

# Pedagogical interpretation of individualization and differentiation of geography lessons

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## Abstract

This article examines the theoretical and methodological-practical foundations of the pedagogical interpretation of individualization and differentiation of geography lessons in the context of a modern school. The authors substantiate the relevance of the transition to personality-oriented learning as the leading paradigm of the humanization of education, the center of which is the recognition of the uniqueness of each student. Geography, with its interdisciplinary, visual-spatial, and cultural potential, is one of the most effective subjects for the implementation of differentiated and individualized teaching strategies. Organizational-methodical, psychological-pedagogical, and didactic-technological conditions are presented that facilitate the implementation of approaches focused on the subjectivity of the student. An algorithm for pedagogical interpretation has been developed, including the stages of diagnostics, segmentation, modular lesson design, and reflexive trajectory correction. A set of ten pedagogical rules has also been formulated, which represent a tool for increasing the effectiveness of geography lessons at all levels of education. The findings highlight the importance of a student-centered model of geographical education in developing students' cognitive, research, and civic competencies.

**Keywords:** Differentiation, Educational trajectory, Geography, Individualization of learning, Lesson algorithm, Modular lesson, Pedagogical conditions, Personality-oriented approach, School education, Student subjectivity.

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## 1. Introduction

Modern trends in educational practices are oriented toward a sustainable transition from the traditional teaching system to more flexible forms in which the role of the student is actualized as central. In this sense, geography as a subject has an expanded potential for individualization of learning. In particular, owing to interdisciplinarity, connection to the real picture of the world, and a variety of forms of information presentation (for example, maps, diagrams, charts, case studies, expedition data).

Geography is a special subject that has worldview significance. Geography teaches and develops spatial thinking. Spatial thinking is a necessary attribute of future cultural and tolerant citizens. It can be said that citizenship, interpreted through culture and tolerance, begins with geography lessons. In the modern world of sustainable globalization, autochthonous and mental limitations and isolation always lead to economic, political, and social costs.

Therefore, developing effective and efficient methods of teaching and learning in geography is one of the most pressing challenges of modern education. The formation of a personality-oriented educational environment requires the teacher to create a set of pedagogical conditions that promote differentiation and individualization of learning.

In this context, we can actualize three dominant components in individualized and differentiated learning processing:

- Organizational and methodological conditions,
- Psychological and pedagogical conditions,
- Didactic and technological conditions.

These components are most effectively and efficiently revealed with the parallel support of educational processing through the provision of certain conditions and requirements.

## In particular,

1. Through organizational and methodological conditions

- Flexible organization of educational processing, which allows varying forms, paces and content of studying Geography depending on the level of preparation and interest of students;
- Project and research activities that promote the manifestation of the individual cognitive strategies of students;
- With the creation of variable learning routes, including through the choice of tasks (for example, at basic, advanced or creative levels),
- Cooperation with the external environment (for example, geographical excursions in the surrounding area, work with local history data, study of geographic information systems),
  2. Through psychological conditions:
- A positive emotional climate in the classroom, support for the individuality of each student,
- Diagnostics of learning motives, cognitive interests, level of development and style of thinking;
- Taking into account the age and individual characteristics of students (for example, spatial thinking, analytical or imaginative preferences),

- the development of meta-subject skills, such as the ability to compare, analyze, and draw conclusions on the basis of geographical data;

3. Through didactic and technological conditions:

- Use of digital technologies, including digital maps, interactive simulators, online cases and Google Earth;
- Development of differentiated didactic materials, including multilevel assignments, adapted texts, and optional assignments;
- The use of blended and adaptive learning technologies, in which students access materials in different forms and at different speeds, and formative assessment that allows one to track progress and adjust individual trajectories.

The more conditions and requirements implemented to actualize the three specified components, the higher the efficiency and effectiveness of educational processing. Moreover, the role of the geography teacher as a moderator of the personality-oriented approach to processing is actualized. That is, the teacher should act not only as a translator of geographical knowledge but also as a transmitter of knowledge but also as a facilitator with the organization of the environment where the student herself or herself masters the content, a moderator with the management of educational processing without suppressing the student's initiative and a mentor (scaffolder), helping the student find personal meaning and motivation for studying geography, its principles and concepts.

Thus, the pedagogical conditions for the formation of a personality-oriented and differentiated approach to teaching geography contribute to the creation of an educational environment where each student can realize their cognitive potential, form a stable motivation for learning and understand the role of geography in the modern world. Geography is becoming not just an academic discipline but also a space for personal and cognitive growth. This is especially important in the context of updating the content of education and introducing new generation Kazakhstani educational standards at the national or regional level.

Within the framework of this presentation, in this work, we consider, analyze and interpret some conceptual and methodological aspects of the individualized and differentiated approach to educational processing. We will also offer some practical and methodological tools for updating and increasing the effectiveness and efficiency of educational and training practices in the field of geography.

