

Vocational Guidance and Pre-Profile Training of Schoolchildren with Disabilities: An Analysis of Pedagogical Attitudes and Practices

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ABSTRACT: This article addresses the problem of preparing upper secondary school students with disabilities for future professional activities, focusing on teachers' views and attitudes toward career guidance and preparatory work aimed at developing initial professional competencies. Despite significant state measures in vocational training and employment support for persons with disabilities, including career guidance teachers in schools, workplace quotas, employer subsidies, and vocational training programs, the rate of permanent employment remains relatively low (39%). Drawing on Bronfenbrenner's ecological systems theory, the study examines the role of schools and social organizations in the pre-profile preparation of students with disabilities and identifies opportunities for improving their impact. Despite the implementation of inclusive education policies, a gap remains between existing conditions and expected outcomes of professional integration. In particular, systematic vocational guidance and pre-profile training at the upper secondary level remain insufficiently developed due to limited organizational, pedagogical, and methodological support. The study employs an empirical approach based on a survey of teachers working with students with disabilities, combined with an analysis of relevant academic and policy sources. The research examines teachers' attitudes, experiences, existing practices, and perceived challenges related to vocational guidance and the development of initial professional competencies. The aim of the study is to identify key challenges in creating conditions for students with disabilities' professional preparation and to propose approaches for improving pre-profile training in schools. The findings provide recommendations for policymakers, educators, and vocational institutions on strengthening career guidance systems to support professional self-determination, employment opportunities, and financial independence of students with disabilities.

Keywords: Inclusive education, Students with disabilities, Vocational guidance, Teacher's attitudes, Career self-determination.

I. INTRODUCTION

The sociocultural transformations taking place in contemporary Kazakhstani society, with a clear emphasis on humanization, equality of rights, and recognition of the diversity of all children within the education system, have contributed to the spread of ideas of integration and social adaptation of children with disabilities [1]. In recent years, an evolutionary shift has been observed from a procedural stage focused on ensuring the necessary special conditions for the education, upbringing, and integration of children with disabilities in all preschool and secondary education institutions in Kazakhstan to a deeper understanding of the need to ensure the effectiveness of inclusive education in terms of subsequent professional self-determination, effective employment, and financial self-sufficiency of this population [2].

At present, Kazakhstan is actively expanding the range of social services provided by the state in the areas of vocational training, retraining, and support for the employment of persons with disabilities. At the same time, in line with current socio-economic conditions and labor market transformations, there is a growing recognition in society of the need to address the issue of preparing persons with disabilities for professional activity already at the level of school education. It should be noted that this idea is not new. During the Soviet period, vocational and labor training for children with disabilities was widely implemented in special (correctional) boarding schools and constituted one of the key objectives of special (correctional) education [3].

In special pedagogy, vocational and labor training for this group of children was regarded as an important socio-economic mechanism for their inclusion in socially useful labor and professional relations. Such training was grounded in socialist postulates that emphasized the mandatory employment of every citizen of the Soviet state and their social usefulness. Accordingly, vocational and labor preparation in special schools during the Soviet period offered a rather limited range of occupations, largely determined by the country's economic needs and paying little attention to the individual needs of persons with disabilities. Most commonly, students with disabilities in boarding schools were trained for occupations such as carpentry, metalwork, sewing, shoemaking, agriculture, and related trades [2, 3].

The ideological foundations of the process of forming professional readiness among children with disabilities are fundamentally different today. Currently, issues of vocational guidance and pre-profile training are considered within the framework of the social responsibility of the entire Kazakhstani society to provide and ensure opportunities for professional realization and the attainment of the highest possible career achievements for every person with disabilities. This task aligns with the United Nations Sustainable Development Goals, one of which (Target 8.5) calls on countries by 2030 to achieve full and productive employment and decent work for all women and men, including young people and persons with disabilities, and equal pay for work of equal value, while another (Goal 4) aims to ensure equal access to education and vocational and technical training at all levels for vulnerable populations, including persons with disabilities, by the same timeframe [1].

Within the context of this transition toward a social paradigm that emphasizes the importance of specialized preparation of children with disabilities for future professional activity, scholarly reflection on this process becomes particularly significant. Despite substantial policy measures undertaken in this direction such as the introduction of career guidance teacher positions in schools, the gradual increase in quotas for specialized workplaces at Kazakhstani enterprises from 2% to 4% of total jobs, the implementation of subsidies to cover employers' costs associated with equipping specialized workplaces for employees with disabilities, the training of specialized staff in employment centers, and the organization of vocational training and retraining courses the rate of permanent employment among persons with disabilities remains relatively low (39%). According to official statistics, only 148,000 individuals out of 381,000 working-age persons with disabilities are employed [2]. One possible reason for this situation is the insufficient readiness of schools to create conditions for identifying professional preferences and developing initial professional competencies among children with disabilities.

Despite the growing body of research on inclusive education and vocational preparation of persons with disabilities, existing studies have primarily focused on legislative reforms, accessibility of education, and general issues of social integration. However, insufficient attention has been paid to the early pre-profile

preparation of children with disabilities at the school level, particularly in the context of identifying their professional preferences and developing initial professional competencies within inclusive and special education settings. Furthermore, there is a lack of empirical research examining the readiness of educational institutions and teachers in Kazakhstan to implement systematic vocational guidance and pre-profile training for students with disabilities. This gap is especially significant given the ongoing expansion of inclusive education and the persistent gap between educational inclusion and successful labor market integration. Therefore, a comprehensive analysis of the conditions, content, and effectiveness of pre-profile training for children with disabilities in the Kazakhstani school system remains insufficiently explored and requires further scholarly attention.

