GEOGRAPHICAL THINKING APPROACH IN GEOGRAPHY EDUCATION

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ABSTRACT: Studies carried out in teaching geography mainly aim at determining the encountered problems. One of the main objectives of geography education is to improve geographical thinking skills. Every work in this field will help students to identify themselves and the entire universe; and use the information in their daily lives. The studies about geography teaching in Turkey mostly focus on topics such as course book, concepts and encountered problems. With the acquisition of geographical thinking skills, students can have the opportunity to think, synthesize, analyze and evaluate geographic information. Location and how it affects relationships with other phenomena are the basis of geographical thinking. This is also possible in other research methods, such as reaching information, explaining, analyzing and thinking on it. The geographic skills required of a geographically informed person consist of five sets of skills adapted from the Guidelines for Geographic Education: Elementary and Secondary Schools, prepared by the Joint Committee on Geographic Education by the Association of American Geographers and the National Council for Geographic Education. This study tries to answer questions such as; "What is geographic thinking approach? What are the main features of the geographical thinking process? How the geographical thinking learning process should be organized in terms of geography education in middle schools?" For this purpose, we developed an implementation of a lesson plan for geographical thinking skills.

Keywords: geography, geographical thinking, thinking

INTRODUCTION

Every environment in which people live is geography and therefore geography is the area of life of a person. The environment in which the person lives is not different from the people, and the two are not independent of each other. In fact, we always live with our geography in our everyday life, because we are a part of the geography. Geography has an effect on every area that we can imagine from what we eat in our lives to what we wear, from talking to clothes, from the exterior to the houses we live in.

Geography (local environment) has a powerful influence on the perception of the natural world by those living in that environment. It is difficult to say when and where the geography, which is as old as human history or, more precisely, and the geographical thought first emerged. Perhaps the first geographer was the first person to climb a river or to pass a stream to see what was on the other side. Maybe that person asked questions that what the geographers still ask: Where is it and what is there? Geography is basically the product of old and irreversible curiosity about "places" other than their own, located in the structure of man himself (Tümertekin & Özgüç, 2002).

Geography is actually our natural environment and the relationship between natural environment and people. While this is the reality of geography, geography cannot be passed on to schools in the process of imprisonment with classes. In addition, they are not only confined to class, but they are trying to overload information and memorize information.

Geography is basically a positive science. However, some research subjects are closer to science and some are closer to social science. Geographers interpret the system of thought that they apply by shaping it with principles. Thus, it aims to solve the social, economic and technical problems of the society. For this reason, geography must have a special place in our education system (Harvey, 1969).

Geography seems to consist of memorizing place names in society. However, knowing place names is only one of the tools of geography (Tümertekin and Özgüç, 2002). Learning only the context, as an end in itself, makes relatively little contribution to thinking geographically (Graves, 1980). The way we develop geographical thinking, which has the applicability to the environment we live in, goes far beyond the practicality of the information taught in everyday life. In this respect, the most important task in the realization of geographical thinking depends on the teachers.

Downs (1994) notes that geography teaching should focus on conceptual, effective learning and psychomotor skills of students. He also asserts that students need to understand the information they are acquainted and that their knowledge should include their ability to use it in different situations. It should also be clarified what kind of learning-teaching process should be organized in order to make geographical subjects more permanent and usable.

In fact, the development of geographical thinking skills in students is one of the main objectives of geography teaching. Therefore, the ability to establish relationships between geographical incidents, to bring students own interpretation into the events by taking advantage of different information and to evaluate them must be required from the students. These skills are also geographical thinking skills. In their research, Gersmehl and Gersmehl (2007) found that students with geographical thinking skills did not have any difficulty in solving any problems they had not encountered before. Geographical thinking provides a unique and powerful way of observing the world and establishing links from the local to the global scale (Jackson, 2006).

A full and healthy geography education enables us to better understand our connection with other people around the world, our relationship with the environment, and skills, knowledge, concepts and foundations that help us understand ourselves. Geography leads us in thinking, critical thinking and problem solving in the decision-making phase (Barth and Demirtas, 1997). Geography must be the center of life in order to have geographical thinking skills and to be able to direct human life (Thomas, 2011). Geographical thinking skills provide students with information processing, reasoning, interrogation and evaluation. All of these lead students to think and develop lifelong learning (Fisher and Binns, 2016). With geographical thinking, students can think about how and why places have changed over time (Newman and O-Neill-Jones, 2016).

