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Continuous psychological and pedagogical professional self-determination support for students

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ABSTRACT

The relevance of students' professional self-determination is shaped by ongoing socio-economic transformations, while existing career guidance systems remain uneven and insufficiently coordinated. This study investigates the state of vocational guidance and socialization of school students in Kazakhstan, including students with special educational needs (SEN) and diverse individual capabilities. The analysis draws on survey data from students and teachers across different regions of the country. The findings point to several interrelated problems in the organization of career guidance in secondary schools, including fragmented and inconsistent practices, limited consideration of individual characteristics and needs, and weak coordination among key actors at different levels of education. Students with SEN are largely excluded from structured career guidance support and do not receive adequate assistance in professional self-determination, which affects their further socialization and employment. The study also identifies the absence of effective mechanisms for interagency coordination. In response, a model of continuous psychological and pedagogical support for students' professional self-determination is proposed, based on the principles of continuity, differentiation, individualization and social partnership. The study contributes new empirical evidence on the challenges of inclusive career guidance in Kazakhstani secondary schools and proposes an integrated support model for students' professional self-determination, including students with SEN.

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1. INTRODUCTION

Globalization and socioeconomic change make professional self-determination relevant. Quality of education, labor market competitiveness, and purposeful job choice affect professional success and life satisfaction. Kazakhstan promotes student professional self-determination. The State Compulsory Education Standard of Kazakhstan states that basic secondary education should "creating a basis for the conscious choice and mastering of a profession, specialty, including special educational needs (SEN) and individual capabilities of students" [1]. Despite the legal framework, data from the Ministry of Labor and Social Protection of Kazakhstan and Kazakhstani scientists show that school leavers have trouble choosing a career, that parents and teachers influence their career choices, and that students have no idea what professions are in demand. The Centre for Inclusive Education of the National Academy of Education named after

Y. Altynsarin found that teachers have trouble working with SEN students, including career guidance, in general education schools in 2021 [2]. These data suggest that career advice strategies are not successful enough to help students make educated career choices.

Kazakhstan has implemented several policies to assist students' professional self-determination; however, their execution is varied. Insufficient methodological and human resources (HR) and little cooperation between schools, families, vocational education institutions, and employers describe the current career advice system. In addition, inclusion issues, particularly in aiding SEN students, suggest that present approaches do not completely accommodate learners' diverse needs. These systemic inadequacies require more integrated and context-sensitive career coaching frameworks. The core problem addressed in this study is the absence of a coherent and inclusive system of continuous career guidance in Kazakhstani secondary schools, particularly for students with SEN. Current vocational guidance practices remain fragmented and weakly coordinated, which limits schools' capacity to provide individualized support and to prepare students for informed educational and professional transitions. Consequently, career guidance is often treated as a separate activity rather than an integral component of inclusive educational practice and student development.

The scholarly literature on continuing psychological and pedagogical support of students' professional self-determination is lacking. Previous studies [3], [4] applied self-determination to education, addressing regulation, psychological needs, autonomy support, and teachers' autonomous motivation, but they did not explain continuous professional self-determination support. Leo *et al.* [5] and Raposo *et al.* [6] examined how teacher conduct, addressing basic psychological needs, and autonomous motivation affect student involvement, but they did not consider career guidance. Other studies [7]–[9] examined self-determination theory in the context of student motivation, principal learning support, and an integrated model of self-determination in the classroom, but they did not address continuous professional choice support. Self-determination and agency in assisting students with severe disabilities were educational goals [10], [11], but career guidance was not covered. Thus, most studies on self-determination in schooling focus on specific features rather than its use in career advising. A comprehensive examination of continual psychological and pedagogical support for student professional self-determination, including SEN, is needed. We must evaluate how career advice systems work and identify the variables that restrict their success, especially for SEN children. This issue must be addressed to improve educational performance, help students' labor market transfer, and promote long-term social integration. The study is also significant for educational practice and policy, as it highlights the need for more inclusive career guidance strategies, improved teacher preparedness, and stronger coordination between schools, families, vocational institutions, and employers.

