent learning (P1, P3, P12). In addition, self-assessment reports, which are among the individual reflection tools, played an important role in the participants' ability to follow their personal development. The statement *"Self-assessment was very useful in terms of being able to observe my own development."* (P4) exemplifies this situation.

In the evaluations regarding the education method and content design, the effectiveness of the participant-centered approach came to the fore. Participants stated that an interactive and participation-oriented approach instead of classical education allowed especially shy individuals to be included in the process (P2, P6). In addition, the fact that the content was compatible and customized with the sector made it easier to associate education with concrete outputs. The statement, "*There were examples in education that exactly matched our sector.*" (P14) shows the effect of this harmony.

Suggestions for future trainings focus on the need for skill development and content enrichment. Participants requested more emphasis on technological topics such as digital transformation, artificial intelligence, automation and data analysis (P3, P8, P16). In addition, it was suggested that modules on skills such as strategic leadership, crisis management and dealing with uncertainty should be added. The statement *"More case studies should be conducted on uncertainty management"* (P15) reflects this expectation.

In terms of content depth, the need to create sector-based modules was expressed. It was stated that the trainings remained at a general level and could not adequately respond to the needs of some sectors. In addition, the lack of content supporting individual development such as career planning and mentoring was emphasized, and it was stated that expert support and structured guidance processes would be useful in these areas. The statement *"If we had created a personal career map at the end of the training, its effect would be permanent."* (P14) clearly reveals the expectation in this direction.

Discussion and Conclusion

This study explored the perceived contributions of trainings based on regional human resources development standards in the Kazakhstan labor market on employees' work performance and innovation skills were examined through participants' self-reports. The findings indicate that the trainings generated multidimensional benefits and that participants reported noticeable

transformations at both cognitive and behavioral levels, extending beyond technical or professional competences. Vocational training, therefore, appears to contribute not only to technical knowledge but also to individuals' effectiveness, interaction, and strategic approaches in workplace contexts.

According to the data obtained, improvements in job performance were particularly associated with participants' development in time management and task prioritization skills. The participant-centered, practice-oriented, and scenario-based design of the training programs encouraged a more systematic and planned approach to work processes. As a result, participants emphasized not only a more efficient use of time but also of resources in professional settings. They further reported that prioritizing tasks had a positive effect not only on their own productivity but also on the workflow and efficiency of their teams. In addition, enhancements in productivity were linked to the incorporation of creative thinking techniques and innovative problem-solving strategies within the training content. Participants noted that these skills enabled them to generate more creative and flexible solutions, moving beyond routine approaches and thereby enhancing their capacity to deal with unexpected workplace challenges.

Findings related to problem-solving and decision-making skills suggest that the trainings supported the development of analytical thinking and systematic approaches. Participants reported increased ability to deconstruct problems, identify cause–effect relationships, and produce alternative solutions in complex situations. They also indicated that their decision-making processes shifted from relying primarily on intuition or prior experience toward using data-driven and evidence-based reasoning. This transition was associated with greater consistency, transparency, and quality in both individual and team-level decisions, contributing to enhanced trust, accountability, and shared responsibility within the organizational environment. Furthermore, the reported improvement in strategic thinking—particularly in scenario planning, risk prediction, and preventive strategy development—suggests that the training facilitated the application of theoretical knowledge to real-world contexts. Participants indicated that they became more adept at generating multiple alternatives and handling crises more effectively, which also fostered growth in stress management and emotional regulation.

In terms of teamwork, participants noted that the training contributed to the development of social and communication skills. Gains were reflected in behaviors such as active listening, clear

expression, and constructive feedback. Empathy and openness to diverse perspectives emerged as another critical outcome, with participants highlighting their increased appreciation of different viewpoints. This shift fostered inclusivity and a more democratic organizational climate. Moreover, participants described greater willingness to volunteer and take responsibility within teams, which they attributed to a heightened sense of belonging. Training activities that emphasized individual visibility, recognition of differences, and appreciation of contributions were considered instrumental in reinforcing this sense of value and commitment. Collectively, these changes suggest that participants began to see themselves not only as individual actors but also as integral members of a collective, strengthening both employee engagement and organizational loyalty.

Suggestions for future training programs emphasized the need for modules on digital transformation, technology literacy, crisis management, and career planning. Participants also underlined the importance of sector-specific content and the inclusion of individual mentoring mechanisms. These recommendations highlight the participants' perception that vocational training should continue to evolve in alignment with both technological advancements and sectoral needs.

Education policies and human resource management practices occupy a pivotal position in responding to the evolving requirements of labor markets and in strategically fostering human capital development, as observed in various standards-based reform initiatives globally (Brodny & Tutak, 2024; Olowookere et al., 2022). Human resource management adopts a holistic perspective that encompasses recruitment, development, motivation, and evaluation processes, with the overarching aim of achieving both individual and organizational objectives (Choiriyah & Riyanto, 2021). Well-structured education and training programs are shown to enhance employees' knowledge, skills, and attitudes, thereby exerting a direct positive influence on work performance (Chapagain et al., 2022; Bartel, 1994).

