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The Role of School Geography Curricula in Forming Students' Geopolitical Awareness

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ABSTRACT: Geopolitical awareness of high school students plays a key role in developing their critical thinking, patriotism, and understanding of global and regional processes. The school geography curriculum of Kazakhstan includes a section on geopolitics, which reflects the importance of studying this topic in the country's educational system. The purpose of this study is to analyze the content of school geography programs in the context of their influence on the formation of geopolitical awareness of students. For the study, a survey was conducted among 203 high school students in the Almaty region of Kazakhstan. The results show that the inclusion of geopolitics in the school curriculum contributes to a better understanding of international relations, the strategic position of Kazakhstan and its role in the world arena. However, the analysis revealed certain problems, including limited use of interactive methods, poor relevance of the material to current events, and significant differences in the level of geopolitical awareness between students in urban and rural schools. The article offers recommendations for the further development and improvement of educational approaches within the framework of the topic "Geopolitics". This study is original in that it represents one of the first systematic examinations of how Kazakhstan's secondary education system integrates geopolitics into the curriculum and how this affects students' geopolitical understanding. By addressing the existing research gap in geopolitics education in Kazakhstan an area rarely explored in comparative educational research it provides empirical evidence on curriculum effectiveness and student awareness. The findings not only inform local educational reforms but also offer valuable insights for the global academic community, illustrating how geopolitics education can shape youth perspectives on national identity and global interdependence. This study fills a research gap in geopolitics education by examining how Kazakhstan's school curriculum develops students' geopolitical awareness. Using textbook analysis and a survey of 203 students, it identifies key strengths and challenges in teaching practices. The results offer practical insights for improving geography education and inform policy development in Kazakhstan and beyond.

Keywords: school geography course, geopolitics, geopolitical awareness, Kazakhstan, high school students.

I. INTRODUCTION

Geopolitical awareness is becoming an increasingly important component of modern education, especially in the context of globalization and increasing international relations. It represents a set of knowledge, values, and skills that help students critically analyze international relations and understand the impact of global processes on local communities [1]. The importance of geopolitical awareness is highlighted in a number of studies, which point to the need to integrate it into educational programs [2-4]. School

textbooks play a key role in this regard, as they are the main source of information for students. The content of textbooks sets the direction for the study of key topics such as international conflicts, energy security, migration, and sustainable development [5-7]. They not only convey basic knowledge, but also serve as a tool for developing analytical skills, encouraging students to analyze complex geopolitical processes and form their own opinions [8, 9]. However, the effectiveness of textbooks depends on the quality of their materials, their relevance to the age of students, and the relevance of the topics included. As Dittmer and Dodds [10] point out, popular geopolitics presented in educational materials can both promote and hinder the development of critical thinking. This is especially true in the context of globalization, when students are faced with a flood of information containing elements of propaganda or bias.

Integrating geopolitics into school curricula is critical to the formation of national identity and citizenship. Benwell and colleagues (2019) [11] highlight those narratives of geopolitical events, such as the Falklands/Malvinas conflict, are often personalized through the experiences of educators and students, breaking down the traditional public/private divide in geopolitical discourse. This personalized perception allows students to more effectively think about complex issues. Schools play an important role in learning about global governance and geopolitics by encouraging students to critically examine their positions [12]. Lizotte and Nguyen (2020) [13] note that educational institutions not only serve national goals but also create spaces for negotiating these goals. Nguyen also highlights the significance of feminist geopolitics, pointing out that everyday experiences shape understandings of geopolitics beyond national boundaries [14]. Saputra and colleagues (2023) [15] highlight the importance of students' awareness of global politics for their understanding of national interests. Kachina (2011) [16] argues that a geopolitical approach to history teaching improves students' understanding of the relationships between geography, culture, and national politics. An important innovation is the use of digital tools and games in geography education. Zeidel and colleagues highlight the potential of digital strategy games for discussing borders and territorial conflicts, which contributes to political education [17]. Adanalı (2021) [18] also argues that video games can be effective pedagogical resources for developing young people's understanding of geopolitics.