Application of Geographical Thinking Skills Approach in Geography Education

One of the main objectives of teaching geography of education system today is to use geographical skills rather than memorizing geographical information. It is therefore possible through an educational environment that establishes the causality relationship between reading and understanding by reading geographical realities, evaluating different aspects of events and improving their own interpretations and views. One of these ways is the use of geographical thinking skills. It is closely related to the students' ability to adapt to life, their environment and their observations and, as far as possible, to learn and use ways to achieve results by establishing cause-effect relationships between events. For this reason, students should acquire the habit of thinking objectively and making correct decisions in case of events and situations by examining their environment with scientific methods in geography lessons. From the above general statement, it is clear that the geography lessons should include selection, investigation, accessing knowledge, choosing among the many knowledge that can be used. In geography lessons, geographical thinking skills come at the forefront of the methods that students can use to transfer their knowledge and skills to daily life and cope with the problems they encounter in everyday life. It is thought that many problems related to teaching this area can be solved by bringing geographical thinking skills that are so important in geography teaching in class environment.

As it can be understood from the above general explanations, geography lessons are at first place in educating individuals who can think, understand and inquire. Geographical thinking skills are take place near the top methods that students can use to cope with the problems they encounter. Geographic skills provide the necessary tools and techniques for us to think geographically. They are central to geography's distinctive approach to understanding physical Earth, human patterns and processes. Geographic skills are used in making decisions important to everyday life. The geographic skills required of a geographically informed person consist of five sets of skills adapted from the Guidelines for Geographic Education: Elementary and Secondary Schools, prepared by the Joint Committee on Geographic Education by the Association of American Geographers and the National Council for Geographic Education. These stages are also known as geographic inquiry (ESRI, 2003). These are;

1. Asking Geographic Questions
2. Acquiring Geographic Information
3. Organizing Geographic Information
4. Analysing Geographic Information
5. Answering Geographic Questions

Steps for Geography Thinking Skills

1. Geographical Thinking Skills Preparation Step:

This step ensures that students have an overall view of the given text. During the preparation phase students are provided with information on the text, maps, charts and pictures of the students and the general structure of the subject. They are asked to write one or two sentences about what the subject of the text is and what information it contains.

2. Geographical Questioning Step:

This step is the step for students to prepare effective geographical questions about the text. For this, they use the words of the question by performing the necessary studies on the paper given first. Later, questions are asked to text, maps, tables and graphics with the help of the teacher. The students are asked to write these prepared questions under the text. Successful geographical surveys involve asking and thinking about geographical facts and causes of events, where and how they have come to fruition. Geographical questions can be such questions; Where is this (geographical phenomenon) located? Why is it there? What is it about? What does it look like? Questions should be in the framework of such as.

1. Where is this place?
2. What does this place look like? What does it look like?
3. Why is this place similar to this?
4. How is this place linked to other places?
5. Does this change location? How?
6. How is it to live in this place?
7. How does this place look or differ from another place?

These questions are important for the development of students' geographical inquiry skills. In addition, geographical and non-geographical questions should be given together so that students are asked to distinguish them from each other, so students are prepared to ask themselves geographical questions by distinguishing geographical from non-geographical questions. At a later stage, students can also propose solutions for problems by identifying geographical problems. For example, in students' lessons, "why does this piece of land, region or country look like this? Why are these mountains here? Why is the shape of these mountains like this? Why do people like them around?

Regarding geographical questions, students should be able to plan and organize a geographical research project, a problem, a research question or hypothesis, and identify the source of information.

1. Prepare geographical questions by examining a map of a region and examining the map. For example, the division of countries, the relationship between the distribution of dwellings and population, topography, and questions about the effectiveness of cities.
2. Prepare geographical questions by working with many charts and write information to answer them.

3. Step of Obtaining Geographical Information:

It directs students to determine ways to obtain information. To do this, students are first asked to identify the sources and sources of information related to each question and write them once. The resources that provide information to the question are determined by discussing each question and firstly students do these operations to their notebooks as to what these resources are. Then, these processes should be printed next to the problem on the board.

Students should be able to read and interpret maps of all kinds. So, using a map, they should be able to generate information for a place that they know nothing about. They should also use quantitative and qualitative methods to compile primary and secondary sources and benefit from them. Students can obtain information through surveys, fieldwork, use of various materials, and library surveys. The skills of obtaining geographical knowledge include; interviewing, systematizing the information, interpreting and reading maps and other graphics, observation and statistics. The primary sources of knowledge, particularly the field work done by students, are very important in terms of geographical research. Fieldwork includes activities such as surveying, taking photos, making observations, interviewing with people and collecting samples. Field work ensures that geographical work becomes more fun and understandable. Fieldwork is a very important activity that allows students to establish relations between physical features and human activities and to establish a connection between the outside world and the part of the school geographical knowledge they live in (Bednarz, 2003).