An analysis of the current situation shows that the adaptation of graduates of educational organizations, including children with SEN, to the labor market does not adequately meet the existing needs of society. In this regard, there is a need to study the issues of organizing career guidance and socialization of graduates with SEN in educational organizations in Kazakhstan. The study therefore aims to examine the current state of the system of vocational guidance and socialization of school students in Kazakhstan, including SEN and individual capabilities. To achieve this goal, the study pursues the following objectives: to analyze the current state of vocational guidance and socialization of school students in Kazakhstan, taking into account individual capabilities and SEN; to examine the role and involvement of stakeholders in the vocational guidance system; and to develop methodological recommendations for teachers and specialists to support the continuous psychological and pedagogical development of students' professional self-determination, including those with SEN.

The study determined a hypothesis that to effectively teach students about a conscious choice of profession, teachers and specialists need to develop competencies in the early identification of interests, aptitudes, and special needs of schoolchildren and provide them with the necessary psychological and pedagogical support at all stages of professional self-determination. This study contributes to the literature in several ways. First, it provides empirical evidence on the current state of career guidance and professional self-determination support in Kazakhstani secondary schools, an area that remains insufficiently explored in the regional educational context. Second, the study specifically addresses the inclusion of students with SEN in career guidance processes, highlighting systemic barriers and support needs that are often overlooked in existing models. Third, the study develops a continuous psychological and pedagogical support model that integrates diagnostic, advisory, organizational, and interagency components into a coherent framework for inclusive career guidance in secondary education.

2. METHOD

A set of complex scientific cognition methods was used to address the study's aim and solve the tasks set. The State Compulsory Education Standard of the Republic of Kazakhstan, approved in 2018, was employed as a regulatory basis for the study [1]. Particular attention was devoted to the study of the requirements for the content and results of vocational guidance training for students at different levels of

education. The analysis of this document defined the formal framework and regulations for career guidance activities in schools and assessed the extent to which they are in line with government priorities in education.

The study employed a secondary analysis of materials obtained from a large-scale empirical study conducted by the Centre for Inclusive Education of the National Academy of Education named after Y. Altynsarin in 2021 [2]. In this study, 1,451 9th-graders, including those with SEN, and 8,288 general education teachers from Kazakhstan were surveyed via questionnaire. Urban, rural, and SEN pupils were included in the sample to represent different locations and school styles. The survey toolbox asked students about their professional plans and preferences, their awareness of professions and the labor market, and the quality and availability of school career guidance services. Based on national methodological principles and career guidance studies, the Centre for Inclusive Education created the survey questionnaire. To ensure content validity and clarity for student and teacher responders, professionals piloted and revised the questionnaire. Teachers were asked about career guidance organization, methodology, content, staffing, methodological support, impediments, and implementation issues.

Goals, content, forms, techniques, and resources of school career advising were investigated. This showed the strengths and weaknesses of current procedures and areas for improvement. The theoretical analysis was used to draw broad conclusions and explain career guidance inconsistencies from a current scientific perspective. Urban and rural schoolchildren and pupils with and without SEN were evaluated for differences in professional self-determination using empirical data. This method revealed common trends and group-specific problems in professional decision, as well as disparities in career advice support across social contexts. Descriptive statistical methods were used to summarize survey responses related to students' professional orientation and career guidance practices. Student's t-test in SPSS 26 was applied to compare selected indicators of professional self-determination and career guidance support between different groups of students.

Drawing on the empirical findings, methodological recommendations for continuous psychological and pedagogical support of students' professional self-determination were developed. The proposed model is holistic and systemic in nature, comprising target, content, procedural, and outcome components. It reflects the key stages of career guidance, the roles of the actors involved, and the pedagogical conditions required for its effectiveness. Particular emphasis is placed on methods and techniques for individualizing career guidance support for students with SEN. Ethical considerations were observed throughout the study. Participation in the survey was voluntary and anonymous, and respondents were informed about the purpose of the research. The study used secondary data provided by the center for inclusive education, with all personal data anonymized prior to analysis.