Despite the growing body of global research on geopolitics in education, most studies focus on Western or major geopolitical actors, while educational contexts in Central Asia remain largely unexplored. Kazakhstan presents a unique case due to its strategic location between Russia, China, and the West, as well as its evolving post-Soviet education system that integrates elements of both national identity and global awareness. However, there is a lack of empirical research examining how school curricula in Kazakhstan foster students' geopolitical understanding and critical thinking. This study fills this gap by analyzing the content of school geography programs and assessing their impact on the formation of students' geopolitical awareness. In this context, the integration of geopolitical knowledge into school curricula in Kazakhstan, including the Geopolitics section in the 10th-11th grade geography course, is a vivid example of the practical implementation of this goal. Topics related to international relations, geostrategic challenges and national interests allow students to deepen their understanding of modern challenges and global processes, as well as develop critical analysis and independent thinking skills. Despite the successes achieved, the issues of adapting educational materials and their compliance with modern challenges and students' needs remain relevant. To assess the effectiveness of such programs and materials, it is important to consider the following questions:

- To what extent do high school students in Kazakhstan perceive the role of school geography programs in developing their geopolitical awareness?
- Are there statistically significant differences in high school students' perceptions of the role of school geography programs depending on the students' gender, academic performance, and region of residence?

Most previous studies on geopolitics education have focused on Western contexts and often lack empirical data on how such education shapes students' critical thinking. These limitations highlight the need for research in regions like Kazakhstan, where geopolitical dynamics are distinct. This study is grounded in Bloom's taxonomy, which provides a framework for evaluating how students progress from basic knowledge of geopolitical concepts to higher-order analytical and evaluative thinking.

II. RELATED WORK

The integration of geopolitics into school curricula varies considerably depending on historical context, national politics, and global dynamics. Education systems often reflect and reinforce their countries' geopolitical narratives, promoting national identity and loyalty in students. For example, in Argentina, curricula emphasize nationhood and the development of good citizens [19]. Similar approaches can be seen in other countries, where education is used to inculcate patriotic values and shape geopolitical subjects [20]. Schools can act as platforms for complex negotiations and rethinking of state goals. In South Asia, countries' geopolitical interests shape education policies, as was the case in Afghanistan, where curricula reflected the ideological struggle between the USSR and the USA [21]. The influence of geopolitics on education systems is also evident in Soviet and post-Soviet countries, where education was closely linked to global political dynamics [22]. International education has become another arena for the expression of geopolitical interests. The COVID-19 pandemic has revealed how international tensions can transform educational exchanges from a tool for cooperation into a weapon of political disputes [23]. The concept of curriculum decolonization, which aims to rethink colonial legacies in education, is becoming important for promoting more inclusive educational environments [24, 25].

Studying historical events in the context of geographical factors helps students understand the influence of geography on international conflicts, interactions between countries and the formation of cultural diversity [26]. This contributes to the development of global thinking and critical analysis of modern challenges such as globalization, sustainable development and international relations [27]. Teachers play an important role in the implementation of geopolitical education, and they must have deep knowledge and methods to adapt complex theories to the age characteristics of schoolchildren. The use of modern technologies, including electronic textbooks and multimedia resources, makes learning more engaging and effective, contributing to the development of critical thinking skills in students and the ability to form independent judgments about global and local processes [28]. Despite the importance of geopolitical education, its integration into school curricula faces a number of challenges. The main barriers include a lack of qualified personnel, limited resources, and the difficulty of adapting complex international concepts to the local context. Carter and McCormack (2006) [29] also note that popular geopolitical narratives found in the media and popular culture can lead students to oversimplify or distort their understanding of international processes. This highlights the need for a critical approach to the selection of teaching materials and their adaptation to educational goals.

Although previous studies have explored the integration of geopolitics into education in various national contexts, most have emphasized how curricula serve political or ideological purposes rather than assessing their actual educational outcomes. Much of the existing literature focuses on Western or major geopolitical regions, with limited empirical data from Central Asia or post-Soviet states. These studies often overlook how students themselves perceive and internalize geopolitical concepts taught in schools, and how local educational practices interact with global narratives. Consequently, there remains a gap in understanding how geopolitics education functions within transitional educational systems like Kazakhstan's, where national identity formation coexists with global integration. This study addresses these limitations by providing empirical evidence from Kazakhstan, critically examining how the geography curriculum influences students' geopolitical awareness, and offering insights that expand the global perspective on geopolitics education.