Innovation-related competencies within the workplace are recognized as multidimensional, incorporating essential skills such as creativity, problem-solving, collaboration, and technological proficiency. Creativity encompasses cognitive processes that enable individuals to generate original ideas and convert them into innovative solutions (Nakano & Wechsler, 2018). Amabile (1988) conceptualizes creativity as dependent on individual motivation and cognitive flexibility,

while emphasizing the necessity of supportive organizational contexts for its realization. Problem-solving, on the other hand, involves identifying, analyzing, and formulating effective solutions to encountered challenges and is closely linked to technological innovation processes (Mwantu et al., 2021). Collaboration serves as a foundational element of innovation by facilitating knowledge sharing, joint decision-making, and collective generation of novel ideas among employees (Hutchins & Burke, 2007).

The literature further highlights that innovation skills are strengthened by complementary social competencies, including self-management, openness to learning, planning, leadership, and adaptability (Husain et al., 2016; Ramli et al., 2010; Sekerbayeva et al., 2023). In the context of digital transformation, digital literacy, data analysis capabilities, and the ability to interact effectively with technological systems are increasingly regarded as integral aspects of innovation (Kornelakis & Petrakaki, 2020; Pejic-Bach et al., 2020). In parallel, the application of analytical approaches such as text mining and data analytics has been shown to support the identification and measurement of innovation-related competencies demanded in labor markets (Bektaş et al., 2015; Mabe et al., 2015). Conversely, skill-job mismatches significantly constrain innovation potential by preventing the effective utilization of individuals' capacities within the work environment (Flisi et al., 2017; Shin & Bills, 2021).

In this context, this research reveals that regional human resources-based training programs implemented in the Kazakhstan labor market generated lasting and significant perceived impacts on individuals' work performance, innovation capacity, decision-making skills and social functionality. Supporting training programs with systematic, sector-compatible and participant-centered structures is considered a strategic necessity in terms of sustainable development of workforce quality. The findings show that trainings have the potential to integrate individual development with institutional goals and thus contribute to regional development goals. Training programs are seen as one of the most critical elements that directly and indirectly affect work performance. Ndunguru (2015) shows that on-the-job training significantly increases the work performance of secondary school teachers. In addition, this research reveals that training activities strengthen educators' pedagogical skills and classroom management competencies. Martins, Zerbini and Medina (2019) examined the effects of online training on behavioral transfer and work performance in a large-scale organization and stated that the performance increase was achieved thanks to practical training modules and continuous feedback mechanisms. However, Chapagain

et al. (2022) reveal that the work environment plays a mediating role in the reflection of training effectiveness on work performance. Because a positive work environment supports the integration of learned information into work processes and thus performance increase. In addition, Choiriyah and Riyanto (2021) show in their studies that trainings that develop skills and competencies improve employees' work performance through factors such as job satisfaction and commitment. Ali et al. (2018) stated that managerial practices accelerate the integration of competencies supported by training into work performance. In this context, the design and implementation of training programs gain great importance in increasing work performance. In the evaluation of training effectiveness, both participant feedback and work performance indicators are analyzed together. These analyzes reveal how training contributes to both individual and organizational performance goals. The findings of Ndunguru (2015) and Martins et al. (2019) show that practical training and continuous mentoring processes permanently improve work performance.

This study, although it has provided important findings to understand the impact of vocational trainings based on regional human resources development standards on work performance and innovation skills in the Kazakhstan labor market, also carries certain limitations. Firstly, the fact that the study was conducted with a qualitative research model limits the generalizability of the findings. The results obtained should be evaluated within a specific context and should not be directly reflected in the entire Kazakhstan labor market. In addition, the study analyzed 18 participants. Although this sample provides a heterogeneous structure, the limited number of participants may have caused more specific dynamics specific to some sectors or regions to be overlooked. It should also be taken into account that the data was collected based solely on participant statements. Especially when it comes to skills that are more complex to measure, such as work performance and innovation, findings that are not supported by objective performance data have limited explanatory power.

Suggestions

The findings of the study provide important outputs for both academic studies and practitioners. First of all, the first thing to be suggested for researchers who will conduct similar studies is to use a mixed method approach in the future. Quantitative analyses supported by qualitative data can provide a more holistic framework, especially in terms of observing concrete outputs such as performance. Follow-up studies that evaluate the effects of training after six months or one year

are important in terms of revealing the sustainability and long-term contributions of such trainings. When evaluated from the perspective of training designers, the findings of this study indicate that training programs should be structured in a more sectoral harmony. Participants found it important to integrate sector-specific examples, scenarios and strategic practices into the training content as well as general skills. For this reason, it is recommended to focus on sector-based modules in training programs and that individual guidance, self-assessment and feedback mechanisms be implemented in a more structured manner in future trainings. These mechanisms can be important tools for participants to monitor their development processes and realize their strong and open-to-development aspects. Trainings should not only be planned as content transfer, but also as a process of creating individual awareness.