3. RESULTS

3.1. Analysis of the current state of vocational guidance and socialization of school students in Kazakhstan

A study of 1,451 9th-graders, including those with SEN, assessed Kazakhstani schoolchildren's professional orientation, socialization, talents, and special needs. Self-determination becomes most crucial in 9th grade, when teenagers and their parents must decide whether to stay in school and continue their studies in the 10th grade or enter college and obtain a job [2]. Only 48% of respondents have chosen a career after school, while 29% are hesitant ("rather yes than no"). What they will do after graduation? 16% of students did not know (5% and 11%). Answering was hard for 7%. Urban and rural students exhibit low professional assurance, which may indicate insufficient career support in educational organizations, the survey states. The responses of urban and rural kids were not statistically different.

The poll indicated that parents (36.5%), classmates (19.6%), and teachers give pupils most career information. Only 5.7% and 3.2% of respondents mentioned career advice professors and psychologists. By graduation, students struggle with professional choices, worry the future, and resent their parents for their decisions, making specialist support essential. High schoolers find professional self-determination unpleasant and unexpected. Developing psychological and pedagogical career assistance services is vital [12], [13]. Students and parents are having trouble getting proper career change information from the school. Schoolchildren say the following internal motives dominate interest in and ability for the future profession (84.7% and 49.7%). These data demonstrate students know career success depends on their abilities and interests. Further interviews showed that SEN kids choose careers based on external circumstances ("parents decide", "not all colleges accept us", "the choice depends on health"). Personal health goals of SEN students may collide with university and college requirements. Individuals must choose only educationally accepted occupations and specialties. These students need psychological and pedagogical support for professional self-determination, social development, and personality [2].

The vote includes 8,288 instructors. A total of 44% think schools should offer systematic career aid, and 38% think parents should help students choose a career. Based on polls and interviews with school

administrators, university and college tours and representative visits are the most popular career advice events. School, university, and college are students' main career advice institutions [14], [15]. However, spontaneity and fragmentation cannot govern the methodical nature of joint career advisory work or students' unique needs and talents. Students' responses show that career advice is limited to vocational education, campaigning, and publicizing popular specializations. Professional diagnosis and counselling are ignored. According to the methodological recommendations on diagnostics and determination of professional orientation of students in secondary education organizations of the Republic of Kazakhstan, vocational diagnostics should help students form self-perceptions, promote professional self-determination, career forecasting, and career choice based on their strengths, weaknesses, aptitudes. Through individual study, vocational counselling aids professional self-determination. Although advising, these criteria have not motivated school career guidance [2].

The study evaluated Kazakhstani schoolchildren's vocational advice and socialization. Work market and popular career information is inadequate in schools. Teachers notice a lack of professional reference books and films and career aid instructional tools. Lack of career guidance time hurts schools. Only a third of teachers use career coaching methods, whereas majority use online platforms and tools. Only 18% of teachers seek career advice. Schools that give vocational coaching without addressing students' needs and talents violate inclusion. Most teachers lack systematic knowledge of career guidance support technology and SEN psychology and struggle to personalize career guidance to SEN pupils. Despite the 2022 introduction of career advice instructors in Kazakhstani schools, many schools still lack them and hire teachers without the requisite training. Parental involvement in vocational guidance is lacking, especially for SEN students' professional self-determination. Half of parents disagree that the instructor offers career guidance meetings. Special education parents are not supported in their children's career choices. Schools, families, technical and vocational and higher education institutions, employment centers, and employers do not collaborate on student career advising. Schools, employers, employment services, and other social institutions have poor interactions.

The results showed that society needs competitive, highly skilled professionals but lacks systematic professional mentoring and inclusive socialization in secondary education. Stakeholder fragmentation and inconsistency disrupt the labor market, increase low-skilled workforce, and raise vulnerable youth unemployment. The results show that there are no systemic processes or coordinating center to guarantee all stakeholders coordinate their work to prepare kids for an informed choice of a modern, in-demand profession that suits their particular skills and special needs.