The aim of this article is to examine these gaps in practice and to propose new approaches to improving the pre-profile training of children with disabilities. The study is grounded in Bronfenbrenner's ecological systems theory, according to which the formation of any skill or competence is influenced by four interrelated and interdependent systems, ranging from the child's family to the macrosystem, which includes a country's cultural practices, available resources, and other contextual factors [3]. In accordance with this theory, the process of pre-profile preparation of children with disabilities for future professional activity is largely dependent on both the mesosystem (schools and other educational institutions) and the exosystem (adult social organizations). Therefore, this article examines preparation for future employment through the lens of one of these key systems namely, the attitudes of teachers working with children with disabilities toward the necessity and content of vocational guidance and preparatory activities aimed at developing initial professional competencies, including personal competencies, among students with disabilities already at the upper secondary school level. Particular attention is given to assessing the factors that influence the conditions and quality of pre-profile training and vocational guidance in special schools, as well as the required conditions, methods, and content of labor-oriented and pre-profile training activities.

The significance of this study lies in its potential to develop concrete practical recommendations for organizing pre-profile training in schools that is aimed at the early identification of professional preferences of each child with disabilities, providing support during the stage of career choice, and offering the necessary counseling and other forms of assistance during the acquisition of a chosen profession in vocational and technical colleges or universities [4]. These recommendations are intended to support students with disabilities in professional self-determination and vocational preparation, promote their financial and economic independence, and contribute to meeting labor market demands for qualified personnel.

Although previous studies have explored aspects of inclusive education and vocational training for students with disabilities, there is still limited evidence on how early career preparation and pre-profile training are implemented in schools, particularly in Kazakhstan. Existing research mainly focuses on general policies, post-school employment outcomes, or the theoretical importance of career guidance, without examining teachers' attitudes, readiness, and practical involvement in developing students' initial professional skills. This reveals a clear research gap between the recognized importance of early vocational preparation and the lack of empirical data on its actual implementation at the school level. By addressing this gap, the current study provides insights into the conditions, challenges, and opportunities for improving career guidance and early career preparation for students with disabilities, offering evidence-based recommendations for educators, policymakers, and vocational institutions [5–7].

II. LITERATURE REVIEW

Quantitative analysis of the literature allows the identification of key trends in the development of scientific thought. Firstly, there is a consistent growth in publication activity on the topic of transition planning and employment of persons with disabilities (PWD). During the period 2020–2021, research was primarily reactive, focusing on adaptation to the COVID-19 crisis and remote forms of career guidance. In 2022–2023, there was a significant surge in interest (+15–20% annually) in issues related to the restoration of practices and addressing workforce shortages. By 2024–2025, the scientific discourse stabilized, with the focus shifting toward the integration of advanced technologies, such as artificial intelligence and virtual reality.

Table 1. Publication activity statistics and key research trends (2020–2025).

Period	Characteristics of the stage of scientific development	Dominant Themes (Hotspots)	Publication Volume Dynamics
2020–2021	Crisis Adaptation: Response to the COVID-19 pandemic, transition to remote formats of career guidance.	Impact of Lockdowns on Transition Services; Telehealth; Virtual Internships	Moderate growth with a focus on crisis management case studies
2022–2023	Gap Analysis: Assessment of skill losses, workforce crisis (“Great Resignation”), and mental health challenges.	Teacher Shortages; Social Isolation; Restoration of In-Vivo Practices; Neurodiversity	Significant growth (+15–20% annually), emergence of major systematic reviews
2024–2025	Exploration of New Models: Technological integration, sustainable development, and inclusive ecosystems.	Artificial Intelligence and VR in Career Guidance; Self-Advocacy; Student Agency; Soft Skills	Stabilization at a high level; interdisciplinary nature of studies (education + IT + sociology)

Source: Data synthesis based on bibliometric analyses.

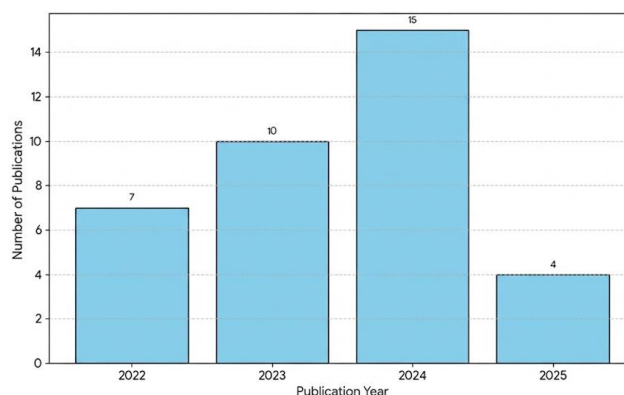


FIGURE 1. Distribution of publications by year in the ERIC database.

In the OpenAlex database, using the same query for the period 2015–2025, 21 studies on this topic were identified, with 42% of the data available as open access.

The geographic distribution of studies demonstrates the global nature of the issue; however, the production of empirical data is dominated by countries of the Global North namely, the United States, the United Kingdom, Germany, and Spain. At the same time, research activity is increasing in Australia and South Africa, indicating an expansion of the geographic scope of scientific inquiry, although data from developing countries remain limited. Thematically, studies focus on several key areas: transition planning, systemic barriers, pre-vocational training, and teachers’ social attitudes. Database analyses show that interest in the topic is global, yet the leading positions in terms of empirical research are held by the USA, the UK, and European Union countries (especially Spain and Germany) [10], with a noticeable increase in publications from South Africa and Australia [11].

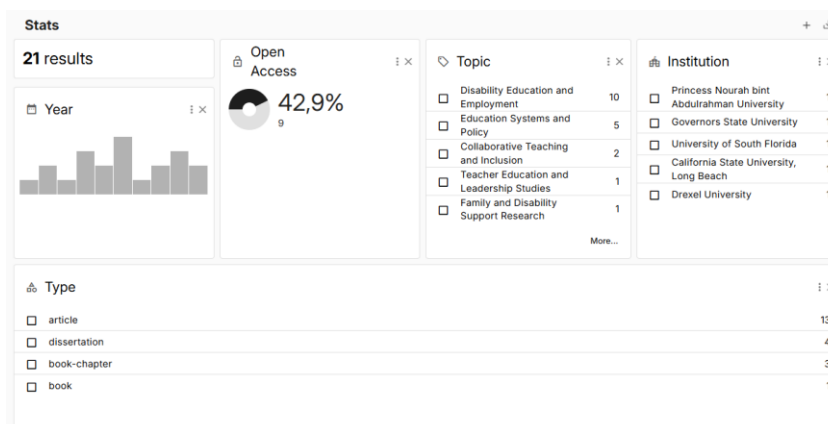


FIGURE 2. OpenAlex database query results.

