

HOW GEOGRAPHY AND NATURAL SCIENCE SUBJECTS COME INTO CONTACT

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Abstract

Geography is a system of sciences which contains about 900 science branches. Geography links spheres of the natural and social knowledge, assuring our integrated perception of the world. Recently, scientists attached great importance to geographical researches of society, therefore, geography is considered to be a social science in many parts of the world. But geography is a science about surroundings by its nature.

Geography as a school subject differs from geography as a science. Though recently geography as a subject has acquired a social aspect, but nature geography dominates in its program. Intersubject integration with natural sciences as biology, chemistry and physics has a great importance in analysing it. The knowledge of these sciences is necessary in analysing social geography, too.

Good organization of training process has got great influence on successful memorizing of geographical knowledge. For this purpose, there are used different types of geography lessons, class and non class activity models, which were created for the better quality of training process, therefore, they are used to deepen and consolidate knowledge of students' learning.

Key words: training process, social aspect, natural geography, integrated links.

Introduction

Geography is a system of sciences which contains 900 science branches. It creates integrated, total and scientific image of the whole world which is based on spatial relations and their change.

According to R. Baubinas geography has become a real connection between the largest – nature and society – discovery spheres, assuring integrated recognition of our complicated world (Baubinas, 1999).

First of all, geography is a study of territory. Detailed knowledge of own territory features and knowledge of its resources is a matter of national and state prestige. While exploring native territory, revealing regularity of spatial processes it provides basic knowledge for education of society.

Geography in the world and Lithuania

It is obvious that one of the most distinguished tendencies in development of geography is its socialization, an increasing interest in exploration of geographical structure. In many places, all over the world, geography is considered to be a social science. Social geography dominates in the USA, France and Japan. At present in Lithuania the branches of social geography are becoming stronger. One of the strongest branches is political geography. Geographical ecologization is noticeable, too. By its nature, geography is a nucleus of sciences studying surroundings. That's why, it successfully integrates separate branches of ecological studies. At present this integration is spreading very quickly and quality of geographical motives in geography are stronger associated with social territorial processes.

Geography as a science and a school subject

According to Z. Kairaitis there is no doubt that geography as a school subject differs from geography as a science (Kairaitis, 1997). At present two view points, natural science and social, exist. Due to this, integrated syntheses method establishes itself. Modern opinion about recognition of the world and a man allows to consider the role of geography differently. The essential touch of geography with the world is reflective, having natural, cultural and social dimension.

Though recently geography as a subject has acquired new social aspect, nature geography, which analyses nature topics, dominates in its program. For example, in the sixth form surface of the Earth or lithosphere, waters of the Earth (hydrosphere), air (atmosphere), biosphere are discussed. As well, the form and size of the Earth, climate peculiarities and etc. are analysed. In later forms these topics are broadened and discussed while analysing separate regions. While discussing population, its way of living, natural resources or separate topics on economics, we cannot do without natural science disciplines. This is the essence of integration of geography and natural sciences: biology, chemistry and physics. It consolidates students' knowledge and helps easier to apply them practically (Figure 1).