School geography curricula play a central role in developing students' geopolitical awareness, equipping them with the knowledge and analytical skills needed to understand global processes. Textbooks, teaching methods, and approaches to integrating geopolitical topics should help students develop critical thinking and the ability to understand the interrelationships between local and global events. Achieving these goals requires an interdisciplinary approach that includes the use of modern technologies, interactive teaching methods, and relevant materials. Particular attention should be paid to the quality training of teachers so that they can effectively adapt complex theories and concepts to the level of understanding of students. Such measures contribute to the formation of active, informed citizens capable of participating in solving the complex problems of the modern world.

III. MATERIAL AND METHOD

The study is based on the method proposed by Rommel Mahmoud Al-Ali and Ali Ahmad Al-Barakat (Al-Ali and Al-Barakat, 2024) [30]. To ensure a comprehensive understanding of how geopolitics is integrated into school education, this study employed a mixed-methods research design combining qualitative and quantitative approaches. The qualitative component involved a detailed analysis of geography textbooks for grades 10–11 to evaluate the depth and relevance of geopolitical topics. The quantitative component consisted of a survey of 203 high school students to assess their understanding and perception of these topics. This design was chosen to link curriculum content with students' cognitive and affective development, allowing for both descriptive and inferential analysis. The mixed-methods approach provides a more holistic view of how educational materials and classroom experiences shape geopolitical awareness in the specific context of Kazakhstan's evolving school system. To achieve the objectives of the study, a mixed methodological approach was used, including qualitative and quantitative research. The approach is adapted to the specifics of school geography and the geopolitical specifics of Kazakhstan and includes 2 stages.

- Analysis of educational materials: A detailed analysis of school textbooks for grades 10–11 was conducted to assess the depth of coverage of geopolitical topics and the presence of modern, relevant examples reflecting the realities of the current global situation.
- Survey: The study covered 203 high school students from schools in Almaty and the Almaty region of Kazakhstan. The questionnaire was structured to assess the level of understanding of key geopolitical concepts, interest in the topic and its perception as relevant.

The collected data were processed using the statistical package IBM SPSS Statistics Version 30.0.0.0 (172). The results are presented as mean values, standard deviations and interpretation of qualitative findings.

Ethical approval for this research was obtained from the relevant institutional review board. Participation in the study was entirely voluntary, with informed consent secured from students and their parents. To ensure confidentiality, no personal identifiers were collected, and all responses were treated anonymously. The collected data were used exclusively for academic and research purposes in accordance with ethical standards.

1. DATA COLLECTION

The data collection process began with the development of a questionnaire (Appendix 1) in Google Forms aimed at studying high school students' perceptions of the impact of school geography programs on their awareness of geopolitics. A link to the questionnaire was sent to teachers, who helped explain the purpose of the study and organize the completion of the questionnaires by the students. 11th grade students completed the questionnaire during school hours under the supervision of the researcher and geography teachers. To ensure correct completion, all participants were provided with clear verbal and written instructions explaining the purpose of the survey and how to work with the questionnaire. Data collection lasted for a month, during which it was possible to cover the planned number of participants. After completing the questionnaires, they were checked for correctness and completeness. Responses were coded with numerical values and analyzed using a 5-point Likert scale, where 1 meant Completely disagree and 5 Completely agree. This approach made it possible to study in detail the students' perceptions of each aspect under study. For statistical processing of the data, IBM SPSS Statistics Version 30.0.0.0 (172) was used. As part of the analysis, mean values and standard deviations were calculated, and a multivariate analysis of variance (MANOVA) was conducted, which made it possible to assess the influence of gender, place of residence, and academic performance on students' perceptions of the role of geography curricula in increasing their geopolitical awareness.

2. RESEARCH DESIGN

The study was conducted among high school students (11th grade students) of schools in the Almaty region, covering both urban and rural schools. Initially, it was planned to include both 10th and 11th grade students in the sample. However, it was decided to limit the sample to 11th grade students, since in the 10th grade the study of the topic "Geopolitics" is just beginning, while in the 11th grade students have already

completed the study of the entire section, which allows for more complete and informed answers. Due to the peculiarities of the class structure and the presence of restrictions on the number of 11th grade students (which is associated with a reduction in the number of senior pupils after the 9th and 10th grades, since many students choose to continue their education in colleges), 203 students (Table 1) from different schools in Almaty and the Almaty region took part in the study.

The main objective of this study is to critically explore how the inclusion of geopolitics in the school geography curriculum contributes to the development of students' geopolitical awareness and critical thinking skills. In particular, the study aims to compare the perceptions and levels of geopolitical understanding among students from urban and rural schools, identifying factors that influence these differences. By adopting an exploratory and comparative approach, the research seeks to reveal how varying educational environments and teaching practices shape students' ability to analyze global and national geopolitical processes.