A central finding from the content analysis is the fundamental transformation of the teacher's professional role. In contemporary international pedagogy, the concept of pre-profile training is integrated into the broader concept of transition planning (school-to-work), requiring teachers to go beyond traditional knowledge transmission [12]. Special education teachers are evolving into transition coordinators, acting as a link between schools, families, rehabilitation services, and employers [13]. Furthermore, teachers are increasingly expected to perform the functions of career counselors [14]. Analysis of relevant studies from 2015 to 2025 highlights several persistent trends in the evolution of scientific perspectives on the employment of individuals with intellectual disabilities. The dominant theme in contemporary literature is the transition from school to adult life [15, 16]. This stage, often referred to as the transition cliff, is considered the most critical period [17]. A key conclusion of most studies is that successful integration correlates less with narrow professional skills than with social competence and self-determination [18]. Researchers emphasize the gap between academic programs and labor market realities: young people are often unprepared for the social environment of the workplace, rather than the execution of specific job tasks.

Current trends in professional self-determination for children with disabilities emphasize comprehensive support, including psychological, pedagogical, social, and vocational guidance; the use of adapted vocational training programs to develop basic work skills; fostering communicative and social competence as a foundation for professional self-realization; and the inclusion of self-assessment and reflective elements appropriately adapted to students' individual abilities [19, 20]. Studies from CIS countries, particularly those of S.N. Chistyakova, highlight that career guidance management can only occur through the development of professional self-determination, wherein the individual is both the object of guidance and the subject of their own professional choice [21]. Chistyakova notes that changes in professional self-determination should be viewed as an objective indicator of personal development, encompassing professional orientation and professional self-awareness. Thus, the relevance of professional self-determination for children with disabilities is dictated not only by societal and labor market requirements but also by the need to ensure their psychological well-being, resilience to stress, and the opportunity for full self-realization. Psychopedagogical principles emphasize the importance of early, systematic, and individualized support aimed at unlocking each child's potential.

The contextual approach has significantly developed, shifting the focus from the adolescent to their environment. Recent studies, including reviews [22, 23], identify family and parental expectations as some of the strongest predictors of future employment. Research actively explores the influence of different parenting strategies from overprotection to active involvement on professional self-determination, arguing for the necessity of working with the family system as an integral part of career guidance. Simultaneously, paradigms in inclusive education are evolving. According to reports from international organizations [24], there is a clear shift from segregated workshop models to supported employment in the open labor market.

Literature widely discusses the effectiveness of interventions such as adapting workplace tasks to employee abilities and implementing assistive digital technologies for on-the-job learning [25].

Regarding publication types, the data set includes systematic reviews, empirical studies on method effectiveness (e.g., video modeling), and sociological reports analyzing hiring barriers and economic aspects of inclusion. Notably, modern review articles increasingly integrate the perspectives of young people with disabilities, challenging the tradition of ignoring their agency. However, the literature also reveals significant methodological limitations. There is a lack of studies centering the voices of individuals with intellectual disabilities themselves (with surveys dominated by parents and teachers), and a severe shortage of longitudinal data tracking career trajectories 5–10 years post-education. In summary, the accumulated evidence convincingly demonstrates the insufficiency of isolated vocational training. The contemporary scientific consensus emphasizes the need for a comprehensive approach, including the development of soft skills, systemic family engagement, and the creation of an inclusive environment, shifting the focus from mere skill acquisition to holistic preparation for independent living.

III. METHODS

The study employed a comprehensive research model based on a combination of scientific literature analysis and independent empirical data collection aimed at identifying the characteristics of preparing children with disabilities for future professional activity. The use of a mixed-methods design allowed the issue under study to be examined across multiple analytical dimensions, providing a holistic understanding of its substantive and organizational aspects. The objective of the research was to develop and describe mechanisms of psychological and pedagogical support for students with disabilities during pre-profile training, aimed at creating conditions for successful socialization, the development of basic independence, and inclusion in professional activity. Both quantitative and qualitative approaches were applied: quantitative data analysis facilitated the identification of stable trends, while qualitative analysis helped uncover key factors and interrelationships, enhancing the validity and reliability of the study's conclusions [8].

The review of the scientific literature on pre-profile training for students with disabilities was based on the analysis of 62 sources, including dissertations, systematic reviews, and empirical articles from international databases such as ERIC, PsycINFO, and Google Scholar, covering the period from 2020 to 2025. The review primarily focused on the role of the teacher, specifically studies addressing professional attitudes, competencies, practices, and systemic barriers faced by educators. Bibliometric data on publication activity and trend analysis in special education and vocational guidance were also considered. The search strategy employed a complex combination of keywords using logical operators to link concepts related to the professional role of educators (e.g., special education teacher, transition coordinator), transition planning processes (transition planning, pre-vocational training), and characteristics of the target group (students with disabilities). Inclusion criteria were limited to studies analyzing professional competencies, practices, and systemic barriers encountered by teachers in the context of the modern educational paradigm. Boolean search strings were adapted for each database, for example: (special education teacher OR vocational educator OR transition coordinator) AND (transition planning OR pre-vocational training OR career readiness) AND (students with disabilities OR "special educational needs").