## 2. Literature review

In the modern system of new educational paradigms, both individualization and differentiation of target learning are dominant factors in the formation of attitudes toward learning [1, 2]. For example, some works discuss the problem of individualization and differentiation of learning in educational institutions in Austria (schools and universities), taking into account migration flows that affect the content of educational transformations and focusing on the importance of the coexistence of representatives of different nationalities within one country [3].

The organization of the personally oriented education of students allows each student to realize their potential and rights to master academic disciplines [4, 5]. Since, in individualized and differentiated instruction, each student is responsible for his or her own learning, self-assessment is an appropriate method of assessing a "student-centered" course [6].

Structurally, individual and differential educational processing consists of a set of efforts to diversify learning and training procedures. It aims to achieve goals in terms of age, competence, and knowledge of heterogeneous people, community goals and the reunification of collective individuals [7]. That is, such personalization of education allows for the simultaneous development of individual characteristics of students and their inclusion in the socialization process.

In this context, the substantive and structural components of the classroom management strategy (subject-spatial, organizational-semantic, and sociopsychological) are analyzed, aimed at the positive transformation of the educational environment for the success of each participant in the educational process [8, 9].

Today, individualization of learning is recognized as an accepted of the creation of a barrier-free educational environment, where each student has the opportunity to access education and development in accordance with their needs and capabilities. One effective strategy for individualizing learning is to create a barrier-free educational environment that meets the needs of all students and promotes their successful learning and development [10].

Differential pedagogy is being actualized as a form of organizing learning that promotes inclusion in personalized pedagogical work, inclusivity and agreement with heterogeneous reality. Part of this theoretical and practical discourse on learning makes essential contributions to thinking about how teachers practice and how students learn in school [11, 12].

A widely supported concept that all students are unique, differentiated instruction applies an approach to teaching and learning that provides students with multiple options for acquiring information, understanding, and interpreting key ideas. Most researchers emphasize that the use of differentiation strategies aims to support students' learning potential and academic progress [13].

In general, the main methodological strategy for preparing future natural science teachers for professional activities on the basis of the differentiation and individualization of education is the division of the educational process into four main areas: content, process, product and environment [14].

For foreign languages as parallel and related content of geography teaching, individualization is a constitutive feature of the foreign language educational process, and differentiation is a condition for the effectiveness of joint educational activities of schoolchildren to master foreign language communication and achieve educational results. The implementation of this goal is interpreted through the use of methods of theoretical analysis, generalization and interpretation of domestic and foreign works. In addition, the practical experience of individualized foreign language teaching in organizing the joint educational activities of students to master foreign language communication should be considered [15].

Current educational programs and practices are coded for the presence or absence of four categories of strategies: teacher-focused, student-focused, student-focused, and student-focused. It is hypothesized that a focus on student-focused social-emotional development makes the greatest contribution to the effectiveness of interventions, particularly social-emotional learning outcomes. Some studies have shown that student academic outcomes have benefited from teacher-focused programs [16]. Additionally, the integration of interactive and traditional methods directly and clearly improves students' academic performance [17].

Thus, the quality of education, of course, depends not only on the individuality and characteristics of the student but also on the individuality of the teacher and educator. This increases the need to increase the requirements for them through the complexity of educational strategies. In particular, the inclusive concept of differentiated learning is interpreted as a comprehensive modification of the educational content, process, product and assessment of the educational process [18, 19]. In some cases, the need to create a personalized office for the training of future geography teachers is considered [20]. This model includes personal means of communication, learning and self-education tools, and the use of digital educational platforms and professional sites. The use of the concept of habitus and Bourdieu's field also demonstrates the benefits of pedagogical work on teachers' repertoires of practice to understand the generative potential of professional development to transform teacher training practices [21].

The results of psychological experiments have shown that students are not equal in terms of intelligence, innate abilities, interests, potential and needs. Every student is not at the same level in this sense [22]. Therefore, as in any academic subject, individual students often face certain difficulties in mastering the material. This is especially true in the conceptual part of geography. The task of the teacher here is to effectively and efficiently help the student master the material. Accordingly, some works have developed practical recommendations in this direction. In particular, a set of educational interventions based on the representational systems of the individual (visual, auditory and kinesthetic) is proposed to overcome students' difficulties in learning geography. Notably, this approach can be useful for those responsible for teaching geography, educational policy makers and researchers in the same field [23].

The role of reflection in the relationship between teachers and students is important here [24]. Such reflective activities help develop students' critical thinking in relation to common sense, increasing their self-esteem [25, 26]. For example, students write a personal reflective journal during a week-long surveying field placement, tracking their own development of Glasgow Graduate Attributes (GGA). This personal reflection allows students to take responsibility for their own learning, which is vital for continuous professional development (CPD) beyond university [27, 28].

