# FROM GEOGRAPHY TO GEO-SOCIETY THE NEED FOR TRANSACTION IN THE GREEK STATE PUBLIC SYSTEM

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***ABSTRACT***

*This article undertook to describe the transformation of Geography as teaching subject through the years in Greece as well as the need of adaptation emerged from the New Era of digital evolution in everyday life. Geography is an applied science that over the centuries has shown an evolution both in terms of the objects of study and the way of studying the objects it deals with. Technological development has led its study from the statics of the classroom, the map and the globe to the study of the use of digital tools and applications. Societies have now become Geo-Information Societies gaining ground against those with mere knowledge of geography. Citizens are now required to have specific skills and qualifications. Suppose linguistic and mathematical literacy were historically requirements for membership in a community of the past. In that case, digital literacy is generally accepted as the passport to the information society, and "belonging" to a "GISociety" will require a particular set of elements of geospatial literacy.*

***KEYWORDS***

*Geography, Gisociety, Teaching, Digital, Literacy*

## 1. INTRODUCTION

The science of geography is related to the study of the earth and the phenomena that take place on it. It studies man's relationship to the earth, but also the phenomena that occur spontaneously on it. With roots reaching back to Homeric times, the science of geography has acquired timeless value and seems both valuable and necessary, while at the same time delineating the influence that man exerts on the earth and vice versa. This two-way relationship is not limited, but developed over the years either positively or negatively, depending on the intentions and aspirations of the human species, when speaking of the anthropocentric approach.

Geography "as a science investigates the nature, structure, changes that occur in the natural environment as well as the relationships that develop between the Earth system and man. The focus of her interests can only be geographical space, a complex concept, which, depending on the perceptions of geographers, is valued as "biographical identity of a place on earth", "part of the Earth's surface", "field of flow of products, people, of information, ideas, cultures' etc.' (V. Peraki et al., 2002).

The fact that there are no restrictions lends a sense of freedom and detachment to the study of geography. Should the observation of the environment be considered as the first step followed by the study of the phenomena, then the ramifications may be innumerable. It is about observing, recording, studying and organizing a variety of processes which can be analyzed and presented individually or even in relation to previous actions related to physical geography and human geography.

## 1.1. Etymological Approach to the Term "Geography"

"Geography" is a compound word, made up of two compound members originated by the Greek language. It could aptly be said that the first member is a noun - geo (earth) - and gives the word the weight of place, defining and making clearer the limits of action of this particular science. Then, the second compound member of the word is a verb - I write-. The verb, although the word produced through composition is essential as a part of speech, energizes the word. Its roots are found in ancient Greek times with references by Hesiod in the work Theogonia (verses 126-132), where Gaia gives birth by parthenogenesis to Uranus, the Mountains and the Pontus.

## 1.2. Conceptual Approach to the Term "Geography"

Not a few have referred to geography as a science. Others have closely linked it, above all, to the evolution of the spirit (Debesse - Arviset, 1975), because as the spaces and environments change, so does the thinking, the intellect of the people. If the human species did not try to adapt according to whatever modifications were made, then we would very likely not come very close to the characteristics of man, as we know them today based on the evolutionary theory as it was formulated in the 18th century.

The conceptual background of geography is complex. This means that it refers more broadly to many areas, which are essential components of the concept or even branches of it. Observation, recording, understanding of phenomena and situations definitely play a very important role for the construction of the whole concept. It could also be stated that the study of various relationships and interactions, such as development, especially due to urbanization, but also the study of the cultures that make their appearance over the years, frame the concept of geography and place it in various time scales, without anyone being able to pinpoint its origin with certainty.

It is also worth noting that the concepts that structure geography are also of various types. More specifically, there is talk of general geography, physical geography, regional and so on. These types with their own special characteristics introduce the concept of geography into a more complex, extensive and wider sphere of sciences. This, in fact, could well be the reason why, from ancient times, the geographer combined other qualities as well. Therefore, the science of geography itself is subject to a more general spectrum which as a concept allows the use of elements and structures of other scientific fields.