The empirical phase of the study aimed to refine and expand the conclusions drawn from the theoretical analysis, with a focus on the organization of pre-profile training for students with disabilities and the conditions for implementing the educational process. It examined the forms of support provided to children during the formation of professional interests and initial self-determination. Two complementary methods were employed to collect empirical data: a survey and in-depth semi-structured interviews. This combination provided multifaceted information on practical aspects of the work. Interviews served as the main tool for qualitative analysis and were designed with consideration of the specifics of pre-profile training for students with disabilities. The interview questions for teachers were structured into seven thematic blocks, based on a content analysis of the formulation and objectives of each question, and aligned with similar blocks used in interviews with students with disabilities (adolescents with disabilities). This enabled

comparative analysis of the perceptions and perspectives of both parties in the educational process. Questions included both closed and Likert-scale items, allowing for comprehensive documentation of participants' opinions and professional experience.

Participant selection was purposive, ensuring diversity of professional positions and viewpoints. Prior to full-scale distribution, the survey instruments underwent pilot testing with a small group of teachers to assess question clarity, relevance, and logical sequence. Feedback led to adjustments in the wording and structure of the questionnaire, improving data quality and reliability.

The sample included 46 teachers from seven regions of Kazakhstan, encompassing labor education teachers, subject teachers, special education teachers (defectologists), social pedagogues, and methodological specialists. The sample aimed to capture the professional perspectives, challenges, and suggestions of practitioners directly engaged in the special education system. The inclusion of educators from different regions and educational institution levels enabled coverage of diverse organizational and resource conditions, thereby minimizing potential bias. All interviews adhered to ethical standards, ensuring confidentiality and voluntary participation.

Data analysis was conducted using statistical software for quantitative data, while interview materials underwent thematic analysis to identify recurring patterns, motifs, and stable meaning blocks. This method captured subjective interpretations, professional practices, as well as constraints and challenges faced by teachers when working with students with disabilities. All interview recordings were fully transcribed. The resulting textual data were processed using specialized software: Taguette [9] for coding and categorization, and MS Excel for cluster and comparative analysis, identification of logical relationships, and correlation analysis. Final results were presented in analytical materials in MS Excel format and in an extensive textual report including diagrams, tables, charts, and graphical illustrations. Additionally, a consolidated MS Excel database was maintained for subsequent in-depth analysis in future research projects.

The empirical component of the study was structured to ensure methodological transparency and coherence between research objectives, data collection instruments, and analytical procedures. Primary data were obtained from key participants in the pre-profile training process through questionnaires and semi-structured interviews developed in accordance with the conceptual framework identified in the literature review. The instruments were organized into thematic blocks reflecting major dimensions of professional self-determination and psychological and pedagogical support. Quantitative data were analyzed using descriptive and comparative techniques to identify prevailing tendencies, while qualitative materials were examined through thematic content analysis to reveal recurring patterns and meaningful divergences. The integration of both data strands was carried out at the stage of interpretation, ensuring consistency and methodological triangulation within the mixed-methods design.

IV. RESULTS

The results obtained through the application of the mixed-methods research design provide a substantially deeper understanding of the organization of preparing children with disabilities for future professional activity. The combination of systematic analysis of scientific literature with empirical data from surveys and semi-structured interviews offered a comprehensive and multifaceted view of the current state of pre-profile training for this group of students.

The findings not only document existing challenges, contradictions, and the limited effectiveness of certain educational and organizational practices aimed at fostering professional self-determination, but also identify promising areas where the implementation of innovative approaches shows potential to enhance the effectiveness of pre-profile training. Special attention was given to analyzing the content and structure of the diagnostic instruments used. The proposed categorization of questions into thematic blocks was based on a detailed content analysis of their wording, intended objectives, and semantic content, as well as an effort to ensure comparability with similar thematic blocks applied in interviews with students with disabilities.

This approach enabled a comparative analysis of the perceptions, attitudes, and evaluations of key participants in the educational process, creating conditions for a deeper understanding of both divergences and points of convergence between teachers' and students' perspectives on pre-profile training and career

choice. The thematic areas identified are critically important for diagnosing existing gaps in current educational programs and for substantiating directions for their further improvement.

As a result of the study, the key problems in the organization of pre-profile training for students with disabilities were systematized and structurally clarified, and substantive contradictions between the declared objectives of educational programs and their practical implementation were identified. The findings also revealed areas of inconsistency in how the effectiveness of pre-profile training is assessed by different participants in the educational process. The comparative analysis of teachers' and students' responses made it possible to distinguish both converging views on the importance of professional self-determination and divergent perceptions regarding the conditions necessary for its successful development. Overall, the results provide a more evidence-based foundation for refining the content, organizational mechanisms, and diagnostic tools of pre-profile training and for substantiating directions for its further improvement.

V. EMPIRICAL STUDIES

The empirical component of this study was aimed at identifying key characteristics and challenges in the organization of pre-profile training for students with disabilities within the practical work of educators in educational institutions. All data collected through surveys and in-depth semi-structured interviews with teaching staff were processed in a stepwise and comprehensive manner.

Quantitative survey data were analyzed using descriptive and comparative statistical methods, which allowed the identification of general trends, response frequencies, and differences in teacher evaluations based on professional experience, position, and working conditions. Data processing and systematization were conducted using MS Excel, including grouping of indicators, creating pivot tables, and visualizing data through charts and graphs. Qualitative data obtained from the interviews were analyzed using thematic analysis. All interview recordings were fully transcribed, after which the text data were coded and categorized using specialized software, Taguette. The analysis highlighted recurring meaning units, stable themes, and analytical categories reflecting teachers' professional perceptions, their practices in pre-profile training, as well as the difficulties and barriers encountered when working with students with disabilities. The integration of quantitative and qualitative data enabled a mixed-analytical approach, providing a holistic understanding of the state and specifics of pre-profile training for children with disabilities. This approach facilitated the identification of both systemic challenges and promising directions for improving pedagogical practice based on the real experiences and professional reflection of teachers.