These pedagogical practices reveal the essence and foundations of the situational-environmental approach in pedagogy as a new strategy for designing educational systems that develop personalities [29].

### 3. Materials and Methods

The methodological basis of this study is the humanistic paradigm of education. Within its framework, the student is considered an active subject of the educational process, possessing individual needs, motivation, and personal potential.

In accordance with this paradigm, personality-oriented and differentiated approaches are interpreted as interrelated and complementary strategies for constructing the educational process. The methodology is based on a comprehensive analysis of the pedagogical conditions necessary for the implementation of these approaches in the school geography course.

The work is of a qualitative-theoretical nature and is aimed at the following:

- Systematization of pedagogical conditions that ensure the implementation of personality-oriented and differentiated approaches;
- Development of an algorithmic model for the pedagogical interpretation of these approaches;
- Formulation of an applied set of pedagogical rules as a tool for a geography teacher.

The following methods were used during the work:

- Theoretical analysis of the scientific and methodological literature on the problem of individualization and differentiation;
- Content analysis;
- Pedagogical modeling of the algorithm for implementing a personality-oriented geography lesson;
- Structural and logical analysis of the components of the didactic system;
- Comparative-contrastive methods for determining the differences and intersections between levels of educational differentiation (external and internal);

- generalization of advanced pedagogical experience on the basis of the analysis of publications reflecting the modern practice of school geographical education.

The research methodology is based on scientific research interpreted in the bibliography.

The method is implemented in several successive stages:

- Conceptualization of the concepts of "individualization" and "differentiation" in relation to geography lessons,
- Identification and systematization of pedagogical conditions necessary for the implementation of these approaches (organizational and methodological, psychological and pedagogical, didactic and technological),
- Construction of an algorithmic model of a student-oriented differentiated geography lesson,
- Formulation of a set of pedagogical rules that serve as a generalized toolkit for the teacher,
- Assessment of the potential of the subject "geography" as an environment for the implementation of individual educational trajectories.

In general, the research is implemented in the logic of pedagogical interpretation, which involves not only the analysis of the phenomenon as a theoretical category but also its operationalization in the real educational process. This allows for the transformation of concepts into tools for planning, implementing, and evaluating geography lessons with an orientation toward the individual development trajectories of students.

#### 4. Results

#### 4.1. Some Concepts and Ideologies of Personality-Oriented and Differentiated Educational Processing

Therefore, personally oriented learning is actualized as a symbolic and dominant pedagogical paradigm. At the center is the recognition of the value of the student's personality and respect for his individuality. This approach is reflected through the recognized fairness and authenticity of the statement about the actual uniqueness of each child. Through a clear awareness and understanding of the real fact that the development of a student occurs effectively not through "collective subjectivity" but through a basic attitude toward the uniqueness of the student's personality with his own subjective experience, worldview, and mentality.

Therefore, the general task of the teacher should be to correctly organize such a rational educational process in which the role of the student is central, where the student feels comfortable, where he is involved in processing and where he is motivated to acquire geographical knowledge. This is the interpretation of the humanistic idea of psychologists and teachers that the student is an active subject of educational processing. A subject who strives for self-development, self-realization and self-actualization. striving for self-development and self-realization [30].

This is a reflection of a simple paradigm: previously, the role of the student was passive; today, the role of the student is active. If previously the teacher only influenced the student, trying to "instill" a certain amount of knowledge in him, today, the teacher actualizes the role of the student himself so that he can "instill" knowledge in himself.

Thus, we state that previously, the interaction between teacher and student was resistant in nature on the part of the student-recipient of knowledge. This includes, on the basis of his own teaching experience. However, today, in the modern

education system, this interaction should be proactive on the part of the student, no longer as a mechanical recipient but as an active actor in educational processing. Our new practices and approaches are as follows.

Here, we, teachers and lecturers, are faced with an urgent task to help reveal this individual potential, ensuring the implementation of the necessary conditions and support from the teacher. For this reason, in the personality-oriented methodology, the teacher should not act as a transmitter of knowledge but rather as an organizer and assistant in the educational and cognitive activities of students in general and an individual student in particular. The teacher should not dictate and declare ready-made truths; instead, they should encourage the student to independently search, taking into account their interests, inclinations, and pace of educational processing.

#### 4.2. Differentiated and Individualized Educational Processing

It is obvious that differentiated learning is closely connected with the personality-oriented approach and is a practical tool for its implementation. Differentiation implies a purposeful variety of methods, tasks and forms of work in accordance with the individual characteristics of students. Therefore, in the pedagogical literature, it is emphasized that a differentiated approach means attention to each student and his creative individuality. The teacher must provide conditions under which the maximum realization of the actual and potential capabilities of each child in the class is possible.

This is the essence and principle of differentiation. This is interpreted through the adaptation of the content and methods of teaching to different psychotypes of students. For example, by level of training, rate of assimilation, cognitive interests, learning styles, and other parameters. For instance, introversion, extroversion, and ambiversion. Thus, in educational practice, external differentiation (separation of students by streams, profiles, and levels of training) and internal differentiation within one class are distinguished.