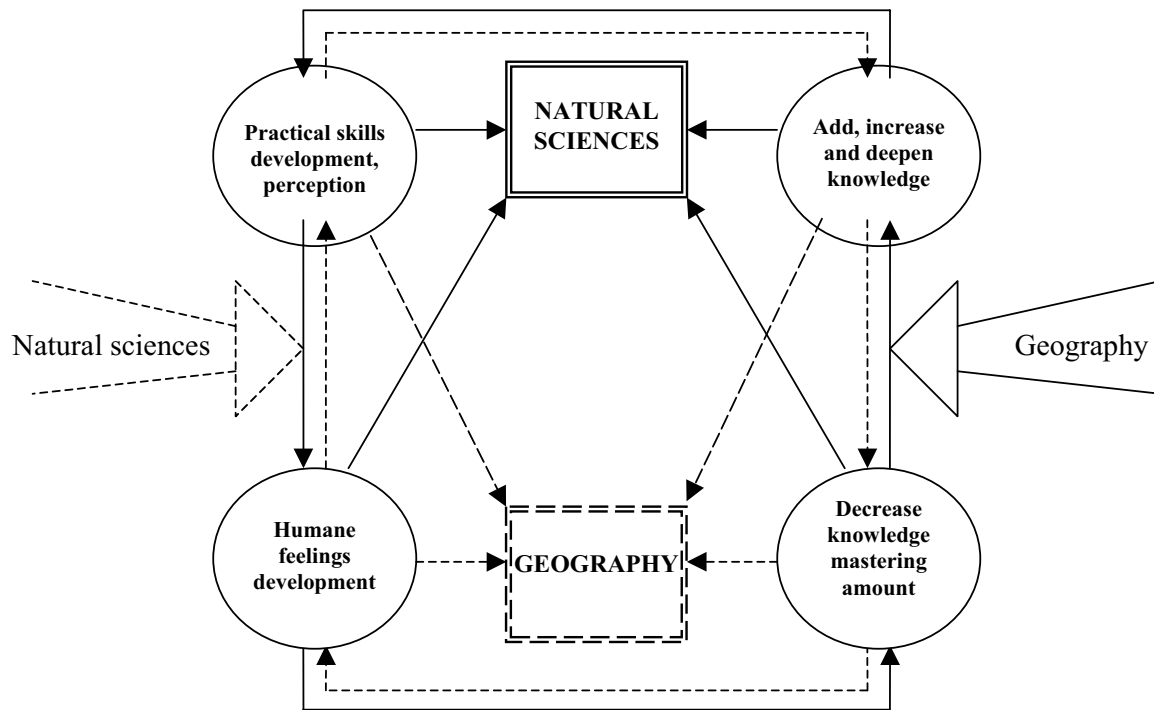


Figure 1. Students training possibilities in teaching geography.

The whole organization of teaching process has got a great influence on acquiring knowledge. For this purpose, trying to achieve better teaching and learning results I have created types of geography lessons which help to organize teaching and learning during lessons.

- *Introductory lesson.* During this lesson a separate subject, its aims and purposes are introduced. Attention is paid to the importance of the subject.
- *New knowledge remembering lesson.* Students acquire new knowledge. Teacher's telling plays an important role. Students are encouraged to act: to express their ideas, discuss and fulfil practical tasks.

- *Programmed knowledge revision lesson.* Programmed tasks are distributed among students and they have to carry them out.
- *Joined lesson.* Knowledge acquired during previous lesson is checked. New information is learned. Knowledge is revised and consolidated, abilities are developed and etc.
- *Knowledge checking and assessing lesson.* Knowledge is checked orally and in written form, using tests and etc.
- *Lesson – discussion.* During this lesson according to students’ knowledge and experience different questions are used to help them to understand, learn and revise the material learned earlier. During this lesson a dialog between a teacher and her students takes place (Figure 2).

