



A Comparative Study of Stakeholder Engagement in the Dual Education System: A Case of Germany, the United States and Kazakhstan

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Abstract: Stakeholder engagement in the dual education system is one of the key factors in developing a sustainable educational system. In this study, the authors aim to explore the role and responsibilities of the key stakeholders and the level of their engagement in the dual education system. The authors aim to contribute to stakeholder engagement in dual education by identifying, assessing, and prioritizing project stakeholders' interests and influence on the education system. The paper used a case study approach and conducted semi-structured interviews with representatives of vocational schools in Kazakhstan. The case study was conducted by comparing the results of the project stakeholder analysis in the dual education systems of Germany and the United States to Kazakhstan. The semi-structured interviews were conducted with 15 experienced educators from different vocational schools in Kazakhstan. The author's analysis reveals that significant changes are necessary to the legislation in Kazakhstan to improve the dual education system.

Keywords: Dual education system, career and technical education, vocational education, project stakeholder analysis

1. Introduction

Recently, stakeholder engagement has been identified as an increasingly important but underexplored topic in several fields (Benneworth and Jongbloed 2010; Pavičić, Alfirević and Mihanović 2009). Scholars evaluate stakeholders' engagement as a connection between traditional project management and the social and ethical aspects, improving their participation and coordination (Martens and Carvalho 2017), which aims for the proactive involvement and engagement of stakeholders in project activities (Armenia et al. 2019; Leonidou et al. 2020). Nevertheless, stakeholder engagement is still an understudied topic in many areas, including the education system and dual education in particular.

Previous review articles on stakeholder engagement have focused on its implications for specific contexts and industries (Wallace et al. 2022; Schimperna, Lombardi and Belyaeva 2021; Yasin, Breadsell and Tahir 2021; del Vecchio, Secundo, and Passiante 2018; Petkovic et al. 2020), or its ties with sustainable development and technological change (Ghobakhloo et al. 2021; Cillo et al. 2019). However, none of these review studies comprehensively review the literature on stakeholder engagement in higher education institutions (Crocco, Giacosa and Culasso 2022; Langrafe et al. 2020).

Higher education institutions have been isolated from external socioeconomic systems, in order to increase their engagement with local, regional and national communities and foster their economic prosperity (Di Tullio, La Torre and

Rea 2021), universities require collaboration with civil society, industry and government to ensure society's progression towards sustainable development (Nicolò et al. 2021; Lucchese et al. 2022; Jain et al. 2022).

According to Khashab, Gulliver and Ayoubi (2020), universities and institutions plan, identify, prioritise, and engage with stakeholders through continued interactions. In the context of higher education, stakeholder engagement can be seen as a participatory process that augments the quality of environmental and societal decisions through the means of active collaboration with universities' stakeholders, including students, parents, funding bodies, alums, future students, academics, administrative staff, and government departments (Aledo-Ruiz, Martínez-Caro and Santos-Jaén 2022).

Proper management of its stakeholders has to be fundamental for educational organizations given that reputation not only affects its student intake, but also its admission standards and research performance, and indeed, in the long term, its very survival as an institution (Lafuente-Ruiz-de-Sabando, Zorrilla and Forcada 2018; Ji et al. 2017).

In contrast to the times in which educational organizations were solely controlled by the government, currently, multiple stakeholder groups are empowered by the shift to alternative steering models and approaches (Mampaey and Huisman 2016). Respectively, these stakeholders control access to organizational resources and they can urge or even force educational organizations to respond to their demands and expectations related to economic and social functions (Jongbloed, Enders and Salerno 2008). Stakeholder engagement in the dual education system is generally similar, since dual education is also implemented in educational organizations, but still has certain differences.

Stakeholder engagement in the dual education system fundamentally begins from the division of the educational process between two main stakeholders: educational and industrial organizations. In the process of dual education, the student receives theoretical knowledge in vocational or secondary schools and acquires practical skills in production (Remington 2018; Deissinger 2007). The interaction of entrepreneurs and vocational organizations with various stakeholders can offer a valuable source of social, knowledge and human capital that may enhance the dual education system and imply a great number of stakeholders.