It is obvious that the dominant feature of universality and mass character is internal (intraclass) differentiation, which is based on the personality-oriented nature of education. It is interpreted through the variation of the complexity of tasks, the pace of delivery of material, the degree of independence in completing work, etc., at different stages of the lesson.

In this sense, the differentiated approach should be considered a dominant and authentic way of individualizing learning, allowing each student to achieve success in learning processing. That is, by achieving feasible success for everyone, the teacher thereby awakens students' interest in the subject and the desire to gain new knowledge and develop their abilities.

In the context of the methodology, both approaches, personality-oriented and differentiated, are based on the general principles of the humanization of education and developmental learning and consider age and individual characteristics.

As the leading condition for effectiveness and efficiency, we focus on the unique experience of the student and the flexibility of pedagogical activity. The student is most often distinguished by internal motivation and strives to reveal his natural potential. Accordingly, the task of the teacher is to provide the appropriate and optimal conditions for their actualization.

Differentiated learning is often referred to as a direct expression of a personality-oriented strategy. This differentiation allows the educational process to be coordinated with the individual development trajectories of adolescents. Thus, the theoretical and methodological foundations of personality-oriented and differentiated learning complement each other. The theory defines value guidelines (for example, the recognition of the intrinsic value of the student's personality). The methodology records the technical and technological tools for implementing these guidelines in practice under real learning conditions.

# 4.3. Some Features of the Implementation of Personality-Oriented and Differentiated Approaches in the School Geography Course

Teaching geography at school actualizes expanded opportunities for the implementation of personality-oriented and differentiated approaches. Geography, as a subject that integrates knowledge about nature, culture, society, and economics, is directly and clearly connected with the life experiences of students and the world and ecosystem around them. The uniqueness of the school geography course is that it is the only subject that integrates the natural sciences and socioeconomic aspects of a person's everyday environment. Therefore, geography has rich potential for establishing personal meaning in learning. For example, students easily relate geographical phenomena to their experiences (e.g., weather, the landscape of their native land, travel, and cultural traditions). The implementation of the ideas of personality-oriented learning in geography in practice means that each student builds, as we have already mentioned, their own personally significant image of the world based on their own experience.

In this respect, the acquisition of geographical knowledge ceases to be merely average "for everyone." It clearly acquires an individual coloring, reflecting the interests, values, and observations of the student himself.

In geography lessons, the personality-oriented approach is manifested in the change in the role of the teacher and the organization of educational activities. The geography teacher must be, first, a creative and imaginative organizer. Those who are able to flexibly respond to the cognitive needs of the class and individual students. The content of the lessons must include tasks that evoke an emotional response and personal attitude of students toward the material. For example, when studying topics related to the interaction of nature and society, it is optimal to discuss issues affecting the lives of students. For example, how do natural conditions affect their own life, health, and interests? Creating a situation of success for each student in the lesson is one of the key conditions of the personality-oriented approach. A situational and nonstandard approach clearly contributes to the development of student motivation.

In geography, a situational approach can be achieved through differentiated tasks. For example, someone will successfully complete a basic exercise (show a specific object on a map). Another student will successfully complete a

creative task (prepare a short report on the sights of their region). A third approach will successfully solve a complex research task. Here, each student has an individual opportunity to demonstrate their strengths, which maintains a sense of confidence and motivation for learning processing.

Therefore, let us summarize and update some of our provisions.

The differentiated approach in geography lessons has its own specifics, which are determined by the content of the subject. Geography studies a wide range of topics, from physical processes to economic and cultural phenomena. This diversity allows for varying the forms of students' activities, localizing certain features. In general, geography teachers often divide assignments by difficulty level or type of cognitive activity.

When working with cartographic material, it is possible to differentiate tasks. Some students perform basic map reading exercises. The others receive more complex tasks. For example, analyzing cartograms or independently compiling a thematic map.

Project activities are organized in a similar manner. The class can be divided into groups, each of which explores different aspects of the topic (the natural potential of the region, demographic features, environmental problems, etc.) in accordance with the interests and abilities of the participants. Note that a differentiated approach should be observed in each lesson and at all its stages, from setting goals to knowledge control.

For example, when explaining new geographic content, the teacher varies the depth and detail of the information. Strong students are offered additional facts or examples, whereas others are given a more structured presentation. When reinforcing, exercises of varying complexity are given. When checking and monitoring knowledge, differentiated questions are formed.

Thus, each student is permanently activated in an activity within his capabilities, but at the same time, he is stimulated to advance to a higher level. As a result, a developing educational environment is created, where both the need to support lagging students and the conditions for the development of motivated and capable students are taken into account.