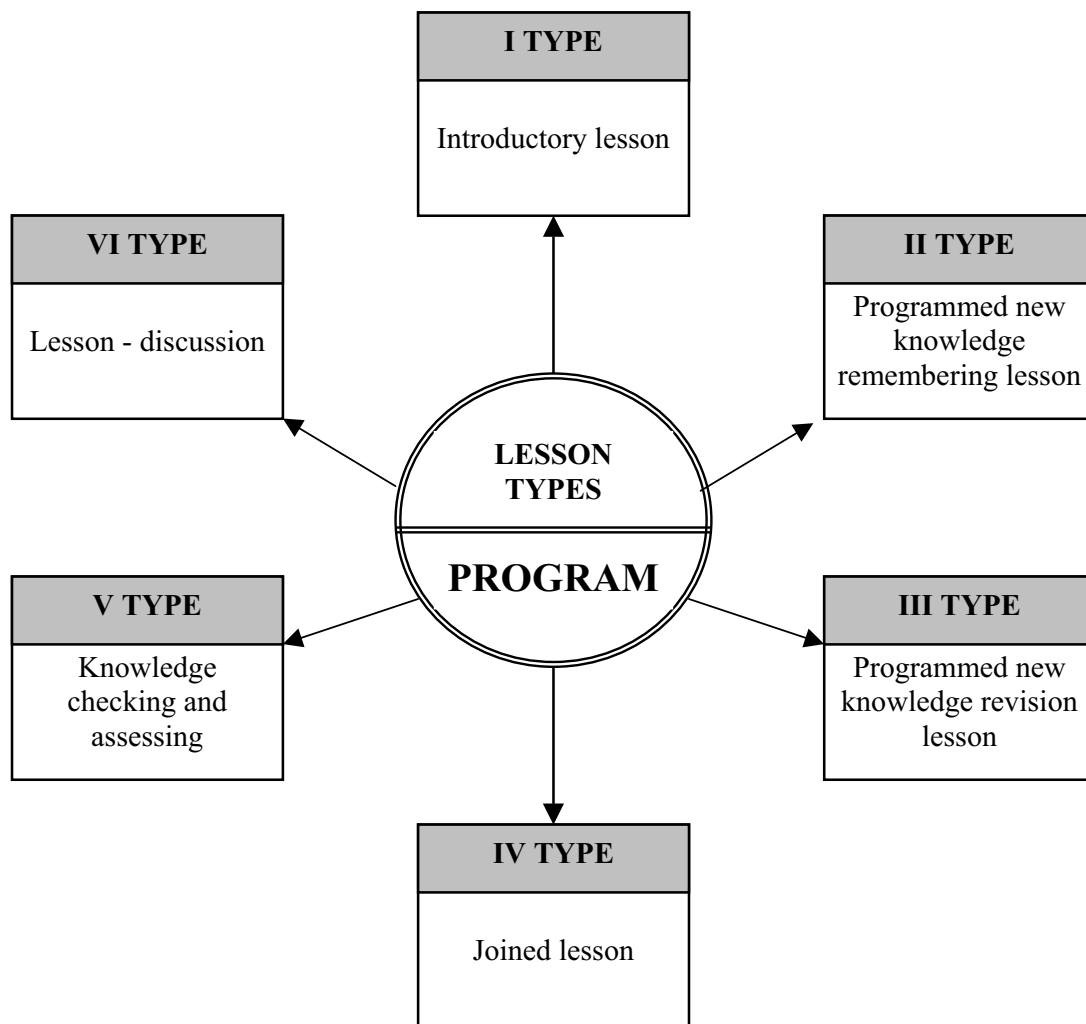


Figure 2. The types of geography lessons.

The next scheme shows the work during the lesson and integrated subjects with natural sciences (Figure 3).