3.2. Role and involvement of stakeholders in the system of professional orientation of students

Student professional self-determination is complex and needs collaboration from schools, families, vocational education groups, businesses, government agencies, and public institutions. The efforts of these stakeholders to prepare youngsters for job selection must be integrated to succeed. Schools help kids socialize and build their personalities and careers. Schools promote students' interests and aptitudes, introduce them to careers, and help them fit their traits. Students receive relevant, authentic, and thorough information about modern professions, the labor market, in-demand skills, and professional progress [16], [17]. This role is implemented through career advice lessons, chats, lectures, debates, business visits, professional gatherings, and job fairs. School information must be impartial and age-appropriate. The diagnostic function assesses the student's personality, interests, aptitudes, abilities, values, and professional goals. Competent diagnostics can help students choose careers, define their professional direction, and profile. Diagnostic-tooled school psychologists are essential for this function [18], [19].

Professional self-determination is supported by psychological and pedagogical recommendations based on student qualities and labor market needs [20]. Support students' career choices with regular vocational advice. SEN students lack professional skills and need experienced coaching, making this post vital. The organizational role promotes student professional self-determination through vocational advice [21]. Examples include career coaching contests, personal growth, master seminars, projects, professional tests, and internships. These measures must be systematic, consistent, and continuous across all educational levels. Career advice professionals, instructors, psychologists, social educators, class teachers, and administrators collaborate [22]. The school must coordinate with vocational training groups, enterprises, employment services, and public associations. A school can only provide effective career advising by working with all stakeholders. Evidence shows that schools rarely perform all of these functions. Often fragmented and uneven, vocational coaching concentrates on the most popular and prominent jobs without addressing the economy or individual attributes. Professional diagnosis and counselling for SEN students are neglected [2].

Most teachers lack career coaching skills. Studies show that many teachers lack knowledge of the labor market, career advisory tools, and how to help students choose jobs [2]. Diagnostic tools, career advice videos, and reference literature are lacking in school methodology. Career guidance teachers were created to address these difficulties, however many schools have discovered that they are absent or undertrained and teach classroom or organizational skills. This calls into question schools' career coaching role. Career advice should be provided by the school to empower students' careers. This will require organizational,

administrative, career guidance aim, content, technology, teacher training, and social collaboration reforms. Family dominates professional self-determination. The family shapes work and professionalism ideals. The family influences the child's career choices [23]. Several family functions affect children's professional self-determination, as shown in Table 1.

Table 1. Key family functions in children's professional self-determination

The function of the family	Characteristic
Value-based	Transmission to the child of value ideas about the role of work and profession in human life. The influence of family labor values on the motivation of a young person's professional choice.
Information	Enriching the child's knowledge and understanding of the world of professions. Family is a primary source of information about professional activities, content and specifics of different types of work. Gaining knowledge through observing parents' work, stories, discussions, and reading literature together.
Motivational	Forming a positive attitude towards certain types of professional activity in children, stimulating their interest in choosing a profession. The influence of parents' professions on children's professional aspirations. A positive example of parents who are passionate about their work is a stimulus for a child's interest in this professional field.
Consultancy	Providing assistance and support to a child in a situation of professional choice. The importance of constructive dialogue and joint discussion of possible career options, taking into account the individual characteristics and interests of the child, rather than directive instructions and categorical judgements.

Many families waste vocational guidance opportunities. Few parents actively help their children choose a career and match their skills, according to study [2]. Parents rarely discuss this issue, leaving it to schools and children. Many parents struggle with their kids' professional independence. They often lack current understanding about modern occupations, the labor market, vocational training, and career guidance for children. Parents' stereotypical professional standards often encourage children to choose prominent but not in-demand occupations without evaluating their talents. Family with SEN children struggles with career decision. Parents of such children rarely investigate vocational training and employment or push them toward a few SEN-friendly jobs. Children's skills, interests, and needs are often disregarded [2]. Parent career advice and psychological and pedagogical education are more important under these conditions. As vital institutions of professional self-determination, schools should work directly with children, inform and advise parents, and promote constructive family-school career guidance [24]. Such communication includes parent-teacher conferences, individual consultations, career guidance, training, and business games.