Table 1. Psychometric characteristics of the study sample by independent variables.

Variable	Categories	Frequency	Percentage (%)
Gender	Female	122	60.1
	Male	81	39.9
Geographic area	City	126	62.1
	Village/Town	77	37.9
Academic achievement in geography*	Excellent (85%-100%)	64	31.5
	Good (65%-84%	103	50.7
	Satisfactory (40%-64%)	32	15.8
	Unsatisfactory (0-39%)	4	2.0

*Academic achievement is classified into four categories according to the standards of the Ministry of Education of the Republic of Kazakhstan.

3.1 Quantitative Research Design

A questionnaire was used to achieve the objective of the study to assess high school students' perceptions of the role of geography curricula in raising their awareness of geopolitics. The questionnaire was designed by the authors of this study and included 25 items divided into three main areas:

- Cognitive Area: This area includes 7 items aimed at assessing students' understanding of key geopolitical concepts and information presented in the curricula.
- Skill Area: Contains 9 items that focus on assessing the practical skills acquired by students through studying the curricula.
- Affective Area: Includes 9 items related to the assessment of the role of the curricula in developing respect, tolerance, responsibility and interest in geopolitics, including environmental and international aspects.

The instrument used a 5-point Likert scale.

A. Research Variables

The study included the following variables:

i. Independent Variables:

- Gender: two levels (male, female).
- Geographical Region: two levels (urban, town/village).

- Academic Performance: four levels Excellent 85%-100%, Good 65%-84%, Satisfactory 40%-64%, Unsatisfactory 0-39%.

ii. Dependent Variable:

The responses of the research sample to the questionnaire items reflecting the students' views on the role of the geography textbook in developing their geopolitical awareness.

B. Validity and reliability of the instrument

To confirm its validity, the questionnaire was submitted to two professors and three geography teachers for expert evaluation. The experts assessed its content for compliance with the objectives of the study, linguistic clarity and relevance. Based on the analysis, the final version of the questionnaire included 25 items: 7 for the cognitive area, 9 for the skills area and 9 for the affective area. The questionnaire was tested for reliability using Cronbach's alpha coefficient. For the cognitive, skill and affective domains, the values were 0.931, 0.920 and 0.949 respectively, and the overall indicator for all 25 items of the questionnaire reached 0.972, indicating an extremely high level of internal consistency of the instrument (Table 2). These results confirm that the questionnaire is reliable and valid for measuring students' perceptions of the aspects under study.

Table 2. Reliability statistics.

Domains	Cronbach's Alpha	N of Items
Cognitive	.931	7
Skill	.920	9
Affective	.949	9
General	.972	25

IV. DATA ANALYSIS

1. QUANTITATIVE DATA ANALYSIS

The descriptive statistics analysis presented in Table 3 shows that the average cognitive domain score was 4.09 (SD = 0.77), indicating a high level of mastery of key concepts among the participants. The average affective domain score was also high and was 4.07 (SD = 0.73). At the same time, the average skill domain score was 3.85 (SD = 0.69), which corresponds to the average level. These data demonstrate that the participants perceive and understand information better, but their practical skills are at a lower level. Below, we will consider the research results for each of the domains in more detail.

Table 3. Descriptive statistics of mean scores for cognitive, skill and affective domains

Average of domains	N	Mean	Std. Deviation	Rating
Cognitive_Avg	203	4.0922	.76710	High
Skill_Avg	203	3.8467	.68537	Medium
Affective_Avg	203	4.0744	.72931	High

1.1 Cognitive Domain

The data analysis showed that the average cognitive domain score was 4.09 (SD = 0.91), indicating a high level of understanding of key geopolitical aspects by the participants (Table 4). The highest scores were given to questions related to deepening the understanding of the role of international organizations, such as the UN or NATO, in geopolitics (M = 4.18, SD = 0.89) and to developing an understanding of the importance of a country's geographical location for its political and economic relations (M = 4.17, SD = 0.90). However,

questions related to the analysis of historical examples of geopolitical events and their consequences, as well as to the awareness of the importance of geopolitics for the sustainable development of countries, showed lower results (M = 3.97, SD = 0.92 and M = 3.98, SD = 0.83, respectively). These data indicate a more heterogeneous perception of the theoretical aspects of the topic.