#### 4.4. Reflection as a Dominant Component of Educational Processing

Notably, personality-oriented teaching in geography is not limited to simplifying or complicating tasks. The general psychological atmosphere in the lesson is important here, particularly trust, respect, and dialogue. The student must constantly feel that his opinion is valuable and that his questions, opinions, and ideas are welcomed. In this sense, geography directly and clearly encourages discussions and the exchange of opinions. For example, a discussion of global problems or regional characteristics is needed. In this discussion, each student has the opportunity to express his position or opinion. The teacher must direct this activity and correct and supplement the students' statements, creating conditions for their subject position in learning. As we see, personality-oriented technologies are effective and rational here. These include reflection lessons, game and simulation exercises, and research mini-projects.

Reflective lessons (e.g., summing up, self-assessment of achieved results, discussion of feelings and impressions from the studied and assimilated content) can be devoted, for example, to the topic "What does the geography of my city or region mean to me personally?"

In such lessons, schoolchildren reflect on their experience and learn to relate the knowledge they have gained to their values and interests. This practice meets the main goal of personality-oriented education, which is interpreted through the development of internal motivation and awareness of educational processing.

#### 4.5. Dominant Conditions for the Implementation of Approaches at Different Levels of Educational Processing

The effectiveness of personality-oriented and differentiated learning is largely determined by compliance with certain pedagogical conditions. In particular, they are organizational-didactic, psychological and methodological. These conditions may differ somewhat depending on the level of education (primary, basic, or secondary), but they also have common features.

Although geography is not a separate subject in primary school, elements of geographical knowledge are present in the course of the world around us and in natural history. Here, the emphasis should be on awakening children's interest in the world around them and forming initial ideas about space. The pedagogical conditions at this stage include reliance on visual aids and children's practical experience. Lessons are structured via observations of nature, excursions around the school's environment, and work with basic maps, which allows each student to directly experience and feel what is being studied.

It is also necessary to consider the psychophysiological characteristics of primary school students. For example, it is essential to practice the prevalence of the game form, frequent changes in activities, and positive reinforcing feedback. Here, the personality-oriented approach is manifested through the creation of a friendly atmosphere or "comfort zone," where the efforts of each child are valued. Differentiation in primary school is mainly supportive in nature. Weaker students are given additional explanations and individual assistance. More advanced students receive creative or research tasks (for example, collecting interesting facts about the nature of their city or region). Accustoming children to cooperation is especially important. Such tasks in pairs and groups allow the combination of different levels of support. At the same time, strong students often help weak students, which, in fact, is beneficial to everyone. The pedagogical conditions of the primary stage also include close ties with parents. Involving the family in discussing "home projects" (for example, jointly drawing up a route map from home to school) provides a personal meaning for the child. This is a strong source of motivation for the student.

At the middle level, the systematic study of geography as a subject begins, which expands the possibilities for differentiation and individualization. The pedagogical conditions for the successful implementation of approaches in

grades 5–9 include the variability of didactic material and forms of work. In addition, tools for monitoring and feedback have been developed. Here, the geography teacher needs a sufficient bank of didactic content of varying complexity. For example, maps, atlases, problem books, electronic resources and a package of tasks by level

This allows students to choose tasks in each lesson in accordance with their level of preparation. Moreover, it is important to provide an assessment system that stimulates the progress of each student. Regular monitoring of knowledge acquisition should be combined with stimulating support and not be purely punitive in nature.

For example, after completing differentiated tasks, it is advisable to conduct reflection. That is, what worked out, what was difficult, how the result can be improved.

In general, in basic school, it is necessary to emphasize the need to teach students the methods of educational activity. One of these conditions is the development of learning skills. For example, the ability to work with a map, statistical data, and texts. The different skill levels of students should be considered. The teacher must purposefully teach all the children effective strategies. For example, the skills of reading maps, analyzing tables, making notes, and so on. However, those who experience difficulties are given more attention through additional consultations, reminders, and algorithms. In addition, successful students, accordingly, need to be assigned the role of assistants or offered more independent tasks. A combination of different forms of organizing classes is another condition at this level, namely, the optimal alternation of frontal, group, and individual work.

This approach allows for different learning styles. Some children learn better by working independently at their own pace, whereas others learn in a group discussion. Flexible lesson organization provides everyone with a favorable learning mode. For example, when studying a new topic, the teacher can start with a short general explanation (frontal). Then, groups of students are assigned different tasks (by difficulty level). A presentation of the results and a general discussion are then presented. During this work, some groups can receive direct support from the teacher. While others can work autonomously. This approach constitutes a differentiation of the approach taken during the lesson.

Finally, we note an important pedagogical condition motivational support for middle school students. At this age, interest in the subject is preserved if the training is based on living, practice-oriented material. The teacher should connect geographic topics with the real lives of teenagers and current events (for example, discussing weather anomalies, environmental campaigns, and events in the world). A student-oriented approach requires showing each student the importance of geography for him or her personally as a science that helps to understand the world and his or her place in it. A differentiated approach ensures that this understanding is achieved at the optimal level for the student. Some people will master basic concepts, while others will engage in an in-depth study of individual issues. However, everyone will ultimately advance within their capabilities.