Families with SEN kids need special care [25]. These families need advice on vocational training, correctional and developmental training, and professional and social adaptability. Methodical and tailored to each family's needs and resources, parental treatment should work. Student professional self-determination is affected by family preparation and career advising. The school must help parents choose responsible careers for their children. Self-determination for schoolchildren requires contact with vocational education groups, employers, employment services, and state authorities. Practical experience with real professional activity and absorption in a production or company's milieu helps a young person build a comprehensive picture of work and match their interests and abilities with a vocation [26].

Schools' biggest career counselling partners are colleges and universities. Collaboration with these schools helps many students achieve professional self-determination. First, open days, job fairs, and educational organization presentations give students accurate and thorough information about a university or college's programs, admission requirements, and employment opportunities [27]. Many universities and colleges have psychologists and vocational counsellors that can help students choose a career based on personality and job market expectations [28]. Combining specialized lectures, professional trials, and social practices at a university or college helps students learn specialized courses, gain professional experience, and build super-professional skills. Students learn knowledge economy research and project skills by working with university or college instructors on scientific, creative, and social projects.

The school's best career advisers are employers seeking trained staff. Students can "try on" a professional position, evaluate its compatibility for their skills and interests, and learn about its production, content, and details through trips, interactions with successful professionals, master courses, and professional auditions. Communication with firms helps students grasp the present job market, critical abilities, and career-relevant attributes [29]. Professional trials, practices, and internships with industrial mentors teach students their professional preferences and skills. Finally, employer feedback helps the school construct electives, specialist modules, and educational programs that fulfil labor market needs and develop in-demand skills [30]. Research shows that not all schools have career-advising social networks. University-college interactions are confined to excursions and open days without student support or results monitoring. Few schools have successful career guidance partnerships with employers and non-governmental organizations [2].

This is due to several variables. Schools typically lack the organizational and methodological resources to foster social connection. Employers rarely work with schools because they see no value. Undefined career guidance coordination and harmonization for schools, universities, institutions, and enterprises. State education and employment policy must shift substantially to meet these challenges. Schools need social connections with external stakeholders and organizational and economic incentives to engage employers in students' professional self-determination. This activity requires methodological and HR assistance, including training specialists to connect schools, universities, colleges, and enterprises.

SEN students need special professional self-determination care. They must contact colleges, institutions, and employers. Customized educational programs, specific professional trials and practices, and work quotas help SEN students thrive in vocational training and employment. Special government support and employer incentives are needed. Schoolchildren's professional self-determination requires broad social involvement involving schools, vocational education groups, employers, government, and public structures. Collaboration is needed to build a flexible vocational advisory system for all youngsters, including those with SEN. As career assistance coordinator, the school should arrange this.

3.3. Methodological recommendations for psychological and pedagogical support of students' professional self-determination

Professional self-determination in school depends on quality and timely psychological and pedagogical assistance. A comprehensive, scientifically-based support system helps students choose a career based on their interests, aptitudes, personality, and labor market needs. Professional self-determination requires student personalities, interests, aptitudes, abilities, and values. Introduce this information early in school. Identifying student strengths and needs through systematic career guidance diagnostics is advised [31]. Psychological examinations, questionnaires, and interest maps are vocational diagnostics. Diagnostic tools for kids should be credible, reliable, and age-appropriate. Child diagnosis should consider personality, values, and intentions.

Schoolchildren need career guidance cards for uniformity. This card should include the student's diagnostic exam findings, professional interests, and career coaching efficacy. While studying with the instructor and educational psychologist, keep the career guidance card. Early career guidance diagnostics should identify students who need psychological and pedagogical support. Disability, professional maladjustment, and unformed professional interests may qualify students. Students must create career guidance plans with developmental, corrective, and support actions. Psychological and pedagogical support for student professional self-determination requires early vocational diagnosis. This strategy maximizes each child's abilities and requirements and provides timely aid. Professional self-determination is complex. Students need competent psychological and pedagogical support throughout their professional development [32], [33].