The findings can inform the planning of professional development activities for specialists, the creation of methodological recommendations, adjustments to support programs, and the development of regional and municipal educational policies in the field of inclusive education. Responses to questions regarding perceptions of the professional future of students with disabilities revealed a focus on realistic and practical approaches to vocational preparation. Most respondents perceive the professional future of students with disabilities not as a full-fledged career trajectory but as an opportunity to be useful, socially integrated, and engaged in daily work or routine activities. Teachers emphasized the importance of considering diagnoses: for example, students with severe intellectual disabilities are expected to perform basic work functions, whereas children with developmental delays or hearing impairments are offered more applied or technical pathways. Some teachers provided examples of successful employment, such as a graduate working at a car wash, valued for reliability.

The analysis indicates that teachers possess an empirical understanding of the limits of students' abilities while maintaining belief in certain positive scenarios. Overall, professional perceptions of teachers regarding students with disabilities are predominantly realistic and constrained, focusing on social adaptation rather than on the development of a full professional career.

The most frequently observed teacher argumentation is the realistic approach to student capabilities (29%), emphasizing adaptation of work tasks to the limited cognitive and physical resources of students. Teachers consider it necessary to suggest only professions that match students' actual functional abilities and do not require high intellectual or social demands. Nearly as common (25%) is argumentation based on medical or psycho-pedagogical diagnoses, where career choices are directly linked to reports from

Psychological-Medical-Pedagogical Commissions (PMPC) or observed learning limitations: They have intellectual disabilities, so simple manual work is required.

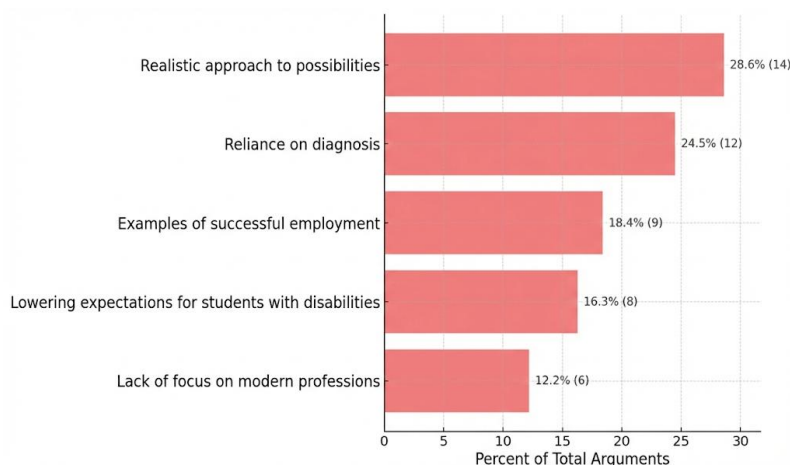


FIGURE 3. Types of teacher argumentation regarding professions.

The use of successful employment examples ranks third (19%) as a narrative strategy, where teachers cite real cases demonstrating students' ability to integrate into work, such as jobs at car washes, warehouse assistants, or landscaping. This approach allows teachers to support their stance with practical evidence rather than abstract reasoning. In 17% of responses, teachers express the need to moderate students' overly ambitious expectations, highlighting that many students aspire to professions beyond their realistic capabilities. The school's role, according to these teachers, is to gently adjust these expectations to prevent future frustration. One respondent stated: They say they want to be doctors or police officers, while we try to explain that this isn't possible with their diagnosis. We guide them toward simpler jobs. Such formulations often carry the logic of protecting the child from disappointment: Of course, they have dreams, but we must understand their abilities and not give them illusions. Some statements reflect a normative tone: We focus on capabilities, not desires, emphasizing the teacher's responsibility to direct students with disabilities toward a realistic path. Even more empathetic expressions, such as some children want to be designers, but they have low attention and limited intellect, still imply restrictions on professional choice, often reduced to simple manual labor. This form of realism, while protective, limits the professional imagination and ambitions of children with disabilities. Finally, 12% of statements reveal a lack of orientation toward modern or digital professions, manifested in overlooking opportunities for adapted employment outside traditional manual labor. Contemporary careers are rarely mentioned, indicating a limited professional horizon among some respondents.

Table 2. Distribution of professions by category (desired by adolescents vs. suggested by teachers).

Profession Category	Teachers (%)	Students with Disabilities (%)	Examples of Professions
Technical	17,6	0	Locksmith, Operator, Mechanic
Creative and Digital	0	23,5	Designer, Photographer, Programmer, Musician
Office-based	23,5	5,9	Secretary, Clerk, Archivist, Translator
Other	0	5,9	Open a Salon, Other
Education and Social Services	0	23,5	Speech Therapist, Typhlopedagogue, Braille Teacher, Physical Education Coach
Manual Labor	35,3	5,9	Seamstress, Packer, Cleaner, Janitor, Landscaper

Service Industry	23,6	35,3	Cook, Baker, Barista, Hairdresser, Makeup Artist, Hotel Staff
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A comparison of the professional preferences of teachers and students with disabilities revealed significant discrepancies. Teachers most frequently direct students toward manual labor (35.3%) and service sector jobs (23.6%), whereas students themselves show a much higher interest in service sector professions (35.3%) and creative and digital fields (23.5%), which are completely absent from teachers' recommendations (0%). A similar mismatch is observed in the education and social services category: 23.5% of students express interest in these professions, while teachers do not consider them as viable options. Office-based professions are more often suggested by teachers (23.5%) but attract limited interest from students (5.9%), highlighting a misalignment between professional expectations and the motivational orientations of both groups.

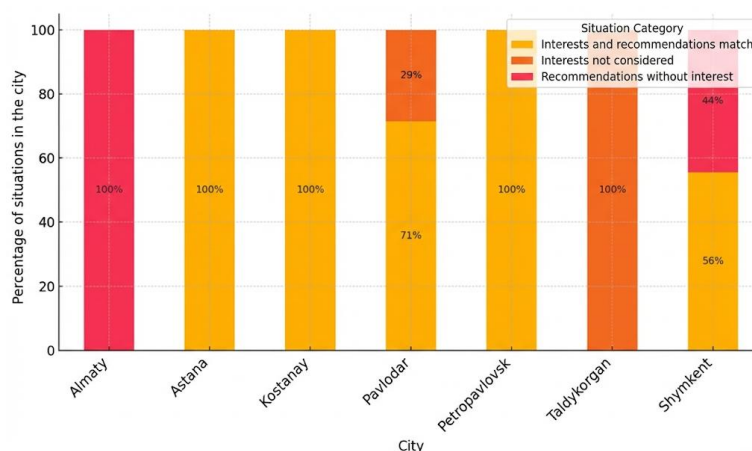


FIGURE 4. Alignment of students' career choices with teachers' recommendations by city (interview locations).