Senior classes are characterized by profile differentiation and focus on preparation for further education and professional activity. The pedagogical conditions at this stage are associated with the creation of individual educational trajectories and deepening of the content of training for motivated students. In the conditions of profile training of geography (if the student has chosen a geographic profile or an elective course), it is necessary to have specially developed programs and teaching materials corresponding to the advanced level. Students are given more independence in learning. Here, it is necessary to widely use research projects, educational and research activities and practical field work. The task of the teacher is to act as a mentor (a scaffolder or tutor), helping each senior student define and implement his individual educational project. For example, one student can research the demographic situation of his area. Another can develop a tourist route. Third, the ecological state of a local river can be studied via GIS [31]. Accordingly, the school must provide the necessary conditions for such work. In particular, access to information (libraries, internet resources), communication with external organizations (museums, universities, and environmental institutions), if necessary, and, most importantly, time in the curriculum for project activities.

Even if a student in high school does not delve into geography but studies it at a basic level, a student-oriented approach remains relevant. The pedagogical condition in this case is to consider the professional and educational interests of students. Thus, for those who plan to connect their careers with economics, the emphasis can be on socioeconomic geography. Future biologists should consider natural and ecological aspects. In high school, it is advisable to use modular training when students choose to study individual thematic modules based on their interests. A differentiated approach is also manifested through preparation for different forms of final certification. Some are focused on the basic level of the UNT (Unified National Testing), while others are focused on Olympiads or admission to geographic specialties. Accordingly, teaching should be accompanied by different levels of requirements and support.

The general pedagogical conditions for all levels of the school when implementing the approaches under consideration are as follows:

- High professionalism and methodological training of the teacher (knowledge of modern technologies of personality-oriented teaching, mastery of differentiation methods),
- Ensuring a comfortable and safe atmosphere in the classroom, the availability of sufficient educational and material resources (visual aids, technical means, various sources of information),
  - as well as support from the administration and regulatory documents.

The latter means that curricula and programs must be flexible enough for the teacher to be able to adapt them to the needs of his or her class. In addition, systematicity is an important condition:

- Personality-oriented and differentiated approaches require constant, rather than occasional, application.
  - Only with regular implementation of these principles in practice (in each lesson, when planning each topic) do they produce a sustainable positive effect. Otherwise, one-off attempts to differentiate tasks or consider the interests of students may be perceived as unusual and may not be integrated into the overall educational process.

## 5. Discussion

The school geography course has significant potential for implementing an individual approach to students. First, geography is a subject that directly addresses a student's surrounding world and life experiences. Already at the beginning of their studies, children become familiar with spatial concepts through their own observations (orientation on the ground, the weather outside, their hometown on a map). This creates a natural basis for the emergence of personal interest: knowledge acquires practical significance and is connected with real situations. Since geography is a universal school subject, it opens up great opportunities for the student to develop his or her personality.

In the process of studying geography, a teacher can help a student develop a number of important qualities and competencies that go beyond the subject content. For example, by learning to work with a map, schoolchildren develop spatial thinking. By studying different countries and cultures, they form their tolerance and global thinking. By analyzing environmental problems, they cultivate responsibility for the environment. Thus, geography directly contributes to the formation of key competencies and value orientations of an individual and a citizen.

One of the significant advantages of geography is its interdisciplinary nature. This allows for individualized learning based on the strengths of a particular student. For example, a student with an aptitude for mathematics and analysis may excel in studying sections of geography that require working with data (statistics, demography, economics), whereas a student with a humanities bent may excel in studying regional studies and cultural and historical aspects.

By differentiating assignments, the teacher takes these inclinations into account: the former may be asked to complete calculation tasks (build a climate diagram, analyze graphs), whereas the latter may be asked to complete creative tasks (write an essay about a country, prepare a presentation on the cultural Turkic heritage of a region). Everyone has the opportunity to study with interest, using material that is close to them, which increases the effectiveness of learning.

At the same time, it is important to stimulate the development of versatility: a humanities student would do well to acquire skills in working with numbers, and a techie would do well to improve his or her ability to express thoughts and evaluate social factors. Geography provides a safe testing ground for this purpose. Owing to the diversity of content, students try their hand at different types of activities, gradually expanding the boundaries of their capabilities with the support of the teacher.