Primary school promotes work ethic, learning, and career awareness. Career counselling at this point should be interactive. Games, drawing and essay contests, excursions, and professional interactions can help kids develop vocational awareness. These activities should naturally fit teaching and subjects [34]. Secondary students pursue their passions and skills. Research and practice-based career coaching rule this period. Students should try new things and research jobs. Career coaching seminars, clubs, sections, projects, and tests are advised. High school career guidance should help pupils pick. Self-awareness, reflection, and professional identity are crucial throughout this phase. Examples include counselling, job coaching, business games, debates, and conversations. Students should also visit their fields' workplaces. Visits to businesses and organizations, internships, and social and professional activities may help [34]. Plan and implement each career coaching level regularly. Disorganized actions fail. Students' age, qualities, and professional preparation should inform occupational advice. Teacher, psychologist, parent, and social partner collaboration is needed for career advice. Each teaches professional self-determination, but their combined education works best. The school should work with parents, vocational education organizations, companies, employment agencies, and public associations as the main career guide [34].

Career help is needed for SEN students. Professional self-determination is hindered by lack of information, self-esteem, and interests. Psychological and pedagogical assistance for this set of schoolchildren's career choice should be expanded and reinforced. Open career guidance for SEN students is first. Consider psychophysical traits when choosing career coaching strategies. Vocational training requires adjustments for sensory, motor, and speech-impaired children. Use visual, practical, gaming, and information and communication technology (ICT) approaches often. Career advise for SEN students should reflect their strengths and weaknesses. Helping students recognize their strengths and weaknesses and match abilities to careers is crucial. Individual vocational diagnoses, counselling, and medical indications/contraindications-based professional decision suggestions are needed. SEN vocational tutoring stresses employment market, in-demand jobs, and opportunities. Students should know what occupations and settings they can handle considering their traits. Parents and students must know about SEN-friendly careers and specialties. Students should observe disabled professionals' achievement.

Career advice must be useful. SEN students should explore different occupations to gain experience. This will aid students in job selection and skill assessment. Promotions include master seminars, professional trials, and partnerships with businesses and disabled-employed organizations. The family is crucial to SEN students' occupational advice. Parents should help kids compare careers using career facts and abilities. Career coaching with parents requires lectures, seminars, and individual and group consultations. Parents must encourage trait-based professional self-determination in their kids. SEN kids need school cooperation with psychiatric, pedagogical, medical, and social support specialists for career guidance. Educational psychologists, defectologists, social workers, and healthcare experts should diagnose, counsel, and support students and families with career recommendations. Career services, job agencies, and vocational education institutions that serve SEN students must collaborate, as shown in Table 2.

Thus, psychological and pedagogical support for the professional self-determination of students with SEN has its specifics and requires special approaches. It should be comprehensive and systemic, based on close cooperation between all subjects of career guidance activities. Only if these conditions are met can each student be provided with optimal opportunities for professional choice and self-realization, considering their characteristics and the needs of the labor market.

Table 2. Peculiarities of psychological and pedagogical support of professional self-determination of students with SEN

Areas of efforts	Tasks	Methods and forms
Ensuring accessibility of career guidance activities	Addressing individual psychophysical characteristics when choosing forms, methods and means of work. Creating special conditions for full participation.	Use of visual, practical, game methods, ICT
Differentiation and individualization of career guidance	Addressing the real capabilities and limitations of students. Formation of an adequate self-image, matching capabilities with the requirements of professions.	Individual diagnostics, counselling, and development of recommendations for choosing a profession based on medical indications
Developing an adequate understanding of the labor market and employment opportunities	Informing about available professions and specialties, conditions for obtaining them, and employment prospects. Acquaintance with examples of successful professional self-realization of people with disabilities.	Information, excursions, meetings with specialists, and lectures for students and parents
Practical orientation of career guidance	Providing opportunities to try their hand at different types of labor activities, to gain experience in professional trials.	Organizing master classes, professional trials and practices at partner organizations
Involving families in the career guidance process	Helping parents to understand their child's aptitudes and capabilities, to search for and analyze information about available professions. Teaching parents how to support their children's professional self-determination.	Involvement of parents in career guidance activities, lectures, seminars and consultations
Interagency cooperation	Providing comprehensive diagnostics, counselling and support for students and their families. Cooperation with vocational training organizations with experience in training people with SEN, and employment services.	Involvement of specialists in psychological, pedagogical and medical and social support in career guidance, organization of interaction with external partners