An analysis of the alignment between students' interests and teachers' career guidance recommendations, based on 98 contextual situations, revealed that in 47% of cases, students' interests were not reflected in the professional trajectories suggested by teachers. Alignment between interests and recommendations was observed in only 33% of situations, indicating a limited degree of personalization in career guidance. In 26% of cases, teachers proposed professional pathways without any evident interest from students, reflecting a predominantly directive and protective approach to professional self-determination.

Regional analysis showed notable variation: in certain locations, such as Taldykorgan, all recorded cases fell into the category of mismatched interests and recommendations, whereas in Pavlodar and Shymkent, a more diverse pattern was observed.

An analysis of teachers' responses indicates that perceptions of school resource availability vary significantly by region. In Petropavlovsk, Astana, and Almaty, half of the teachers (50%) reported having conditions that enable career guidance support for students with disabilities. Some described these resources as: We have a school psychologist and a special education teacher; we conduct career trials together with the college or Students attend workshops at the Children's Creativity Center. These cities present a relatively favorable picture, with part of the infrastructure for support already in place.

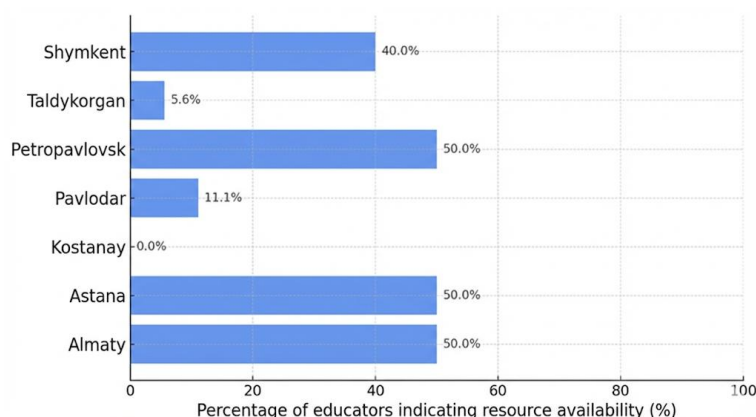


FIGURE 5. School resource availability by city.

In contrast, several regions show a much less favorable situation. Kostanay stands out, where not a single teacher reported the presence of appropriate resources. Here, the challenges include a lack of staff, infrastructure, and inter-institutional collaboration. Responses ranged from direct denial of resources (Nothing except the class teacher) to pronounced concern (No methodological materials, students with disabilities are isolated). In Pavlodar, only one out of nine teachers (11.1%) mentioned the presence of support. The vast majority indicated a shortage of specialists and poorly organized career guidance: Career guidance is formal, no conditions for real choice, Teachers are overloaded; there is no individual approach to students with disabilities.

Analysis of teacher interaction with external organizations revealed that 56.3% of respondents recognize their responsibility for career guidance while also noting partnerships with colleges, employment centers, and community organizations. However, 37.5% of teachers consider themselves responsible for career guidance but report no external collaboration, reflecting limited institutional capacity or lack of systemic coordination. No cases were recorded in which external collaboration occurred without teachers acknowledging their responsibility for career guidance.

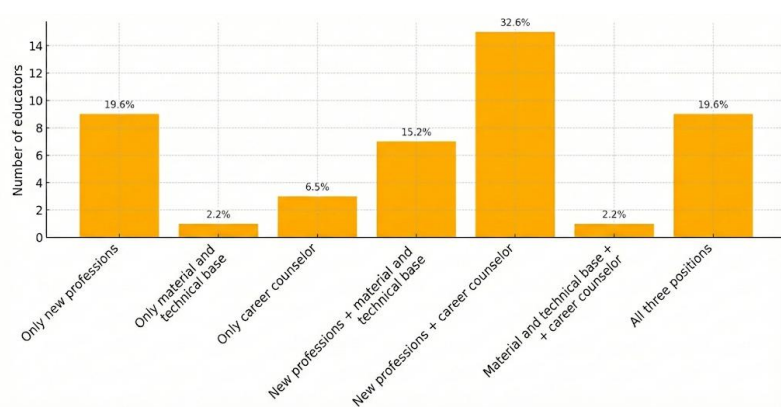


FIGURE 6. Teacher attitudes on career guidance and school resource conditions.

The presented bar chart illustrates the distribution of responses from teachers in special schools across three key attitudes: the need to introduce new professions for students with disabilities, the necessity to update the material and technical base (MTB), and the importance of including a full-time career guidance

specialist on staff. The data are grouped according to possible combinations of these attitudes, allowing for assessment not only of their frequency but also of the degree of consensus among teachers.

The distribution shows that a significant portion of respondents favors a comprehensive or partially comprehensive approach to reforming career guidance. Notable observations include: The largest group (15 teachers, 32.6%) supports the introduction of new professions and the inclusion of a dedicated career guidance specialist but does not emphasize the need to update infrastructure. This indicates that teachers prioritize staffing and content aspects of professional preparation, while somewhat overlooking material resources. A substantial share also supports all three attitudes (9 teachers, 19.6%), recognizing the need for holistic changes that include updating educational infrastructure, introducing new professional pathways, and providing dedicated staffing support. Another 9 teachers (19.6%) advocate exclusively for introducing new professions, without linking this need to resource or staffing changes, reflecting a partial understanding of the conditions required for implementing professional training in an inclusive environment.