The local component of geography, regional studies, is especially valuable for student-centered learning. Studying a hometown or region, local nature, and economy evokes a direct response in students, pride in their small homeland, and emotional involvement. The teacher can use this by assigning students individual research related to their locality. For example, collecting information about natural monuments, conducting a survey of residents about some environmental problems, creating a tourist guide to their hometown, etc. Such projects allow each student to feel like a researcher, a significant participant in the knowledge of their locality. The geographical diversity of Kazakhstan actualizes such opportunities from a perspective. The regional studies approach not only enhances motivation but also serves as a means of differentiation. Tasks can be given different levels of independence and complexity (from a simple message to full-fledged research). As a result, each student makes a contribution and receives recognition in accordance with their efforts.

Technological progress and the emergence of new sources of geographic information also expand the possibilities for individualization of learning. Modern students have access to electronic maps, geographic information services, satellite images, and interactive educational programs. A teacher can direct students' interest in technology in a constructive direction. For example, they suggest that students independently search for and analyze data on a particular topic, working at a comfortable pace. One student might create a digital map of their area with important objects marked, while another prepares an analytical report on the country's economic potential based on internet sources. Still others may take an online course or quiz on geography. Individual selection of tools and resources allows students to learn how to learn, developing self-education skills, which are important in the modern world. Geography, as a subject, is well suited for such independent development because of the clarity and applied nature of the information.

In general, the potential of geography for the implementation of personality-oriented and differentiated learning is manifested in the following:

- In connection with the life and experience of students (increases the personal significance of knowledge),
- Diversity of content (allows us to consider the interests and abilities of different profiles),
- To the regional studies component (gives everyone the opportunity to express themselves in studying their hometown, region, village or aul),
- And integration of technologies (individual pace and learning path through electronic resources),
- In educational potential (geography forms values and competencies that are important for the individual through the content of the subject).

This makes geography one of the most fruitful testing grounds for the introduction of modern pedagogical approaches focused on individual students.

Thus, personality-oriented learning and differentiated approaches in geography lessons are not a tribute to pedagogical fashion but an urgent necessity. This is dictated by the tasks of forming modern geographical literacy and competence in students. Geographical literacy today is understood not just as the sum of knowledge about maps or facts about countries but also as the ability to understand complex spatial processes, make informed decisions regarding the environment, and navigate global information. Such results can be achieved only when each student is actively involved in the educational process, studies with interest, and does so to the best of their ability.

The analysis revealed that the creation of pedagogical conditions for personality-oriented and differentiated learning is a determining factor in the success of these approaches. These conditions include both external organizational (supply of materials, program flexibility, support from the administration) and internal, methodological and psychological (professionalism of the teacher, the correct selection of methods and tasks, an atmosphere of cooperation and respect in the classroom) factors. The practical implementation of these conditions allows us to overcome the contradiction between the standardized content of education and the unique educational needs of each student.

The importance of introducing these approaches into the teaching of geography is multifaceted.

First, the quality of knowledge improves: students learn the material better when it is presented, taking into account their level and interests, and gaps are promptly filled through differentiated support.

Second, stable cognitive interests in the subject are formed: geography turns from a dry set of facts into a personally significant area of knowledge for the student. world, which can influence the choice of further educational path.

Third, the most important universal competencies are developed the ability to learn independently, think critically, work with information, and interact in a team. A personality-oriented environment involves responsible, proactive, and tolerant citizens who are able to understand different points of view and cultural characteristics. Geographical education makes a serious contribution to these qualities.

Finally, it is worth noting the influence of the approaches under consideration on the geographic literacy of the younger generation. If the necessary pedagogical conditions are met, geography becomes not just a school subject but also a means of forming a holistic picture of the world in students, developing their environmental awareness and spatial thinking. A modern, geographically literate person is someone who is aware of the interrelations in nature and society, who is able to apply knowledge in practice and make responsible decisions regarding their territory and the planet as a whole. These results can be achieved through personality-oriented and differentiated learning, which makes the student an active subject of education.

Thus, pedagogical conditions that ensure the implementation of personality-oriented and differentiated approaches in geography lessons constitute the cornerstone of the modernization of geographical education. Their observance creates the prerequisites for each student to master geographical literacy at the level necessary for him to live in modern society and, at the same time, to reveal his individual capabilities and interests.

The formation of such an educational environment is the most important task of Kazakhstani teacher-geographers and the Kazakhstani education system as a whole on the path to high-quality and humane education in the 21st century.

## 6. Conclusion

On the basis of the results of this work, we can postulate two methodological and practical schemes recommendations for teachers and lecturers in geography.

The first methodology concerns the development of a practical algorithm for conducting geography lessons in the context of a differentiated approach.

The second methodology refers to the need to follow certain rules when conducting geographic lessons in the same context.

#### 6.1. Algorithm of Pedagogical Interpretation of Individualization and Differentiation of Geography Lessons

We create an algorithmic model of the pedagogical interpretation of individualization and differentiation of geography lessons, which represents a step-by-step, logically structured process of teacher actions aimed at implementing a personality-oriented and differentiated approach.

The purpose of our algorithm is to provide geography teachers with a step-by-step approach for designing and implementing lessons while considering the individual characteristics, levels of learning, motivation, and interests of students.