4. DISCUSSION

The project attempted to continue Kazakhstani schoolchildren's professional self-determination through psychological and pedagogical assistance. Career advisory work suffers from fragmentation, poor schoolchild consideration, and weak actor interaction. The findings reveal that Kazakhstani secondary school career guidance is scattered and insufficiently inclusive for SEN students. The results urge more systematic, coordinated, and individualized professional self-determination support. They also recommend incorporating career guidance into the curriculum rather than delivering one-time sessions. The lack of consistency and continuity in career advising strategies supports Tomlinson and Jackson [35], who argue that the school system is not ready to support students' professional self-determination. This work addresses this issue in higher education, but it also affects employment choices.

A conceptual investigation of professional identity creation by Fitzgerald [36] revealed multiple paths. This shows that failing to address individual traits restricts career recommendations. The researcher emphasizes that professional identity building is non-linear, linked to personal development, and shaped by life experience. Here, standardized career guidance looks ineffective. This suggests that the curriculum should incorporate student-specific diagnostic, advising, and reflective career coaching. If the researcher is limited to theory, this study offers Kazakh secondary education career advice.

Armitage-Chan [37] employed veterinary students to demonstrate the efficacy of employing customized tools to help individual reflection and self-regulation in professional growth, supporting the need for a varied approach to career advising. The author's professional judgement method helps students

recognize their strengths and weaknesses, set professional growth goals, and develop their practice style. Individualizing career advising concepts from this study complement this reflexive professional identity approach. The researcher studies vocational education, but she emphasizes the need for school-level professional self-determination assistance to meet students' different educational requirements and prospects.

McKinney and Swartz [38], who interviewed handicapped people, reported many barriers to SEN students' professional self-determination. Employer preconceptions, workplace unpreparedness, and support gaps are these obstacles. Like this study, the authors emphasize the problem's complexity, requiring institutional solutions. While the researchers focus on job seeking, this study implies inclusive career guidance while schooling helps overcome professional integration barriers. Without targeted and inclusive career advice, educational and occupational disparity will persist. Based on a literature review and employer survey, Bonaccio *et al.* [39] found that organizational and psychological barriers limit the participation of people with disabilities in employment at all stages, from recruitment to adaptation and promotion. The authors suggest modifying HR management procedures and public perceptions toward disabled professionals to overcome these impediments. This study supports the need for early career coaching to help special needs students build a positive professional identity and job preparedness.

These findings support the idea that social attitudes shape the professional prospects of people with disabilities, as in previous study [40], who used Danish companies to demonstrate the relationship between employers' attitudes toward hiring disabled workers and actual employment practices. Disability under-representation in businesses was linked to employers' skepticism about their professional potential. This study illustrates the necessity of school-employer relationships to overcome prejudices and build an inclusive career advising environment that supports special needs students' professional aspirations. The results emphasize the need for coordinated policies that promote interagency collaboration and equal career guidance access at the system level. A key finding of the study is that the school coordinates career guidance subject interactions. This finding agrees with Zhang *et al.* [41] that educational organizations need a motivated and supportive professional development environment. The researchers focus on teacher professional development, but this study applies similar approaches to school career guidance.

This study emphasizes school supervision, which is congruent with Korna-Opincane and Katane [42], who found that theoretical analysis and empirical data support the school's involvement in students' professional self-determination. The authors demonstrate that education is sensitive to professional interests, aptitudes, and values and requires structured career advice. Diagnostics of students' features, active professional information and counselling, and engagement with parents and social partners are pedagogical conditions for good career advice, according to the study. These theoretical viewpoints match the practice-oriented recommendations provided in this study based on Kazakh school needs.

These findings emphasize the significance of education for professional self-determination [43]. They found in a survey of Latvian schoolchildren that career coaching at school helps kids develop a mature professional identity and make conscious decisions about their educational and career paths. The authors also stress the complexity of school career advising, which includes information on professions, psychological support for students' self-knowledge and self-determination, and crucial competency development. Based on these principles, this study presents a holistic career guidance support model that covers diagnostic, advising, organizational, and coordinated components of school and social partner activities.