Various authors have shown that a stakeholder engagement approach to governance entails long-term social exchange between parties, mutual trust, interpersonal attachment, commitment to specific partners, altruism and cooperative problem-solving (Stoney and Winstanley 2001). For this reason, this study aims to explore the role and responsibilities of the stakeholders in the dual education system through a project stakeholder analysis. Stakeholder analysis is a powerful tool to systematically understand stakeholders, particularly those who substantially impact a decision-making process (Schlund, Schulte and Sprenger 2022). We aim to contribute to project stakeholder research in dual education by identifying, assessing, and prioritizing project stakeholders' interests and influence on the education system.

The contribution of this paper is to improve current legislation in the dual education system in Kazakhstan. Recommendations were developed based on comparing project stakeholder analysis in the dual education systems of Germany and the United States to Kazakhstan. The analysis identifies the level of stakeholder engagement and proposes strategies for effective engagement for specific stakeholders (with a low level of engagement) in the Kazakhstani dual education system. After identifying the list of stakeholders with less involvement in the implementation of dual education, the authors interviewed educators from 15 vocational schools in Kazakhstan to compare the practical level of their engagement in the educational process.

The study presented in this article contributes to the theorizing of engagement by examining the connection between the concepts of the dual education system and project stakeholder engagement with applied recommendations. The research question is: What changes are required in the legislation of the dual education system of Kazakhstan from a stakeholder engagement perspective?

The paper is structured as follows: Section 1 defines the need for the research. Section 2 describes the research methodology, while Section 3 provides the theoretical background of stakeholder engagement in the dual education system. Section 4 describes the results of the project stakeholder analysis and interview. Section 5 summarizes the results, recommendations, and limitations of the study. Finally, Section 6 is the conclusion of the study. The authors also want to note the limited number of articles identified during the literature review related to the topic of dual education in Kazakhstan and the topic of stakeholders of dual education in general and therefore, to fill this gap, have pursued this study as a theoretical contribution.

2. Methodology

The object of this study was to identify necessary improvements in the Kazakhstani dual education legislation from the experience of Germany and the United States from a project stakeholder engagement perspective.

Identification of the level of stakeholder engagement in the dual education system requires qualitative research methods. Qualitative research explores and understands the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures, data typically collected in the participant's setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data (Creswell and Poth 2016). Qualitative research procedures rely on text and image data, have unique steps in data analysis, and draw on diverse strategies of inquiry (Creswell 2017).

The data collection steps of the qualitative research design include setting the boundaries for the study, collecting information through unstructured or semi-structured observations and interviews, documents, and visual materials, as

well as establishing the protocol for recording information (Creswell 2017). The qualitative ~~mixed~~ research design of the current paper includes three stages:

- The first step involved the analysis of the existing literature on stakeholder engagement in the dual education field in the U.S. and Germany.
- Second The second step is a comparative case study for a multiple-case design to gain an in-depth understanding of the strengths and challenges of each system of stakeholder engagement in the dual education system (Yin 2009; Yin 1994). Accordingly, a case study was conducted comparing the results of the project stakeholder analysis of dual education in Germany, the United States and Kazakhstan. Data gathering was conducted through an analysis of government reports and, particularly by examining current legislation in the dual education field in each country. The document governing German legislation - is the “Vocational Training Act” (2005). The “Carl D. Perkins Career and Technical Education Act (Perkins V)”, 2006 is applied in the United States, and “Rules for Organizing Dual Education”, 2012 is applied in Kazakhstan.
- The third step was based on the results of the comparative case study authors conducted interviews with representatives of 15 vocational schools in the Republic of Kazakhstan (see Table 1). Questions of the interview were aimed to explore the level of engagement of specific stakeholders of the dual education system.

Table 1 - Background on selected vocational schools

Vocational school	Number of students	Number of programs	Number of enterprises
A	275	4	26
B	975	4	39
C	125	8	6
D	421	3	18
E	433	2	53
F	32	6	60
G	291	3	3
H	498	5	9
I	333	6	38
J	855	5	100
K	1451	11	75
L	578	5	38
M	393	5	67
N	360	7	17
O	400	3	25

3. Theoretical Background

3.1 Defining The “Dual Education System”

First, the authors are going to discuss the meaning and definitions of the “dual educational system” in the selected countries. Considering that Germany was one of the first countries to establish the dual system, we will start with the German experience. Germany’s first dual education legislation was enacted in 1849. We will follow our analysis of the German dual education system with a detailed analysis of the United States experience which also has a long history of the development of a dual education system starting in 1917. Finally, we will explore the recent development of the dual education model in - Kazakhstan which has a strong desire to develop the existing dual model by recognizing the more successful experience of Germany and the United States.