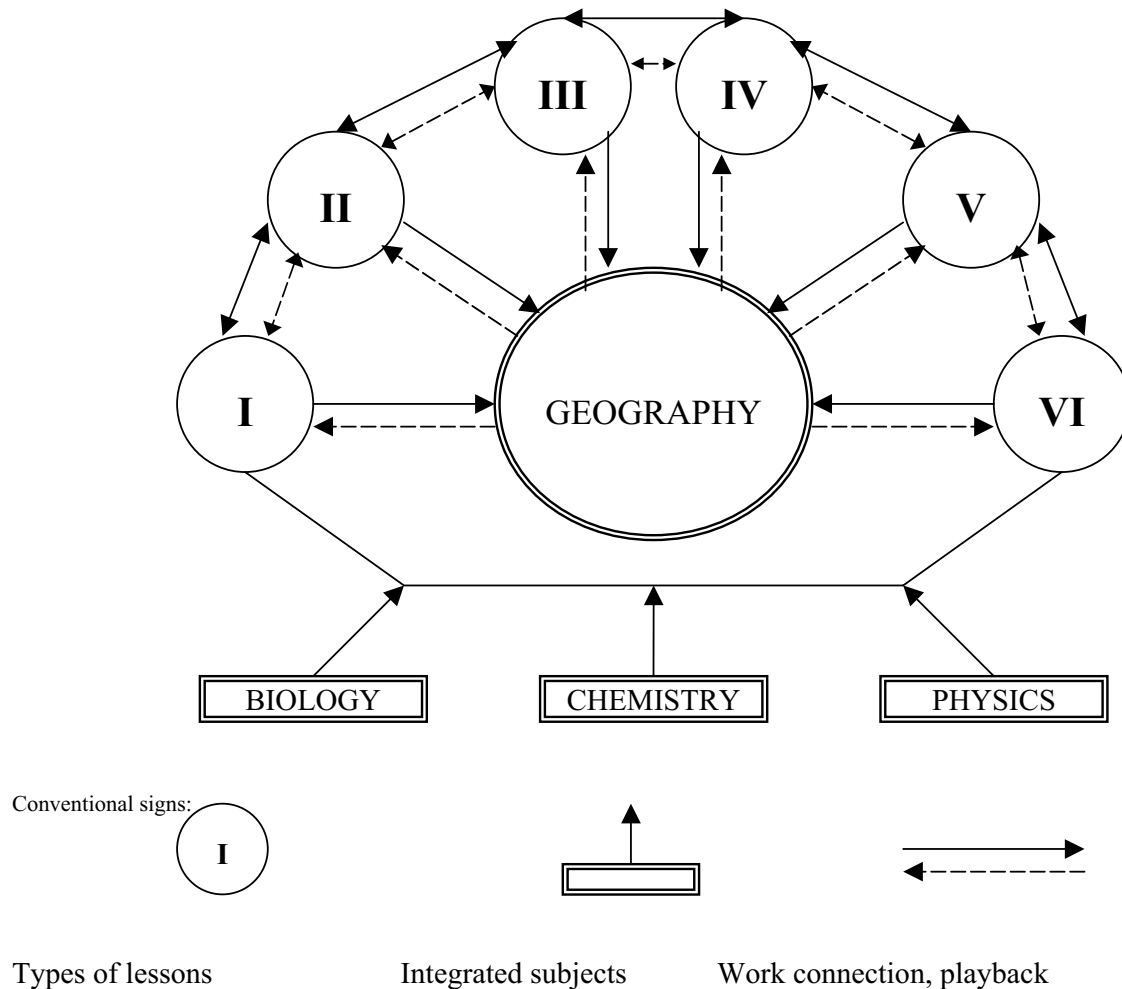


Figure 3. Class activity structure scheme.

Methods of making students more active in geography lesson

One of the most important aims of training is to teach students to learn independently, to develop their knowledge, to stimulate motivation of learning, to make students more active in order to enable them to achieve everything consciously.

These aims were formulated and approved not right away. The initiator of such aims and ideas was Czech pedagogue Jan Amos Komenskyj (1592 – 1670). He put the teaching base, developed students memory, thinking and attitudes. Pedagogue Edmon Demolen (1852 – 1907) sought for strenghtening students' independence, initiative and will. Swiss pedagogue Adolph Terjer (1879 – 1960) said, that students' teaching must be active. Pedagogue Selesten Frene's (1896 – 1966) pedagogical ideal was to develop every student's abilities, which he brings with his birth. John Dewey (1859 – 1952) asserted, that teaching process must be problematic. A lot of famous pedagogues, historians, philosophers made their input in forming pedagogical aims. Thus, Lithuanian and foreign educators were concerned with the training process from ancient times.

Earlier school was considered (looked upon) as a source of information and students were users. Students' activity was passive. The epoch of information has revealed an opportunity of becoming 'suppliers' of information for ourselves.

If we want to educate students successfully we always need new knowledge, skills, imagination and new, stimulating approach. While teaching students, we must give them more rights, raise their critical thinking and self-acting. As students are so different in a class, teacher's flexibility is the essential thing. School seems boring and tiring to the majority of students. That's why it is important to look for methods of learning and teaching which stimulate motivation.