Table 4. Assessment of the level of assimilation of key cognitive components of geopolitics.

Questions	Mean	Std. Deviation	Rating
Develops an understanding of the importance of a country's geographical location for its political and economic relations	4.17	.904	High
Explains the reasons for changing borders and dividing territories	4.11	.908	High
Forms an understanding of global processes such as conflicts, integration and cooperation between countries	4.12	.952	High
Expands knowledge of the impact of natural resources on international relations	4.11	.971	High
Deepens understanding of the role of international organizations such as the UN or NATO in geopolitics	4.18	.891	High
Teaches how to analyze historical examples of geopolitical events and their consequences	3.97	.919	Medium
Develops an awareness of the importance of geopolitics for the sustainable development of countries	3.98	.832	Medium

1.2 Skill Area

The analysis of the data by skill area showed that the mean value varied from M = 3.39 to M = 4.04 (Table 5). The highest mean value was noted for the question "Skills for working in a team on projects on geopolitical topics are developed" (M = 4.04, SD = 0.970), indicating a high level of perception of teamwork skills. The lowest mean value was recorded for the question "Training activities, such as international negotiation simulations, are organized" (M = 3.39, SD = 0.829), indicating the need for further development of practical activities, such as international negotiation simulations.

Standard deviations (SD) ranged from SD = 0.829 to SD = 0.970. The highest level of agreement was observed for the question "Develops skills in analyzing geopolitical maps and diagrams" (SD = 0.829), while the greatest variability was observed for the question "Organizes training activities such as international negotiation simulations" (SD = 0.970). Overall, the data demonstrate a high level of skill perception, with moderate differences between questions.

Table 5. Assessment of the level of mastery of key skills in the field of geopolitics.

Questions	Mean	Std. Deviation	Rating
Develops skills in analyzing geopolitical maps and diagrams	3.98	.829	High
Teaches how to effectively work with various sources of information to analyze international relations	3.98	.901	High
Encourages participation in discussions and debates on topics related to geopolitics	3.63	.938	Medium
Provides opportunities to complete practical tasks to analyze the impact of geopolitics on the economic development of countries	3.84	.855	Medium
Organizes training activities, such as simulating international negotiations	3.39	.970	Low
Develops skills in predicting changes in the geopolitical space	3.87	.831	Medium
Analyzes risks associated with international security	3.88	.842	Medium
Improves skills in critically assessing geopolitical information	4.02	.864	High
Develops skills in working in a team on projects on geopolitical topics	4.04	.861	High

1.3 Affective Domain

The average score for the affective domain was 4.07 (SD = 0.86) (Table 6). Participants demonstrated a high level of perception of key aspects related to geopolitics, especially in questions concerning the formation of interest in studying modern geopolitical events (M = 4.20, SD = 0.88) and understanding the importance of international cooperation (M = 4.19, SD = 0.83). High results were also observed in the area of educating responsibility for maintaining peace and stability (M = 4.12, SD = 0.82). However, educating environmental responsibility in the context of geopolitical challenges received lower scores (M = 3.94, SD = 0.90), indicating the need to strengthen work in this area. The greatest variability in responses was recorded for the question related to strengthening the sense of patriotism through awareness of the country's role in global geopolitics (SD = 0.96), which may indicate differences in the perception of this aspect among the participants.

Table 6. Assessment of the level of formation of affective components in the study of geopolitics.

Questions	Mean	Std. Deviation	Rating
Respect for the sovereignty and culture of other countries is formed	4.04	.922	High
Responsibility for maintaining peace and stability is fostered	4.12	.820	High
Respect for international laws and norms is instilled	4.08	.782	High
Interest in studying modern geopolitical events is formed	4.20	.879	High
A sense of patriotism is strengthened through awareness of the country's role in global geopolitics	4.06	.963	High
Tolerance and understanding of cultural diversity are instilled	4.05	.825	High
Environmental responsibility is fostered in the context of geopolitical challenges	3.94	.899	Medium
Support for sustainable development and solutions to global problems is stimulated	3.99	.859	Medium
Understanding of the importance of international cooperation is formed	4.19	.825	High