3.1.1 The German Vocational Education and Training

Germany’s Vocational Education and Training (VET) system is a dual education system that dates back to 1894 (Wieland 2015). Modern vocational training is determined by the emergence of substantial activities on the part of the state to promote the ancient craft system (Deissinger 1996). In 1881, craftsmen achieved the legal recognition of their guilds, which, by the same law, also received certain privileges in the training of apprentices (Winch 2006). The modern dual system takes place at two ‘learning venues’: (1) the company that offers and funds the apprenticeship and, (2) the part-time vocational school where the apprentice receives theoretical instruction and is taught in general subjects (Deissinger 2015).

3.1.2 The United States Career and Technical Education

In the United States, the well-known “Career and Technical Education” (CTE) began in the early 20th century as “vocational education”—an American adaptation of the German dual education system (Brewer 2011). The initial focus of CTE in the United States was on agriculture and trades and industry for boys and homemaking for girls to a broad array of programs linking technical programs with emerging demands of business and industry (Friedel 2011). Instead of separate vocational schools or a dual model of vocational education, like in Germany, in the United States, vocational education was integrated into the high school system (Kliebard 1999).

At the secondary school level, CTE encompasses family and consumer sciences education, general labour market preparation, and occupational education, and may form part of a course of study leading to college or employment. At the postsecondary level, CTE is linked to preparation for employment in specific occupations or careers (Levesque et al. 2008).

3.1.3 The Republic of Kazakhstan’s Dual Education System

Before its independence, the Kazakh dual education system was subjected to a Soviet-style vocational education engineered to support a command economy. Soviet-style vocational education is provided in technical schools, which accepted secondary school graduates who did not enter university (Ilkun 2013).

After gaining independence the Republic of Kazakhstan 2012 adopted the classical German model. Just like the classical model, the dual education format in Kazakhstan takes place at the secondary education level and allows the combining of theory and practice in the educational process. Simultaneously with the basics of science, students learn their chosen profession directly at work (Yergalieva et al. 2017) which helps to integrate them successfully into working society (Kenzhegaliyeva 2018). In Table 2, the authors give the definitions of dual education as described in the legislation of each country.

Table 2 - Definitions of dual education in each country

Germany	United States	Kazakhstan
Vocational training is provided in study courses imparting specific vocational qualifications or in comparable study courses and vocational training is provided under an employment relationship.	Career and technical education mean organized educational activities that provide individuals with rigorous academic content and relevant technical knowledge and skills needed to prepare for further education and careers in current or emerging professions.	Dual education system - a form of training that combines training in an educational organization with mandatory periods of industrial training and professional practice at an enterprise.

3.2 Stakeholder Engagement

Despite the growing emphasis on engaging stakeholders to create mutually beneficial relationships between organizations and their stakeholders, the concept of stakeholder engagement remains under theorized (Greenwood 2007). According to the Project Management Institute’s PMBOK Guide 7th (ed.) stakeholders are defined as "... individuals and organizations who are actively involved in the project, or whose interests may be positively or negatively affected as a result of project execution or successful project completion" (PMI Guide 2021).

The project and its stakeholders can be viewed as a network in which the actors interact with each other and exchange information, resources, and results (Milošević 1989). Mok, Shen and Yang (2015) state that the complex nature of projects requires systematic approaches and appropriate skills of project managers to accommodate stakeholder interests and to achieve the best value for the project outcome. Stakeholder engagement is regarded as an effective approach to achieving value by bringing stakeholder concerns to the surface and developing robust stakeholder relationships in complex project environments (Bourne and Walker 2005).

The concept of stakeholder was first introduced to project management in Freeman’s book, Strategic Management: A Stakeholder Approach (1984). Stakeholder theory basically states that to be successful, an organization needs to consider the interests of a wider group of stakeholders, including employees, customers, and suppliers, rather than just the interests of the shareholders of the organization (Freeman 1984). According to the definition in the PMBOK Guide, 6th edition “Project stakeholder management includes the process required to identify the people, groups, or organizations that could impact or be impacted by the project, analyze stakeholder expectations and their impact on the project, and develop appropriate management strategies for effectively engaging stakeholders in decision and execution” (PMI Guide 2017).