A teacher has to be alert during the whole lesson. It is necessary for the effective teaching. While using students' activating methods, it is very important to create positive relations between a teacher and a student.

The main educational documents emphasize the importance of bringing up such personality, which would be open to the experience, would accept reality and be able to change it in the desired way.

The education of a personality is the problem, which is being under discussion in various pedagogical and psychological works, educational programmes. The concept of creativeness is complex and multimeaningful, consisting of these components: intuition, fantasy, originality, flexibility, new impressions and qualitatively new result.

The importance of active teaching methods in social sciences practice is undeniable. Investigations by different authors show effectiveness of these methods. After all active methods of teaching are closely connected with intensive mental work and learners' psychic and physical changing of the state. Nowadays students have to learn a lot of information. In the process of knowledge intake they face the intensive mental work, which requires tensed attention, active brain process and other psychic functions, followed by clear neuropsychic, emotional tension.

In educational process it is necessary to make interesting lessons, which could help students to perceive teaching material, develop creativity and motivation. These aims are possible to achieve while choosing the right teaching methods, which not only enable to perceive teaching content well, but also to develop students' ability to think critically, to use knowledge both in ordinary and new situations.

In geography lessons, the teacher, using active methods of teaching, must have sufficient theoreticall background, know variety of methods and their purpose. It is important to perceive that while choosing any method of teaching it has to correspond the teacher's working style, students preparation to study actively, subject and lesson aims. Choice of active methods in geography lessons is led by teaching resources or teacher's ability to create them.

Active methods of teaching help geography teachers to achieve aim, make subject content easier for the students to perceive. In this way it is important not only knowledge perception but also usage aspect. Active methods in educational process involve special task choises and activities.

These methods are padagogic tools, which teachers use, trying to help their students to be involved in critical thinking.

We live in the world which is unpredictable and changing very quickly. To survive and prosper we need to teach our students such methods of thinking which would not become old while new specialities and information appear.

Paying attention to optimazation of geography lessons it would be useful to present already used and new active teaching possibilities in the process of education, while teaching geography.

Majority of active methods is possible to use both in classes and non class activity. A wide spectrum of these methods help to vary teaching activity as to avoid monotomy. In this sphere students themselves become active participants and organizers. But it is necessary to pay attention to the sudents' age, their preparation to perceive one or another teaching method (Railienè, 1994a; 1994b). Possible active methods and forms are shown in the following scheme (Figure 4).