First, let us set the input parameters of our algorithmic model (Table 1).

Input parameters (Input).				
Parameter	Designation	Description		
Level of training	L	Individual level of knowledge of the student		
Rate of assimilation	Т	Speed of information perception		
Cognitive interests	Ι	The student's subject preferences		
Learning style	S	Visual, auditory, kinesthetic, etc.		
Type of motivation	М	Internal/external		
Objective of the lesson	G	Subject and meta-subject goal		
Lesson Topic	Θ	Specific content		

Table 1.

On the basis of this table, we can interpret the step-by-step structure of the algorithm as follows.

*Step 1. Diagnostics of the input characteristics* Collecting information about L, T, I, S, M and L Tests, observations, surveys, and work analysis are used.

## Step 2. Segmentation of students

Division into groups by difficulty level: A (basic), B (intermediate), C (advanced) Taking into account the types of perception (visual, analytical, etc.)

Step 3. Modular structure of the lesson

The lesson on the topic  $\Theta$  is divided into modules:

- M1 (introductory)
- M2 (mastering something new)
- M3 (fastening)
- M4 (differentiation/individualization)
- M5 (reflection)

*Step 4. Design of variable tasks* Each module has its own variability in complexity and form.

*Step 5. Adaptation of teaching methods* Selection of strategy (lecture, game, case, GIS, project)

*Step 6. Monitoring and feedback* Intermediate diagnostics of assimilation Formative assessment

**Step 7.** Reflection and correction of individual trajectories Personal assessment: "What did I understand?" and "What was difficult?" Considering the result for the next lesson

Therefore, we interpret the practical output of our algorithm through Table 2 in the following form:

Table 2.

Model output (Output).			
Parameter	Description		
Achieving the objective of the lesson	Level of goal achievement		
Individual progress	Changing the level of a student's learning		
Motivational response	Reflecting student interest and engagement		

Visually, our algorithm is interpreted as follows (Figure 1):



#### Figure 1.

Visualization of the algorithmic model

Now, let us formulate the basic principles of our algorithmic model:

- 1. Diagnostic adaptability as continuous calibration for the student,
- 2. Modularity as a flexible lesson structure,
- 3. The personalization of tasks as tasks for abilities,
- 4. Feedback as an element of development,
- 5. The self-determination of a student is a choice and responsibility.

Thus, our algorithm can serve as a guiding principle and model for the algorithmization of geography lessons in Kazakhstani schools and universities.

## 6.2. Rules Of Individualization and Differentiation in Geography Lessons

As the second effective methodological part, we present a table interpreting the rules of individualization and differentiation in geography lessons Table 3.

Table 3.	
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Rules of individualization and differentiation in geographic lessons.

No.	Rule	Criterion	Attribute
1	The Rule of Subjectivity	Each student as an active subject of the educational	The teacher must perceive the student not as an object of learning, but as an individual with unique experiences, motives style of thinking and learning
2	The rule of	Individualization is	It is necessary to regularly identify the level of knowledge
2	diagnostic support	impossible without constant diagnostics	the rate of assimilation, interests and difficulties of students. The basis for this: observation, testing, conversations, analysis of work
3	Multilevel	Each task must have at least	This ensures that all students are involved:
	assignment rule	three difficulty levels.	Level A - Basic knowledge
			Level C - Creative/Exploratory Approach
4	Rule of modularity	The lesson structure should be flexible and include individualized modules.	At any stage (explanation, consolidation, verification, project) differentiated elements must be provided
5	The Rule of Personal Meaning	The educational material must be related to the student's personal experience.	Topics, tasks and examples are selected based on the regional component, cultural context and individual interests.
6	Rule of independent	The presence of a selection	The student should be able to choose:
	choice	element is required	Form of work (individually, in pairs, in a group)
			l ype of task (practical, analytical, creative) Volume or depth of work
7	Rule of active forms	Give priority to active, activity-based methods	Case methods, geo -projects, problem-based learning, working with maps, GIS and digital sources as a basis for student involvement and self-determination.
8	Feedback rule	Control does not punish,	Formative assessment should be regular and constructive:
		but helps	Reflection Self esteem
			Individual recommendations
9	The rule of adaptation	Teaching methods and tools are adapted to the student	For the visual learner, maps and diagrams; for the auditory learner, oral explanations; for the analyst, tables; for the humanities, essays and texts.
10	Integration rule	Geography as a point of intersection of different sciences and interests.	Allow students to express themselves through interdisciplinary connections: economics, ecology, history, culture, ICT.

Our rules are interpreted as follows (Figure 2):



Figure 2.

Visualization of the Rules of Individualization and Differentiation in Geographic Lessons.

In a certain sense, the 10 rules we have postulated can become a formal or informal pedagogical standard for conducting geography lessons in the context of individualization and differentiation.

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