1.4 Effect of independent variables on cognitive, skill, and affective domains

Table 7 illustrates the differences in the responses of the study participants based on gender, geographic region, and academic achievement level. For example, students from urban schools (M = 4.28, St. Dev = 0.58) demonstrated higher results compared to students from rural schools (M = 3.98, St. Dev = 0.65). Participants with higher academic achievement ("Good" and "Excellent") also showed better average scores compared to participants with lower academic achievement ("Satisfactory" and "Unsatisfactory"). To test the significance of these differences, a three-way analysis of variance (ANOVA) was used, the results of which showed that the factor "Geographical location" has a significant effect on cognitive indicators ($p = 0.044$), and the factor "Academic achievement" has a significant effect on all three areas: cognitive, skill and affective ($p < 0.001$). Gender, as well as the interactions between all independent variables, did not have a statistically significant effect on the results of the participants ($p > 0.05$).

Table 7. Means and standard deviations (st. dev) of participants' responses for different categories of independent variables.

Variable	Categories	N	Mean	St. dev
Gender	Female	122	4.23	0.72
	Male	81	3.88	0.80
Geographic area	City	126	4.28	0.58
	Village/Town	77	3.98	0.65
Academic achievement in geography*	Excellent (85%-100%)	64	4.06	1.02
	Good (65%-84%)	103	4.27	0.55
	Satisfactory (40%-64%)	32	3.70	0.56
	Unsatisfactory (0-39%)	4	3.25	0.77

The results of the multivariate analysis of variance (MANOVA) (Table 8) show that the factor "Academic Performance" has a significant effect on the indicators (Wilks' Lambda = 0.889, F = 2.483, p = 0.009, η^2 = 0.038), which indicates the presence of statistically significant differences depending on the level of academic performance. The factors "Gender" (p = 0.359, η^2 = 0.017) and "Geography" (p = 0.218, η^2 = 0.024) did not demonstrate a significant effect on the indicators. Also, the interactions of factors such as "Gender * Geography" (p = 0.797), "Gender * Academic Performance" (p = 0.754) and "Geography * Academic Performance" (p = 0.284) were not significant. The effect sizes for all factors remain small, indicating that these variables have little influence on the results.

Table 8. Results of multivariate analysis of variance of the influence of factors on the indicators.

Factor	Wilks' Lambda	F	df	Sig.	Partial Eta Squared
Gender	0.983	1.080	3; 186	0.359	0.017
Geography	0.976	1.494	3; 186	0.218	0.024
Achievement	0.889	2.483	9; 452.826	0.009	0.038
Gender * Geography	0.995	0.339	3; 186	0.797	0.005
Gender * Achievement	0.969	0.651	9; 564.000	0.754	0.010
Geography * Achievement	0.944	1.204	9; 554.000	0.284	0.019
Gender * Geography * Achievement	0.964	1.144	6; 370.000	0.335	0.018

The results of this study demonstrate a high level of acquisition of key geopolitical concepts, which confirms the importance of including the topic of "Geopolitics" in the school curricula of Kazakhstan. The average score for the cognitive domain was 4.09, indicating a good level of students' understanding of issues related to international relations and the country's geostrategic position. These results are consistent with the findings of Reuber (2009) [1], who emphasizes the importance of knowledge about geopolitical processes for the formation of students' critical thinking. High scores on questions related to understanding the role of international organizations such as the UN and NATO confirm the findings of Wu (2018) [8] on the importance of studying international structures in school curricula.

In addition, students scored high on questions related to understanding the importance of a country's geographical location for its political and economic relations (M = 4.17, SD = 0.90). This confirms Starr's (2005) findings on the key role of geography in international relations. However, it should be noted that questions related to the analysis of historical examples and their consequences received lower scores (M = 3.97, SD = 0.92). This indicates that students need more practical examples to better assimilate the material.

1.5 Teaching challenges

The low scores in the skill domain (M = 3.85, SD = 0.69) indicate the need to improve the teaching of practical aspects of geopolitics. The lowest scores were obtained for questions related to the organization of learning activities, such as simulating international negotiations (M = 3.39, SD = 0.97). This confirms the findings of Kelly (2019) [5] on the importance of using interactive teaching methods. Similar conclusions are made by Dittmer and Dodds (2008) [10], who note that popularizing geopolitics through practical tasks and discussions can increase students' interest in this topic.

It is especially important to note the need to improve information skills. Questions related to the analysis of geopolitical maps and diagrams, as well as effective work with information sources, received above average scores (M = 3.98, SD = 0.83–0.90), indicating potential for further development. These results are consistent with Adanalı's (2021) [18] findings on the importance of using digital technologies and games to improve geopolitical data analysis skills.