Secondary sources of information are written documents such as texts, maps, graphics, photographs (satellite photographs, aerial photographs, three-dimensional photographs, professional or amateur photographs), multimedia tools, newspapers, telephone directories and government publications. They bring secondary resources to the scene and a part of the geographical information is obtained from these sources.

Tertiary sources are mostly encyclopedic sources. Encyclopedic information is information that others have benefited from primary and secondary sources. But there is information available here that student cannot reach personally.

4. Step of Arranging Geographical Information:

To be able to analyze and interpret compiled geographical information, it needs to be arranged. Information should be systematized and different types and forms of information should be classified. The information and data obtained from various sources should be organized using graphics, photographs, climate graphics, diagrams, tables, and maps.

It is a step that helps to reorganize the information obtained about the text. For this, students prepare information in the form of tables, graphs and maps or compositions of the information obtained through different sources. These studies can be made by Microsoft Excel program in table formats. The tabulated data is then translated into various graphic formats with the support of the researcher. The information should first be processed on a dumb map.

There are several ways to organize geographical information. Because of maps are the basis of geography, they are first in the arrangement of geographical information. Apart from this, using various types of graphics can make the geographic information regular. Creativity and skill have a very important place in the effective interpretation of geographical information. Creativity and skill are also influential in designing and coloring graphics, and scaling and shaping maps.

5. Analysis of Geographical Information Step:

It is the step that students respond to the questions prepared in the first step by using the information that is handled and organized in various sources. Analyzing the information obtained through various sources and researches involves finding examples and establishing relationships and links. Students analyze and interpret information about meaningful examples. Students should be able to synthesize the information that they have gained via observations. They should add new information by adding information from maps, charts, diagrams, tables and other researches. They should also be able to connect with simple statistics and be able to draw conclusions.

The analysis of geographical information includes researching and relating facts, events and occurrences. Students analyze and comment on events and problems. Students can then synthesize their own observations. By using simple statistics, they can show trends, associations, and frequencies and have information about them. Sometimes it is difficult to separate the activities of organizing and analyzing geographic information from each other. But, it is possible to master knowledge of raw information by analyzing the information. Additionally, students need to carefully examine the maps to understand and compare spatial concepts and relationships (MacBeath 1997).

6. Steps to Answering Geographical Questions:

A successful geographical survey should be based on compiled, organized, and analyzed knowledge and should result in a development of generalization skill. Geographical skills should be used to be able to respond to geographical questions and information should be graphically presented, based on organized information, orally or written. Firstly, interpretations, tables, graphics and maps should be interpreted to separate the necessary and non-essential information for answering. Then, the answers are prepared for the questions in the light of the information.

Geographic generalization can also be done through thinking or deduction. Thinking enhances students' ability to synthesize geographical knowledge, answer questions and enrich the debate. It includes geographic generalization, induction and deduction processes. Students use the induction approach to synthesize geographical knowledge, answer questions and arrive at results. Thinking through deductive reasoning is about identifying questions, evaluating and collecting evidence about the topic, and using them again outside the school world.

A Lesson Plan for Geographical Thinking Skills Approaches in Geography Courses

1. Purpose of Lesson

Provide knowledge about distribution of population

2. What do learners know at the end of the course?

1. Distribution of population
2. Asking geographical questions about the distribution of population
3. Knowing to obtain information about population
4. Organizing geographic information
5. Analyzing the information about the distribution of the population and answer the geographical questions

Preparation / First Step: Students are required to ask geographical questions. For this, students need to

1. Read the text
2. Review the table
3. Review the chart
4. Review the title of the map and determine the theme of the map

Second Step:

The teacher leads the students to ask geographic questions. For this, teacher says, “Now let's try to work together to prepare a geographical question about Population in the World. Firstly, we will write question sentences about "Population in the World". Let's write some sample questions brawly together.” Students use question words and they brawly prepare question. Questions that are agreed upon are written on the board. Students’ questions are expected to be similar to the following:

1. Where are the densely populated areas in the world?
2. What is the population?
3. Where are the sparsely populated areas in the world?
4. What is the relationship between population distribution and climate characteristics?
5. How is the historical development of the world population? Why is population censuses carried out?
6. What could be the negative aspects of living in densely populated areas?