The basic premise of project stakeholder engagement is that projects will run more smoothly and be more successful if stakeholders understand and agree with the project approaches and outcomes (Ackermann and Eden 2011). Project

managers need to identify the stakeholders who take an interest in the strategic issues of the project, collect intelligence about these stakeholders, determine their interests and ability to influence the project while assessing what project-relevant actions they could take, and adjust project actions accordingly (Sperry and Jetter 2019).

Before being able to effectively engage stakeholders project managers face challenges in identifying stakeholders and their needs, assessing stakeholder impact and their relationships, and formulating appropriate engagement strategies (Yang et al. 2011). Typically, a stakeholder analysis constitutes a process capable of understanding the behaviour, interests, needs, and expectations of the individual(s) and providing knowledge and data for enhancing successful decision-making (Varvasovszky & Brughha 2000). Despite the valuable contribution of previous research in project stakeholder engagement (Eskerod and Huemann 2013), the field of education has limited research on stakeholder engagement including the dual education system.

3.3 Stakeholder Engagement in the Context of Dual Education Systems

In this section, the authors propose to consider the dual education system from a stakeholder engagement perspective. Considering that stakeholder identification and engagement in dual education are key factors in facilitating success, the authors will review the literature that aims to provide a clearer understanding of the stakeholders interested in and can influence the dual education system of each country under consideration.

3.3.1 The German Vocational Education and Training

The German dual system consists of two learning parts: (1) vocational schools and, (2) training employers. German training employers play a significant role among all stakeholders in the Vocational education and training (VET) system because they provide the learning opportunities and the practical field of experiences needed to build up portable occupational competencies. Moreover, employer associations are committed to developing and revising training regulations together with other stakeholders (Gonon and Maurer 2012).

Another stakeholder noted by Deissing and Gonon (2016) is the Chambers. Chambers are governmental institutions responsible for the narrow sphere of governmental regulation; their roles consist of various functions in the apprenticeship system including the establishment and ongoing modernization of training courses. Additionally, Chambers participates in the final examination and establishes a board of examiners consisting of employer representatives, employees, and at least one vocational schoolteacher (Wieland 2015).

To summarize, we have identified the following six categories of stakeholders in the German vocational training system: (1) state, (2) vocational schools, (3) training employers, (3) Chambers of industry, (4) students, (5) instructors and (6) parents. Because the parents are not identified as a stakeholder in the Vocational Training Act, we have not included them as key stakeholders for this analysis. Parents as a potentially important category of stakeholders should be involved in the dual education system because parents' involvement in their children's education and constructive interaction with schools contributes to the high academic achievement of students (Hornby and Lafaele 2011).

3.3.2 The United States Career and Technical Education

In the Career and Technical Education (CTE) of the United States, the main stakeholders providing educational services are secondary schools. Secondary schools with CTE programs provide coherent sequences of academic and technical courses—many of which span high school and postsecondary education (Brand, Valent and Browning 2013). This means that CTE programs provide technical skills that will help them in the future in work and employment. CTE teachers are meeting more stringent certification requirements than core academic teachers. In most states, CTE teachers must have a CTE credential that signifies they are well-qualified and possess appropriate occupational and educational experience (Naylor 1997). According to Manley (2012), the government provides administrative leadership and support; professional development offerings to teachers; funding priorities at the federal, state, and local levels; and more meaningful partnerships between CTE teachers and local businesses.

Even if schools take the main burden of teaching CTE programs, Stern and Stearns (2006) confirm that CTE courses combine classroom-based instruction with work-based learning, internships, or apprenticeships. These approaches allow students to work with local employers, learning directly from those who have already established their careers. Exposure to the workplace allows students to learn employability skills, see how academic content is applied in real-world settings, and collaborate with adults on authentic work projects.

3.3.3 The Republic of Kazakhstan's Dual Education System

In Kazakhstan, the State, as owner, plays a key role. In Blinov, et al. research, (2015) the government delegates the responsibility of dual education to technical and vocational schools and enterprises. Moreover, the authors mention enterprises fully implement industrial practices. Kurmanov et al. (2015) also note the role of the National Chamber as a register of dual education agreements.