The most fundamental message of the study for employment planners is that vocational development programs are important tools not only for development of skills but also for regional improvement and sectoral stability. Trainings directly affect not only individuals but also the institutions and local economies to which they are affiliated. Therefore, human resources development policies should be designed in a way that is sensitive to regional dynamics. The present study has shown that training programs have multidimensional changes on employees. However, it has also revealed that such practices are open to continuous development.

Acknowledgment

This study is funded by the Committee on Science and Higher Education of the Ministry of Science and Higher Education of the Republic of Kazakhstan (Grant No BR21882382).

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Appendix

Details of Expert Interviews Conducted During the Preliminary Analysis Phase

EXPERT SURVEY GUİDE BY IN-DEPTH INTERVIEW METHOD

Direction: PRIORITY OF THE ECONOMY

BLOCK 1. THE DEVELOPMENT OF THE REGION

1. By the way, how have you explained the current state of socio-economic development of the region?
2. What changes, key events, have affected the region's development over the last 5 years?

BLOCK 2. PRIORITY SECTORS OF THE REGION: KEY CRITERIA AND FACTORS

3. We are glad to see that there are 3 sectors of the economy that, in your opinion, have a strategic importance for the development of the region
4. Prosim Yours in the interval from 1 to 5 to assess the reflected industries on the following criteria *(where «5» is the estimation of the value of the component, "1" – name):* **strategic significance, competitiveness, social significance**

In your opinion, in the interval from 1 to 5, assess the published industries on the following criteria (where "5" is the estimation of the value of the component, "1" - the name):					
Strategic significance					
	1	2	3	4	5
Industry (manufactured, deprecating, processing)					
Agriculture					
IT and information technologies					
Medicine and health care					
Tourism and business					
Education and science					
Logistics					
Construction					
Other _____					
Competitiveness					
Industry (manufactured, deprecating, processing)					
Agriculture					
IT and information technologies					
Medicine and health care					
Tourism and business					
Education and science					
Logistics					
Construction					

Other					
Social significance					
Industry (manufactured, deprecating, processing)					
Agriculture					
IT and information technologies					
Medicine and health care					
Tourism and business					
Education and science					
Logistics					
Construction					
Other _____					

5. To assess the importance of the following factors in the development of public sectors *(where «5» is the estimation of the value of the component, "1" – name):* **innovation and technological progress; development of human capital (education and personnel); support of the state, market needs, social and environmental requirements**

To assess the significance of the following factors, influenced by the development of public sectors *(where "5" is the estimation of the value of the component, "1" - the name):*					
	1	2	3	4	5
Innovation and technological progress					
Industry (manufactured, deprecating, processing)					
Agriculture					
IT and information technologies					
Medicine and health care					
Tourism and business					
Education and science					
Logistics					
Construction					
Other					
Development of human capital (education and personnel)					
Industry (manufactured, deprecating, processing)					
Agriculture					
IT and information technologies					
Medicine and health care					
Tourism and business					
Education and science					
Logistics					

Construction					
Other					
Support of the state					
Industry (manufactured, deprecating, processing)					
Agriculture					
IT and information technologies					
Medicine and health care					
Tourism and business					
Education and science					
Logistics					
Construction					
Other _____					
Market needs					
Industry (manufactured, deprecating, processing)					
Agriculture					
IT and information technologies					
Medicine and health care					
Tourism and business					
Education and science					
Logistics					
Construction					
Other					
Social and environmental requirements					
Industry (manufactured, deprecating, processing)					
Agriculture					
IT and information technologies					
Medicine and health care					
Tourism and business					
Education and science					
Logistics					
Construction					
Other					

On questions No. 4 and No. 5, it is possible to fill in the prepared table or fill in the respondent's own answer. Get more detailed information about our name and our assessment

BLOCK 3. STAFFING CONDITION AND LEVEL OF PERSONNEL TRAINING

6. By the way, how have you explained the current state of development of the sphere of human resources of the region?
7. How do you think that the education system of the region will help you to meet the needs of your industry in the number and quality of professionals?
8. What transformations (new technologies and techniques) can you expect in the near future? What is the most potent of these changes already in place or will it be possible in the near future to ensure the level of work in the field and its qualification in the industry? Experts as a trade skater are now the most depraved in your industry and so on.
9. What 2-3 factor shall be able to use the basics for admission and resignation to work in your organization (in the event that professional competences of candidates will be able to meet each other)?
10. In your eyes, who can perform the transfer of modern skills for the new format of the educational cluster?

BLOCK 4. KEY DRIVERS OF THE ECONOMY AND SOCIAL DEVELOPMENT OF THE REGION IN THE FUTURE

11. What subjects and participants of the market will play a key role in the introduction of new technologies in the educational sphere in the next 10 years?
12. What events in the next 10 years can be key to the education system and bring about changes in the best or the best part?
13. Presently, you have one wish, which will be fulfilled, what problem in the educational sphere have you solved, using this desire?

THANK YOU FOR COOPERATION!

YOUR OPINION IS VERY IMPORTANT FOR RESEARCH! 🤝