Less common are positions emphasizing only one aspect (e.g., only MTB 1 teacher, 2.2%, or only career guidance specialist 3 teachers, 6.5%), as well as those combining two of the three directions. For instance, the combination of new professions and MTB (7 teachers, 15.2%) reflects a focus on content and technical resources but without emphasis on psycho-pedagogical support.

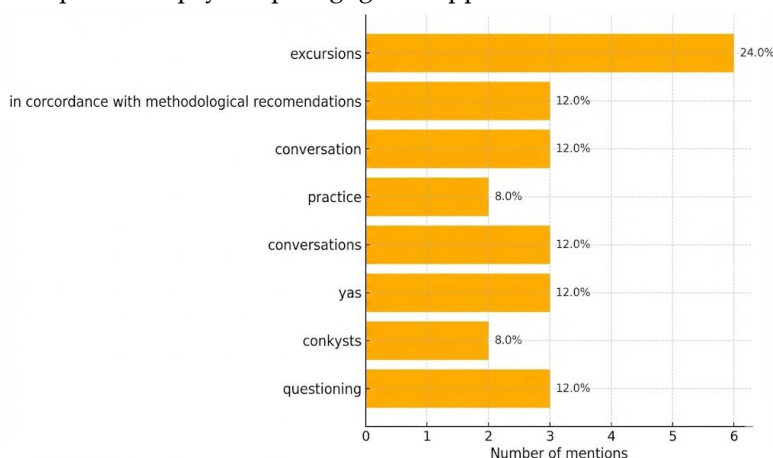


FIGURE 7. Methods of career guidance work.

Based on teachers' responses to the question, what recommendations would you give to motivate your students to pursue vocational education? a frequency analysis was conducted, classifying the suggestions into five key thematic categories. The analysis included 39 complete responses containing concrete pedagogical recommendations. The results are presented in a bar chart, showing both absolute values and percentages of the total respondents.

The most frequently mentioned category emphasized excursions, meetings with professionals, and real-world exposure to work environments, considered a tool for fostering motivation through practical and emotional engagement. This category accounted for 23.1% of all suggestions. An identical share (23.1%) was related to visualizing success, for example, by highlighting the professional achievements of alumni or involving former students in career guidance events. The next significant category was working with parents (12.8%), highlighting the importance of engaging students' immediate social environment to sustain their educational interest. Methodological support and game-based activities were less frequently mentioned (7.7% and 2.6%, respectively), but their presence indicates teachers' efforts to diversify motivational strategies. Overall, the data suggest that the teaching community perceives motivation as a multicomponent process, requiring a combination of practical, role-based, communicative, and methodological approaches.

1. ETHICAL CONSIDERATIONS IN THE RESEARCH

The ethical foundation of this study was comprehensively and meticulously developed to ensure the highest standards of scientific integrity, responsibility, and respect for the rights of participants in research involving human subjects. Adherence to ethical principles was viewed not as a formal requirement, but as a key condition for the quality and validity of the results obtained.

These considerations were systematically and purposefully integrated throughout all stages of the research process from the conceptualization and design of the study, through the procedures for collecting empirical data, to the stages of data processing, analysis, and interpretation. This approach ensured the protection of participants' interests, transparency of research procedures, and compliance with generally accepted ethical norms and international standards. The study received formal approval from The Ethical Committee of Kazakhstan Zhetysu University, Kazakhstan, on 13 January 2024 (Ref. No. 4).

Transparency: The authors affirm that the manuscript is honest, accurate, and transparent, and that the reported research adheres to the highest standards of scholarly integrity.

2. INFORMED CONSENT AND PARTICIPANT RIGHTS

Particular attention was paid to issues of informed consent and the protection of participants' rights. The analysis confirms that informed consent is not only a mandatory procedural requirement but also a crucial mechanism for upholding the principles of autonomy, respect for personal dignity, and voluntary participation. The application of a clearly structured, accessible, and ethically sensitive approach to informing participants helped create conditions for informed decision-making and minimized potential risks, especially when working with vulnerable groups.

Potential participants were provided with comprehensive and structured information regarding the aims and objectives of the study, the methods employed, potential risks, and anticipated benefits of participation. All information was presented in a clear and accessible manner, deliberately avoiding complex professional or technical terminology, thus ensuring comprehension by participants regardless of their educational background, social status, or cultural context. The consent procedure was organized to guarantee that participation in the study was entirely voluntary, free from any form of coercion, implicit pressure, or manipulation.

Participants were clearly informed of their right to decline participation or withdraw from the study at any stage without incurring any negative consequences, penalties, or loss of benefits to which they might otherwise be entitled. The informed consent process included a dedicated reflection period, during which participants had the opportunity to consider their decision, ask clarifying questions, receive additional explanations, and discuss any aspects of the study that raised doubts or interest. Written informed consent was obtained from each participant, providing documented evidence of the voluntary and conscious nature of their involvement.

By fully and transparently informing participants of potential risks, the study aimed to minimize the likelihood of adverse outcomes and safeguard the physical, psychological, and social well-being of all involved. The implementation of this approach not only ensured adherence to high ethical standards but also enriched the research by incorporating a broad spectrum of participant perspectives and experiences, thereby enhancing both its scientific and social value.

3. CONFIDENTIALITY AND DATA PROTECTION

The protocols implemented in this study were not treated as auxiliary measures but as an essential and integral component of all stages of the research process, including study design, data collection procedures, subsequent storage, processing, and analytical evaluation. This comprehensive approach ensured systematic and consistent protection of the information provided by participants.

To safeguard confidentiality and participants' privacy, all information that could directly or indirectly identify an individual was subjected to anonymization or pseudonymization procedures. Each participant was assigned a unique identification code, preventing any direct association of responses or data with a specific individual. All materials containing confidential information were stored in secure, encrypted formats, accessible only to authorized members of the research team. This approach to anonymization,

protection, and secure storage aligns fully with the guidelines of the Office for Human Research Protections and recognized international standards in the field.