Prior studies have provided a rich and solid basis for identifying, classifying and categorizing stakeholders as well as understanding their behaviour to manage them better (Crawford 2005; Jensen and Sandstrom 2011; Missonier and Loufrani-Fedida 2014). However, the literature review showed that prior research has paid very limited attention to project stakeholder analysis in education generally, especially in dual education.

4. Results

Eskerod, et al. (2015) maintain that stakeholder analysis serves two purposes: (1) to help the project representatives identify ways to procure the necessary financial and non-financial resources, and (2) to help the project representatives understand the interests and concerns of the project stakeholders. Classical project stakeholder analysis methods typically involve various stakeholder assessments (Littau, Jujagiri and Adlbrecht 2010); Yang et al. 2011). A project stakeholder analysis consists of stakeholder identification, stakeholder assessment and stakeholder prioritization (Eskerod and Jepsen 2016; Higgs and Rowland 2011).

4.1 Stakeholder Identification

The process of stakeholder identification is closely related to the analysis of their influence and potential impact on project success (Aragones-Beltran, Garcia-Melon, and Montesinos-Valera (2017). Identifying stakeholders is one of the key success factors recognized by PMI and other leading project management organizations (Achterkamp and Vos 2017; Saad, Zahid and Muhammad 2022). According to Bradley (2016), a long stakeholder list may be difficult to obtain which is why stakeholders should be grouped. On the other hand, Ackermann, and Eden (2011) state that a better result will typically be obtained if a given stakeholder category, is broken down into smaller categories for the analysis. Table 3 uses both approaches grouping all key stakeholders from all three countries.

Table 3 - Key stakeholders of the dual education system

Stakeholders	Germany	USA	Kazakhstan
Students	Trainees	Concentrators	Students
Educational institution	Vocational schools	High schools, charter schools	Technical and vocational education
Vocational training organizations	Training employers	N/A	Enterprise (organization)
Governmental institutions	Vocational Training Committee of the Competent Body	Eligible agency	Local executive body in the field of education
Workforce development institutions	The Chamber of crafts and trades. The Chamber of industry and commerce. The Chamber of agriculture. The Chambers of lawyers, patent attorneys and notaries. The Chambers of public accountants and Chambers of tax advisers. The Chambers of physicians, dentists, veterinarians and pharmacists	Local workforce development board. Qualified intermediary	National Chamber of Entrepreneurs Regional Chamber of Entrepreneurs
Educators from the vocational training organizations	Instructor	Specialized instructional support personnel	Mentor

4.2 Stakeholder Assessment

Project stakeholder assessment needs to clarify the contributions of each stakeholder in each system. For this purpose, the authors developed tables which show the stakeholder roles and responsibilities taken from the legislation of the three countries.

Table 4 - Roles and responsibilities of stakeholders according to the vocational training act (Germany)

No	Stakeholder	Role	Responsibility
1	Competent Body	Owner/Sponsor	Consults and coordinate vocational education and work steadily improvement the quality of vocational training.
2	Chambers	Monitors the quality of vocational education	Maintain a register of a contract for vocational education and monitor the observance of the rights and obligations in the industrial training of students, instructors, and employers.
3	Vocational schools	Educators from the vocational schools	Provide theoretical knowledge of vocational programs
4	Training employers.	Educators from the training employers	Provides the vocational competence necessary for trainees to achieve the purpose of their training. Including a syllabus, timetable, materials, tools, and supplies, necessary for their training and passing their interim and final examinations.
5	Instructor	Educator from enterprises	Teaches students professional skills in enterprises
6	Trainees	Recipient of educational services	Perform the tasks, follow the instructions, discipline, and confidentiality

Based on the description of responsibilities in Table 4, the Chamber's activities in the German Vocational Education and Training (VET) mainly aim to control the quality of education provided in the industries. The main executors of the VET are vocational schools and training employers. And the main educators in the organization of training employees are instructors. Instructors have technical and professional knowledge and are required to have pedagogical skills that increase the training level. According to the student's list of responsibilities, it can be concluded that trainees in VET are treated as employees, not students, contributing to more effective integration of students into the work environment.