## 1.3. Definitions of the Term "Geography"

In general, it is very difficult to assign a specific definition to the term "geography". This happens because the science of Geography integrates further concepts and sciences into its trunks. It is also the factors that are taken into account and the different approaches on the subject, which classify and differentiate the definitions.

Generally, the role of Geography as a science, as it constantly evolves and does not stand still, transforms the attempts of defining it. It has been tried to define it as a science of description, as a science of study, as a science based on the influence that man exerts on it and vice versa. In any case, it should not be neglected that geography is not simply an enumeration of phenomena and elements. One should consider the natural phenomena that shape the planet in relation to human characteristics that vary over time and are controlled by the human species itself and its pursuits. These include the various actions as well as their changes carried out by the weather such as

fishing, agriculture, animal husbandry, hunting and later dealing with the industry, actions that have a direct impact on the natural environment.

We read on the website of the University of the Aegean in Greece:
*«Geography, a Greek word and at the same time global, is a scientific area that has changed definitions and content in space and time just like its object: the surface of the earth as a natural environment and as a space that supports and "hosts" the human activities and is transformed by them».*

Clearly, there have been other attempts to define the term. One of them holds the view that geography consists of a set of data captured on maps and defines it accordingly. A different definition states that it is the science that involves the study and description of the earth while noting the features and elements that appear in its relief.

It is mentioned on the website of Harokopio University of Athens: "*The science of Geography investigates how the environment is shaped by natural processes but also how man affects it positively or negatively. It also studies how cultures and societies are shaped and influenced by the environment in which they develop. It is a very broad scientific field with points of intersection with many different fields of knowledge, such as geomorphology, climatology, cartography, geographic information science, remote sensing, urban and regional development, demography, politics, economics, social, historical and cultural geography*."

In short, it is not difficult to understand the difficulties that exist in defining the concept. "Geography" as a science is a vast field not only in terms of its theoretical approach, but also in terms of research. Definitions often differ depending on the point of view, the type of Geography, but also the person seeking to define the term.

## 1.4. What is the Purpose of Geography?

For long time geography was detached from the social sciences. Until 1970s any involvement was avoided in the great controversies between ideologies and education. For the geographers "geography was the science of places not of people" and its objects was to describe the earth and the relationship between nature and human ways of living. Geography teaching was including climate, morphology, rivers and mountains, geology and vegetation.

The question of the purpose of geography is raised the recent *years: should it consider the social and psychological realm as well as the morphological and economic domain? Should it inquire into individual as well as collective human behaviour?* Pupils will go into the geographical learning process only if the subject can bring out their potential. It is by stimulating pupils' senses that the introduction will take place. Geography must take account of cognitive psychology thus it explains the spatial learning, first in relation to parents, to their home, district, town, region and country, continent and at the end the world, from the "private bubble" to social space (Bailly, 1995). It must be said that in order for a student to obtain academic literacy aimed at by the school, the ability switching between the practices required by each thematic field or subject, should utilize a repertoire of language practices appropriate to each of them and manage the social meanings and social identities that each highlight (Gabrielidou, Mitsaki, Fliatouras, 2021). Scientific literacy appears in relation to digital literacy in the European Commission's 'Digital Education Action Plan' (European Commission, 2018g), (Siarova, Sternadel and Szőnyi (2019). As Bailly has stated (1995) at the end of the 20$^{th}$ century *"The teaching of geography aims to develop pupils' capacity for observation and reasoning, and to arouse their interest in spatial problems. It must teach them to observe (description), to classify (establish typologies), to create links between phenomena (the global approach) and to provide explanations (in particular*

*through deductive reasoning). In order to do this, they must acquire methods: reading documents and representing geographical phenomena, by means of sketches, diagrams and maps."*

## 2. THE TEACHING OF THE GEOGRAPHY COURSE IN THE MODERN GREEK STATE

In modern Greece, introduction of Geography as a subject was made with the formation of Middle Education - that it refers to Secondary Education - (Antoniou 1987) in 1836. Geography is presented as a single unit for Geosciences in the Timetable Programs, in the 1st and 3rd high school programs of 1977 and 1978, while in the 1st high school Physical Geography is taught. The main goal of education (Government Gazette 576/1977) is: "our education system to become more efficient and to be a key factor for economic and social progress". In this spirit, the purpose of teaching Geography with elements of Geology is to describe and interpret the geological phenomena and for the students to know the sources of wealth of the natural environment.