The identified gaps in the current career guidance system, including fragmentation, insufficient individualization, and weak coordination among stakeholders, are directly addressed by the proposed model of continuous psychological and pedagogical support. The model introduces a structured and systematic approach that integrates diagnostic, advisory, and organizational components, ensuring continuity across different stages of schooling. It also emphasizes differentiated support tailored to students' individual needs, including those with SEN, and strengthens coordination between key actors involved in career guidance.

At the same time, the findings should be interpreted with caution, as the study is based on survey data and does not capture longitudinal changes in students' professional trajectories. Thus, the comparison of the results with the data of modern research shows that the developed system of continuous psychological and pedagogical support of students' professional self-determination meets the current scientific ideas about the patterns and conditions of professional development of a personality during school education. The proposed methodological recommendations not only rely on a solid theoretical basis but also enrich the tools for practical career guidance work with various categories of students, including those with SEN. At the same time, the study does not exhaust the full scope of the problem under consideration. Prospects for further development of the topic are related to the study of the possibilities of digital technologies in individualizing career guidance support, developing mechanisms for networking between schools and vocational education organizations and employers, and finding effective forms of involving students and their families in designing an individual educational and professional trajectory. A cross-cultural analysis of the best foreign practices of career guidance for students with special needs and an assessment of the possibilities of their adaptation to the conditions of the Kazakh education system is also an urgent research task.

5. CONCLUSION

An analysis of Kazakhstani schoolchildren's vocational guidance and socialization showed some major issues. Vocational guidance remains fragmented and inconsistent, does not cover all pupils, and does not consider their needs. Schools lack the information, methodology, and staff to provide career assistance. Professional self-determination is especially difficult for SEN students, who are excluded from career assistance. The study found that stakeholders' career advice efforts for schoolchildren are disorganized. As essential subjects of vocational assistance, schools do not completely apply their psychological and pedagogical support for students' professional self-determination. Parents are the main vocational guiding agents, although they often need help from specialists to support their children's career choices. Interaction between schools, vocational education institutions, and companies is inconsistent and unfocused on SEN children. There are no effective inter-agency school guidance coordination structures.

Study results have led to methodological recommendations for continuing psychological and pedagogical support of students' professional self-determination. Early career guidance diagnostics, a differentiated approach that considers student age and characteristics, continuity and regularity of career guidance influences, and coordination of all career guidance subjects are necessary for such support to be effective. The recommendations cover career advising for SEN students, including particular conditions, adaptive methods and resources, and partner organizations. The study confirmed the hypothesis that a holistic, multi-level system of psychological and pedagogical support for students' professional self-determination should cover all stages of schooling and take into account students' diverse educational needs and abilities. The study contributes an integrated model of continuous psychological and pedagogical support that combines inclusive career guidance principles with interagency coordination mechanisms for students' professional self-determination, including students with SEN. Implementing the ideas will assist Kazakhstani schools improve career guidance and solve the identified issues.

These findings suggest improving interagency collaboration, inclusive career advising, and teacher and specialist professional training to inform educational policy and practice. The concept can be utilized to create more cohesive and student-centered career assistance systems. Future study may test the approach in diverse educational environments and examine how digital technologies and cross-sector collaboration assist students' professional self-determination. The study has various drawbacks. The study used general education schools, but technical and vocational education students' professional self-determination needs a separate investigation. Career coaching was examined psychologically and pedagogically, not managerially or socioeconomically. The guidelines are general and need to be tailored to particular schools and student groups.

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AUTHOR CONTRIBUTIONS STATEMENT

This journal uses the Contributor Roles Taxonomy (CRediT) to recognize individual author contributions, reduce authorship disputes, and facilitate collaboration.

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C : **C**onceptualization
M : **M**ethodology
So : **So**ftware
Va : **Va**lidation
Fo : **Fo**rmal analysis
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R : **R**esources
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O : Writing - **O**riginal Draft
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P : **P**roject administration
Fu : **Fu**nding acquisition

CONFLICT OF INTEREST STATEMENT

Authors state no conflict of interest.

DATA AVAILABILITY

Data availability is not applicable to this paper as no new data were created or analyzed in this study.

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