Table 5 - Roles and responsibilities of stakeholders according to Perkins V (US)

№	Stakeholder	Role	Responsibility
1	Eligible agency	Owner/Sponsor	Administration and supervision of career and technical education.
2	High schools, charter schools	Educators	Provides theoretical and technical skills within the CTE programs
3	Local workforce development board	Support and development of CTE programs	Jointly with representatives of secondary schools develop and implement career pathways within the local area by aligning the employment, training, education, and supportive services that are needed by adults and youth with barriers to employment
4	Qualified intermediary	The nonprofit entity from industry or sector partnership	Responsible for building, connecting, sustaining, and measuring partnerships with employers, schools, community-based organizations, social service organizations, and economic development organizations
5	Specialized instructional support personnel	School counselors	Provides modification of the curriculum, equipment, classroom, and instructional aids and devices.
6	Concentrators	Recipient of educational services	Complete at least 2 courses in CTE program

Table 5 shows that the Eligible agency in the United States is allocated the general oversight and administration of Career and Technical Education (CTE) matters, including funding. According to Perkins V, the CTE program is available in high schools and charter schools, therefore, there are no separate schools created for teaching CTE. A charter school is a public school that provides a specific set of educational objectives authorized under the Elementary and Second Education Act (ESEA) signed into law in 1965. However, together with the secondary schools, the local workforce

development board participates in the development of CTE programs. The local board works at the local area level and aims to increase the number of employed graduates of CTE programs (Workforce Innovation and Opportunity Act (2014)).

A feature of the list of key stakeholders of CTE programs in the United States is the presence of qualified intermediaries and specialized instructional support personnel. As shown in Table 5 qualified intermediaries are non-profit organizations aimed at establishing relationships between different stakeholders.

Table 6 - Roles and responsibilities of stakeholders in the Kazakhstani dual education system

№	Stakeholder	Role	Responsibility
1	Local executive body in the field of education	Sponsor	Provides consulting assistance on the organization of the educational process of dual education
2	National Chamber of Entrepreneurs	Owner on national level	Develops and implements measures to assist in the employment of graduates trained in dual training and coordinates the work of the regional Chambers of entrepreneurs.
3	Regional Chamber of Entrepreneurs	Owner on regional level	Assists in creating educational jobs at the request of enterprises. Register dual education agreements. Provides consulting assistance on the organization of the educational process of dual education. Assists in training a mentor from an enterprise.
4	Technical and vocational schools	Educators from the technical vocational schools	Implements educational programs for dual training, considering the requirements of the enterprise. Control the professional practice by trainees at the enterprise.
5	Enterprise (organization)	Educators from the enterprises	Provides the organization of industrial training and professional practice at the enterprise
6	Mentor	Educator from enterprises	Forms a responsible attitude of the trainee to the performance of their professional duties
6	Students	Recipient of educational services	Study and keep a diary of industrial training

In the case of Kazakhstan (Table 6), governmental institutions are owners of dual education, but the coordination goes through the Local Executive body in the field of education. The organization and implementation of dual education were entrusted to the National and Regional Chamber of Entrepreneurs. The Regional Chambers are engaged in all the organizational work of dual education and have a wide range of responsibilities at each stage of the dual education life cycle. However, the main two stakeholders providing education remain vocational schools and enterprises.

4.3 Stakeholder Prioritization

As conflicting interests may exist between the project team and various stakeholders or across different stakeholder groups, prioritisation is often an important part of strategy planning (Jepsen & Eskerod 2009; Freeman 1984). To provide an overview of the stakeholders in terms of their influence and interest, the Project Stakeholder Influence and Interest Matrix were developed as shown in Figure 1.

Interest (horizontal axis) - Indicates how the stakeholders are affected by the success of what is being defined or done. It reflects the stakeholder’s technical and social concerns and perceptions of the project and its desired outcome.

Influence (vertical axis) - The degree of influence a stakeholder has over what is being defined or done within the project, often called the stakeholder’s power base. Power is the stakeholder’s ability to contribute or withhold resources and/or to accept or reject outcomes (Greiman, 2013).

Figure 1 presents stakeholders from each country with corresponding graphic drawings according to the numbering of stakeholders in Table 7. Stakeholders from Germany are presented as a square, stakeholders from the United States as a triangle and Kazakh stakeholders as a circle.