1.6 Differences between regions

The significant effect of geographic region on cognitive performance ($p = 0.044$) highlights the need to take regional characteristics into account when developing school curricula. Students from urban schools showed higher results compared to rural ones ($M = 4.28$ vs. $M = 3.98$). This is consistent with the findings of Benwell et al. (2019) [2014], who point out the importance of adapting educational materials to local conditions. It is also important to note that the differences in skill and affective domains between students from urban and rural schools are not statistically significant ($p > 0.05$). This may indicate similar approaches to teaching geopolitics in different regions, but also points to the need to develop more specialized materials for rural schools, taking into account their specificity and limited resources.

1.7 Recommendations

To improve the effectiveness of teaching the Geopolitics section in the school curriculum, the following measures are proposed:

- Expanding the use of interactive teaching methods, such as simulating international negotiations, analyzing maps, and studying current events.
- Increasing the number of practical tasks aimed at developing skills in predicting geopolitical changes and analyzing risks.
- Developing additional materials for rural schools taking into account their specifics, including multimedia resources and digital games.
- Organizing additional events aimed at increasing interest in geopolitics, including debates, project work, and competitions.
- Strengthening the emphasis on the environmental component of geopolitics in order to develop students' responsibility for sustainable development.

Thus, the results of this study not only confirm the findings of previous authors, but also emphasize the need to improve school geography programs. It is important to strengthen the practical focus of teaching, expand the use of interactive methods, and pay attention to the development of environmental responsibility in students. Such measures can contribute to a more complete formation of geopolitical awareness and the development of critical thinking, which is necessary for the preparation of active citizens who are able to meaningfully perceive and evaluate global processes.

For educators, it is recommended to integrate digital tools such as GIS software, interactive simulations, and online geopolitical mapping platforms to make learning more engaging and relevant. Regular professional development programs should be organized to train teachers in modern pedagogical approaches and the use of technology in teaching geopolitics. For policymakers, it is essential to update national curriculum standards to include current global and regional issues, allocate resources for rural schools to reduce disparities, and encourage collaboration between educational institutions and research centers to continuously improve geopolitics education.

V. CONCLUSION

The conducted study confirmed the importance of school geography programs in developing geopolitical awareness of high school students. High indicators of the cognitive and affective spheres indicate that studying the topic "Geopolitics" contributes to the development of critical thinking, understanding of international processes and awareness of the role of Kazakhstan in the world arena. Students demonstrated a high level of understanding of key geopolitical aspects, such as the role of international organizations, the importance of the country's geographical location for its political and economic relations, and the importance of international cooperation. However, low results in the field of practical skills indicate the need to strengthen the practical focus of training. The inclusion of additional practical tasks, modeling of international negotiations and analysis of current geopolitical events can significantly improve the level of mastery of skills among students. In addition, the use of modern digital technologies and multimedia tools will make the learning process more interactive and engaging, which will ultimately increase interest in the study of geopolitics. To improve the effectiveness of teaching geopolitics in schools in Kazakhstan, it is necessary to further improve educational methods, develop additional teaching materials, strengthen

teacher training and their professional development. Thus, the integration of geopolitical knowledge into school education creates the prerequisites for the formation of active and informed citizens who are able to participate in solving pressing global and local problems. These measures contribute to the development of analytical skills in students, responsibility for sustainable development and understanding of their place in the modern world. Improving educational approaches in this area is important for the formation of a new generation capable of critical thinking, assessing complex geopolitical processes and making informed decisions in an ever-changing global context.

The findings of this study contribute to global debates on education policy and practice by demonstrating how geopolitics education can strengthen students' critical thinking, civic awareness, and understanding of global interdependence. Kazakhstan's experience shows the value of integrating national identity with global perspectives, offering a model for other countries seeking to modernize curricula and prepare students for participation in an interconnected world.

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Author Contributions

All authors made an equal contribution to the development and planning of the study.

Conflicts of Interest

The authors declare no conflicts of interest.

Data Availability Statement

The survey instrument can be found here https://docs.google.com/forms/d/1JmOcl4N8sqvKjgEqjloDo5Wxviw2o1EzpU-EHZJmCeM/edit

If you need the output data, please contact the author naziramyrzaly@gmail.com

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