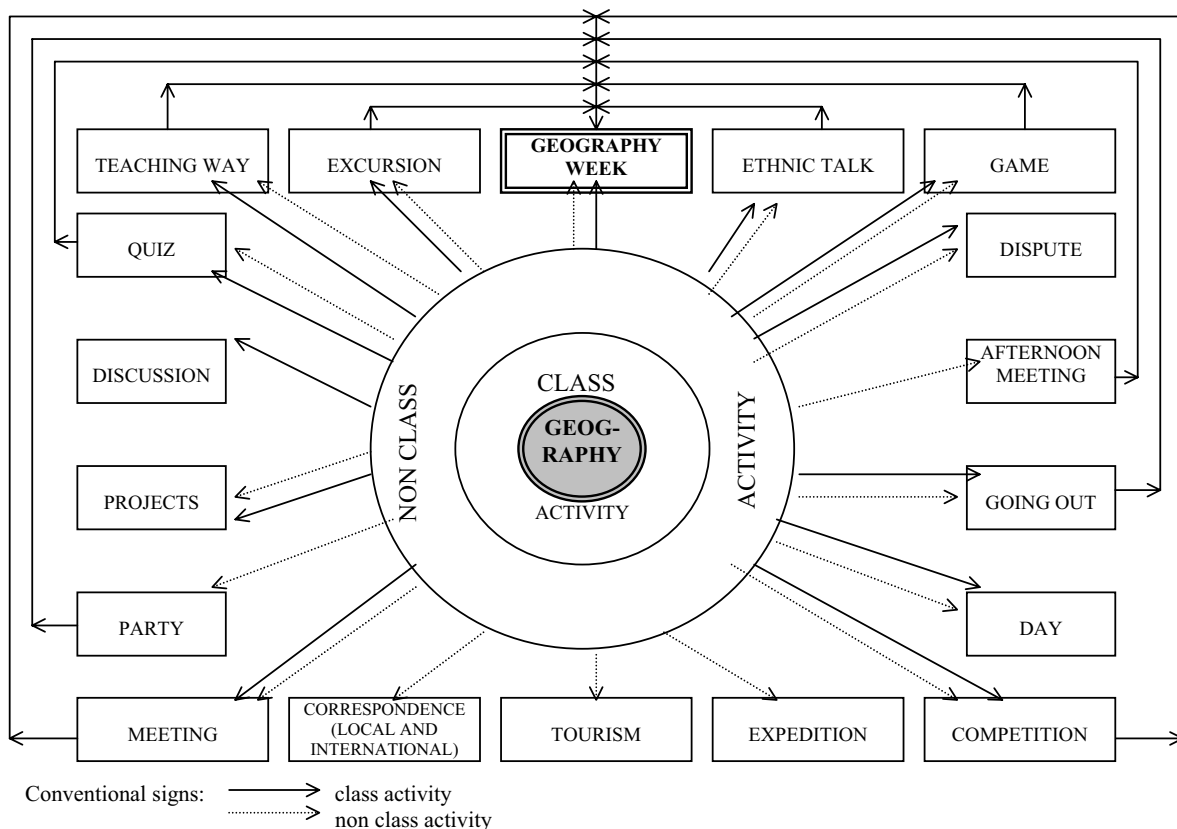


Figure 4. Class and non class activity model.

Conclusions

- Present geography has become a real connection between nature and society recognition spheres, supporting integrated recognition of our complicated world.
- At present sociologisation of geography which pays attention to exploration of society is very distinct.
- Though at present geography at school has acquired a new social direction, nature geography occupies a great part in it.
- While analysing natural geography topics intersubject relations between geography and natural sciences are necessary. This enables students to remember and to apply their knowledge practically better.
- Nowadays educational process it is important to use such teaching methods and forms, which would enable students to perceive knowledge better. Active methods and forms are for this purpose.
- Creation of positive relations between a teacher and a student is of great significance while adopting active methods.
- A teacher, who applies methods of active teaching, is supposed to have enough theoretical knowledge, to know variety of methods and their purpose.
- It is important to teach students such thinking methods which could enable them to work actively in the present society, where new specialities and information appear.

- Common efforts of geography and natural science teachers to make educational process more effective (using active methods), allow to decrease the amount of knowledge, to acquire positive emotions, widen and deepen knowledge in these subjects.

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Резюме

ТОЧКИ СОПРИКОСНОВЕНИЯ ГЕОГРАФИИ И ЕСТЕСТВЕННОНАУЧНЫХ ПРЕДМЕТОВ

Лайма Райлене

Статья посвящена обзору тенденций географии как науки и как дисциплины, преподаваемой в общеобразовательных школах в мире и в Литве.

В настоящее время география приобрела социальное направление, но немалое место в её содержании занимает и анализ природной географии.

Добываясь, чтобы ученики приобрели бы углублённые знания этого предмета, смогли бы выполнить практические задания в окружающей среде, необходимо умело организовать весь учебный процесс обучения.

С этой целью созданы типы уроков географии, использование которых поможет правильно организовать урок,

Изучая природную географию, необходимы интеграционные связи между географией и естественными науками: химией, биологией, физикой. Это позволяет ученикам не только приобрести нужные знания по географии, но и дополнить, углубить уже приобретённые и новые знания.

Ключевые слова: учебный процесс, социальное направление, природная география, интеграционные связи.

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