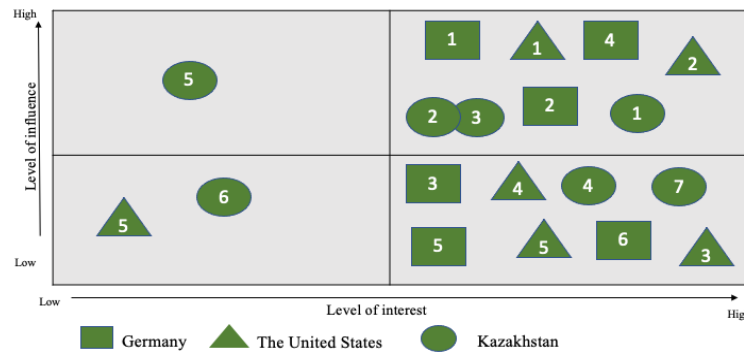


Fig. 1 - Project stakeholder influence matrix in dual education of Germany, the United States and Kazakhstan

Table 7 - Figure numbering according to each country

№	Germany	USA	Kazakhstan
1	Vocational Training Committee of the Competent Body	Eligible agency	Local executive body in the field of education
2	Chambers	High schools, charter schools	National Chamber of Entrepreneurs
3	Vocational schools	Local workforce development board.	Regional Chamber of Entrepreneurs
4	Training employers	Qualified intermediary	Technical and vocational schools
5	Instructor	Specialized instructional support personnel	Enterprise (organization)
6	Trainees	Concentrators	Mentor
7			Students

In Germany, the stakeholders with high levels of influence and interest include Competent Bodies, Chambers and Training employers. A slightly less powerful position with the same high level of interest but less level of influence is vocational schools, instructors, and trainees.

According to Figure 1, Eligible agencies and secondary schools are the owners of career and technical education (CTE) in the United States and both have a high level of interest and influence. The agency conducts general coordination of the CTE programs, while the secondary schools provide the educational process during the project's life cycle. Local workforce development and a qualified intermediary are aimed at attracting enterprises to the development of CTE programs and further employment of concentrators who have high-level interests but a low level of influence. The only stakeholder with a low level of interest and influence is supporting personnel.

In the Matrix (Figure 1) Kazakhstani stakeholders like Local executive bodies, and National and Regional Chambers, have a high level of influence and interest in the field of education and play the role of the owner of the dual education programs. The position of vocational schools in the Matrix is characterized by a high level of interest but a low level of influence. The opposite situation with a high level of influence and a low level of interest is significant for enterprises. Therefore, industries and enterprises are not interested in participating in dual education. An almost similar situation is observed among mentors, in their case both indicators are low.

5. Discussion

The following section examines the research question of our study, derived from the project stakeholder analysis by synthesizing the most important findings from the stakeholder identification, assessment, and prioritization. The research question explores “What changes are required in the legislation of the dual education system of Kazakhstan from a stakeholder engagement perspective?”

Due to the maturity of vocational education in Germany and career and technical education in the United States lessons can be learned about the role and responsibilities of stakeholders and how they can be engaged at all levels to provide better outcomes. Examining the legislation of these three countries reveals key areas for stakeholder development in the dual education system of Kazakhstan, a country still in the early stages of implementation so that the benefits of the system can be obtained to enrich the lives and opportunities for all participants. The effective engagement of

stakeholders in Germany and the United States can be the basis for initiating the reform of the dual education system in Kazakhstan.

Our research determined the level of stakeholder engagement in countries under consideration based on project stakeholder analysis. Moreover, it is suggested that evaluation is about assessing the outcome of certain activities or responsibilities (Bakker, Boonstra and Wortmann 2011; McLeon, Doolin and MacDonell 2012; Turner and Zolin 2012; Vrhovec et al. 2012; Weiss 1997). One way of achieving this in projects is by using project stakeholder analysis to identify the linkages between the activities of stakeholder engagement.

In German Vocational Education and Training (VET), the Competent Body and Chambers play a controlling and consulting role. The differences are that the Competent Body performs consulting and monitoring work of vocational schools, while Chambers supervises training employees. Vocational schools and enterprises are the main executors of dual education and have a high level of engagement. The effective engagement of enterprises in VET is motivated by the preparation of future qualified workers, which is also supported by the expanded powers described in the Vocational and Training Act.

In the case of the United States, high schools and charter schools are the main executors of career and technical education (CTE) and are responsible for engaging the rest of the key stakeholders. Schools are engaging the Local workforce development board by consulting on the employment of CTE graduates. The overall control and regulation of CTEs in the United States are carried out by the Eligible agency, they also identify core indicators in the State plan of each school.