In addition to these measures, a strict access control protocol was implemented. Only researchers directly involved in data analysis were permitted to work with primary and raw datasets, in accordance with clearly defined access procedures. Throughout the study, all team members adhered to the core principles of secure data handling, as outlined in data protection legislation, ensuring awareness of their responsibilities and obligations regarding information security.

Furthermore, robust data storage policies were established and enforced, regulating retention periods, conditions for secure storage, and procedures for safe destruction of data upon project completion. These measures collectively ensured the ethical, secure, and legally compliant management of all research data.

VI. DISCUSSION

The conducted study confirmed a significant interest among special school teachers in the professional preparation of Students with Disabilities (SWD) and revealed a comprehensive picture of the current state, challenges, and prospects in this area. The results of in-depth interviews with 46 teachers from seven regions of Kazakhstan indicated that the pre-vocational training system for SWD operates under conditions of limited resources, weak methodological support, and the absence of unified strategic guidelines.

Analysis of respondents' answers highlighted several stable trends. First, there is a predominant focus on a narrow set of traditional manual labor professions, while modern, creative, and digital fields are rarely considered as accessible. Second, career guidance is often episodic and fragmented, with no clearly assigned responsibility or methodological support. Third, there is a pronounced gap between students' professional interests and teachers' recommendations, which is particularly evident in adolescents' preference for creative and socially meaningful professions that are largely ignored by schools.

Teachers clearly articulate the need for systemic changes: updating the material and technical base, expanding the range of professions, adapting curricula, enhancing practical training, and introducing the position of a career guidance specialist. Such proposals were consistently repeated across different interview blocks, demonstrating a high level of professional reflection and engagement. At the same time, the identified discrepancies between teachers' attitudes and the motivation of students with disabilities underscore the necessity of developing a more flexible, individualized, and methodologically supported model of career guidance.

The results of this study not only reveal existing barriers in the professional self-determination system for SWD but also indicate key areas for growth. They can be utilized in the development of educational policy, teacher professional development programs, models of school-based support, and in building a dialogue between schools, families, and the professional environment. The findings of this study have important implications for disability education. At the practical level, they highlight the need to strengthen structured psychological and pedagogical support mechanisms within pre-profile training programs and to enhance teachers' competencies in facilitating professional self-determination among students with disabilities. At the theoretical level, the study contributes to a more nuanced understanding of the relationship between organizational conditions, teacher practices, and students' perceptions in the context of transition planning. Additionally, the results underscore the importance of developing coherent institutional strategies that integrate diagnostic tools, individualized support, and interprofessional collaboration to improve the effectiveness of inclusive vocational guidance systems.

VII. CONCLUSION

The conducted study on the issue of preparing students with disabilities in the upper grades of schools for subsequent professional and labor activities demonstrated that the combination of empirical and theoretical data convincingly indicates the insufficient effectiveness of narrowly focused, isolated professional training. Contemporary scientific approaches increasingly recognize the need for a comprehensive support model that includes the targeted development of universal social and

communication skills, systematic interaction with the family, and the creation of an accessible and supportive inclusive environment. Thus, the focus of professional preparation shifts from acquiring individual labor skills to forming a holistic readiness of the individual for autonomous and socially integrated life. Many researchers have discussed this in their studies, for example [22].

The results of the study allowed for a comprehensive understanding of the ethical foundations of organizing and conducting research involving human participants, emphasizing their crucial role in ensuring scientific integrity, social responsibility, and trust in the obtained results. The work demonstrates that research ethics cannot be considered a formal or secondary component; rather, it must serve as a guiding principle throughout all stages of the research process from design and interaction with participants to data processing, storage, and presentation. Equally important was the development and implementation of confidentiality and data protection protocols. The use of anonymization and pseudonymization procedures, strict access control, compliance with regulatory requirements, and adherence to international data management standards ensured a high level of protection for participants' personal information. Regular checks and audits of data handling practices confirmed the effectiveness of the chosen approaches and their alignment with recognized ethical standards.

The analysis of educators' evaluations regarding the content of labor and career guidance activities made it possible to identify both the resource strengths and problem areas in the organization of career guidance work in special educational institutions. The obtained data enabled the determination of priority directions for further improvement. Notably, the ecological systems theory, which formed the theoretical basis of this study, was confirmed in practice. The formulated conclusions emphasize the importance of a systemic and comprehensive approach to organizing psychological and pedagogical support for pre-vocational and vocational training of students with disabilities in special schools. Such an approach involves designing flexible educational programs that account for different student profiles and individual learning needs; integrating psychological, pedagogical, and social support; adapting the content, forms, and methods of teaching; purposefully developing students' independence and creative potential; facilitating interdisciplinary collaboration among specialists; and regularly evaluating and monitoring the effectiveness of implemented processes. The implementation of a comprehensive approach contributes to the creation of a favorable educational environment, ensuring conditions for successful socialization of students with disabilities and preparing them for informed professional choices and subsequent labor activity. Based on the findings, the following recommendations are proposed:

- Develop and implement a comprehensive system of psychological and pedagogical support for pre-vocational and vocational training of students with disabilities, taking into account their individual capabilities and educational needs.
- Strengthen the human resource capacity of the career guidance system by providing targeted training and professional development for educators on issues of professional self-determination and vocational preparation of students with disabilities.
- Update and expand the material and technical base of special schools to facilitate practice-oriented and flexible forms of learning.
- Ensure interdisciplinary collaboration and systematic monitoring that unites the efforts of teachers, psychologists, social educators, and administration to improve the effectiveness of career guidance activities and evaluate their outcomes.

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Author Contributions

All authors have read the final version of the manuscript and confirmed their consent for its publication. The contribution of each author to the development and planning of the study was equal.

Conflicts of Interest

The authors of this study declare that there are no conflicts of interest that could have influenced the objectivity or impartiality of the presented results.

Data Availability Statement

Relevant data can be made available upon request from the authors.

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Not applicable.

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