Third step:

The teacher leads the students to determine ways of acquiring geographic information. For this, the teacher says, “We learned how to create geographical questions about a subject and now we will obtain information to answer these questions. We will find out the sources that provide us with information besides books. Where can we get information about a topic? Is there information only in books or else that can we constitute our own information?” And then, teacher says; “Except books, there are also different sources of information. We can find ways to answer questions which we have created.” The teacher asks, "Where can we get information about geography?" With the brainstorm technique, students should be able to share their thoughts on the sources of information. The teacher guides the students to discuss ways of gathering information about a topic. At tte end of the discussion, writing the way of gathering information and grouping them take place. The teacher leads the students to classify information sources as primary and secondary sources. The groupings that made are written on the board.

The teacher explains the primary and secondary sources of information to the students with examples. Students prepare a few interview questions. Then, at the end of the discussion they write the interview questions and group them.

Fourth step:

The teacher helps students to sort questions according to the way they collect information and organize them according to each source of information. For this, the teacher says that “now we will classify the sources of information for the questions we have prepared and let's think about the sources of information with a question and write alongside it.” Firstly, students do this individually in their notebooks. Geographical questions and knowledge sources include the followings;

1. Where are the densely populated areas in the world? (*Map, book, internet*)
2. What is the population? (*Book, internet*)
3. Where are the sparsely populated areas in the world? (*Map, book, internet, table*)

4. What is the relationship between population distribution and climate characteristics? (*Map, book, encyclopaedia*)
5. How is the historical development of the world population? (*Book, internet, encyclopaedia, table*)
6. Why is population censuses carried out? (*Book, internet, graph, table*)
7. What could be the negative aspects of living in densely populated areas? (*Book, internet, encyclopaedia, interview, observation*)

Fifth step:

Providing students with information about geographical questions and ways of obtaining information. The teacher says, "Let's examine the Population Map of World Countries and try to explain the information by looking at the legend. This map gives us some numerical information. The legend on the lower left corner of the map will help you to obtain information from the map. What do these colors mean? What do you say? Let's guess the population of each country now by matching the numbers mentioned with these colors to the countries." And then, students use the map to write the population of countries and comparing the estimates of the countries' population by looking at maps.

Teacher says, "now let's examine World Physical Map, World Rainfall Dispersion Map and World Climate Map. Let's try to relate these three maps; is there a relationship between the distribution of the population, the forms of the earth and the distribution of the rainfall? What do you say about it?" Students direct questions to texts, maps, tables and graphs and write a brief summary of information.

Sixth Step:

The teacher helps organize the information that the students get from different sources. The teacher says the students that "we will organize the information we gathered together the information we have gained in the last few lessons. First, we will learn the ways to show numerical information with tables and graphs." For this, the teacher asks each student to open a Microsoft Excel spreadsheet on the computer. Numerical data is entered in the Excel sheet. It is expected from the students that they should create the table.

The teacher helps students transform the information they have gained from the tables into a column chart. Students summarize the collected information that is obtained from internet, books and other written sources. Students are asked to organize all the information as composition.

Seventh Step:

The teacher leads the students to analyze the geographical information and to answer the geographical questions. For this, the teacher says, "We will now examine the information which we gained from different sources and use that information to develop relationships. Then, we will try to give answers to the questions that we created initially". Students firstly examine the information individually.

The geographical questions which are created in the first step are written on the board. The teacher uses the discussion method and students are provided with the opportunity to find answers to each question.

Eighth Step:

Students should be able to provide the answers for a map and text. The teacher leads the students to check the answers whether it is correct or not. Students map the information that organized by them. There are two ways to do this. By using a paint program on computer or using an empty World Map. The teacher leads the students to analyze the geographical information and to answer the geographical questions.

CONCLUSION

A qualified geography education is only possible if the purposes of the lesson are achieved. In achieving these goals which the skills gained in the school should be linked to their daily lives by the students.

Geographical thinking skills approach can be used to improve academic success in geography courses and to ensure the permanence of the learners. As it can be clearly understood from the nature of geography, in lessons more emphasis should be given on the ways in which students will be able to question and think about events.

This study was developed as a lesson plan which is an example of the application of geographical thinking skills in geography lessons. In this study, it is explained which routes to follow at each step in detail. New plans can be developed at each class level by using this plan. It is important that students at all levels of the geography course be actively involved in learning activities at various levels. By using these activities in geography lessons, geography can be a practical course. Thus, geography classes can get out of from the classroom environment and take the place of real life.

Students can be able to create their own knowledge with the application of the five-step geographical thinking skills. Geographical thinking skills are a versatile approach that can be used in conjunction with other teaching and learning approaches.

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