The main executors of dual education in Kazakhstan are vocational schools. Vocational schools are also responsible for the involvement of other key stakeholders in dual education. However, enterprises and mentors also have a long list of responsibilities but do not fully engage in the educational process. Comparing these three countries shows that successful dual education systems exist only with the full engagement and understanding of the responsibilities of key stakeholders like vocational schools and enterprises.

Project stakeholder analysis shows that Rules for the organization of dual training in the Republic of Kazakhstan (Ministry of Education and Science of the Republic of Kazakhstan (2012) do not fully disclose the rights and obligations of enterprises participating in dual education. According to the adapted classical model, training employees are the main stakeholders in the dual education system, and they are fully aware of the importance of training young professionals for their enterprises, therefore, they have a high interest in dual education.

In order to examine the actual involvement of enterprises and mentors in the dual education system of Kazakhstan authors interviewed 15 educators from selected vocational schools focusing on the larger cities and two regions in Kazakhstan. According to the results of the interview, 5 vocational schools describe the enterprises in their city or region as being actively involved in the dual education process. Particularly educators explained that a high level of engagement is motivated by the formation of highly skilled employees.

Three vocational schools noted that they have no difficulties with involving enterprises in dual education because the enterprises themselves are interested in cooperation. This is due to the fact that educational programs are in demand among enterprises in their region.

The remaining vocational schools note the weak involvement of enterprises in dual training. Therefore, vocational schools are forced to make certain efforts and motivate enterprises on their own. Educators from vocational schools explain the low engagement rate as a misunderstanding of the purpose and advantages of dual education, on the one hand, and the lack of concessions for enterprises participating in dual education from the state on the other hand. Vocational schools organize events to engage enterprises such as open days, workshops, round tables and job fairs.

Also, some vocational schools noted that weak motivation is seen not only among the enterprises but also among those directly providing professional knowledge such as mentors. The salaries of mentors are released by vocational schools, but mentors refuse to accept them because for them this amount is insignificant.

5.1 Limitations of the Study and Future Work

Dual education in each of the countries under consideration is a complex set of activities with diverse stakeholders. At the current stage of the study, the authors identified and assessed the responsibilities of stakeholders based on the current legislation of each country. From a project life cycle perspective, the current study reveals the importance of the initiation and planning phase. Future work could explore the role of stakeholder engagement in dual education by applying different research designs that could be used to reveal in more detail the issue of development of a more collaborative and collegial framework that would recognize the benefits of stakeholder engagement and incentivize greater participation by employers in the Kazakhstan dual education system.

6. Conclusion and Recommendations

The primary purpose of this study was to contribute to project stakeholder engagement and stakeholder analysis research in the dual education field. Based on the identification, assessment and prioritization of stakeholders and the results of the interview, we developed the following findings and recommendations for dual education in Kazakhstan:

First, the authors believe it is necessary to expand the range of responsibilities of enterprises and involve them more in providing professional knowledge. The current position of enterprises in the Matrix of influence and interests (see Figure 1), additionally confirms the fact that having a high level of influence does not necessarily mean this stakeholder has a high level of interest, which, may be due to a limited list of powers and responsibilities. In order to effectively engage enterprises, authors refer to the interview results of several educators from vocational schools who recommend allocating benefits to enterprises at the legislative level or some other preferences that would significantly increase the level of engagement. An additional recommendation says that dual education will work effectively if the government promotes the development of regional enterprises and forms dual educational programs for their needs.

Second, the authors also highlight the importance of mentors in the dual education of Kazakhstan. Revisiting the classical model, mentors or instructors fulfil the role of teachers in the enterprise. Mentors should be appointed by a person who teaches industrial knowledge using pedagogical skills. In the case of Kazakhstan, the duties of a mentor and the requirements for this position are described in general terms, and pedagogical skills are not mentioned at all. The mentors' location in the Matrix shows one of the weakest positions, making it difficult for stakeholder engagement. Based on the foregoing, the authors recommend defining the responsibilities of mentors in more detail and increasing the qualification requirements for mentors, including pedagogical skills.

Reforming or improving the legislation of Kazakhstan based on the results of project stakeholder analysis and best practices in project stakeholder engagement approaches is critical for end-users of dual education - students who might not otherwise have fair access to technical and vocational educational opportunities to contribute to society in a meaningful way.

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