The Curriculum of the Geology-Geography course of the 1st and 2nd grades of High School in 2023 is defined as follows: A. PHYSIOLOGY OF THE COURSE Geology-Geography in the first four grades of the Primary School is included in the Environmental Studies course. In the 5th and 6th Primary School and in the 1st and 2nd High School it is taught as an independent subject - Geography and Geology-Geography respectively.

Geology - Geography Curriculum includes: Various levels of analysis of concepts and processes, examined from the very familiar, local and regional, to the national, European and global scale. The study space and the phenomena that occur in it, start from the very small spatial scale (personal) and extend to the large and very large spatial scales (national and global). Digital interactive maps including a set of metadata, which show the purpose of using the map, informing users about important information, such as the map projection is used now a days at schools (Intzidou et al, 2021). Specific concerns identified regarding the young people participation in research and collaborative actions using Web 2.0 applications, in the context of geography and environmental education, through sociocultural constructive view of learning. Concerns relating to the way of the young people's interaction using an educational online environment and how it can help to improve their learning process originated a study with the research question if sociocultural constructivist interaction of students in an educational online environment affect their cognitive development and their geography and environmental approach to the research issue. Results indicated that the quality of their interaction was at a satisfactory level with most complete learning exchanges, progressively developing essential skills for an organized and integrated geography and environmental approach, throughout the project (Exarchou E., Klonari A. & Lamprinos N. 2015).

## 3. "GEOMEDIA" – EXTENSIONS AND EXTENSIONS

"Geography has real importance in human decision-making. Geography is a set of basic skills that you need to instill in our youth." As Roger Tomlinson, father of GIS said, undoubtedly the pace of development of situations in today's era is very fast. This can be seen simply by watching how quickly various fields, such as technology, evolve. Technology has made huge leaps of progress, especially in the recent past. Society today is often characterized as an "information society" in an age of pervasive digital technologies. Technology is ubiquitous and everyone is in constant connectivity. Being "always on (line)" was expected to make people less and less dependent on the functional contexts of a location, as this was early discussed in "The Death of Distance" (Economist, 1995; Cairncross, 1997). This has now led to people meeting in a space and time 'metaverse'.

As technology has moved into consumer electronics, it sparked debate with the article “Revenge of Geography” (Economist, 2003). Obviously, the information society has not turned its citizens into location agnostics, but rather led to the opposite, the dominance of "where." Perhaps it was caused by the disconnection of communication from co-presence, giving way to the urgently needed personal digital sphere to balance the effects of telecommunication.

Thus the "spatial shift" in a Geoinformation Society is evident throughout its digital infrastructure, as well as in its daily operation. Very few of a person's tasks, interests, and activities are independent of location. Location is not just a measurable location. Determines what is around him by proximity and distance. Location works very effectively as an all-rounder – database experts would consider location a key enabler of the 'spatial link' function. This spatial integration in "layers" information or areas of interest effectively transform locations into places (Goodchild, 2011)

It is now a fact that the concept of the Geo-Information Society wins over this simple knowledge of geography. The citizen of the present society is required to have specific skills and qualifications. As linguistic and mathematical literacy were historically requirements for membership in a community of the past, digital literacy is generally accepted as the passport to the information society, and "belonging" to a "GISociety" will require a certain set of elements of geospatial literacy.

This can be easily linked to the traditional map reading skills required as a foundation to build spatial orientation and to complete certain spatial tasks such as navigation. From a broader perspective, a person's general spatial awareness is the cornerstone for the development of spatial thinking, which he projects is necessary to support citizens in their participation in modern society. The question arises as to which abilities and skills are required to join the digital age and which will (partially) replace those of traditional map reading and interpretation. However, the goal is considered to be the convergence of education demand and technology supply: new technologies will emerge and offer opportunities, while only those that lead to (perhaps new) demand will be maintained in the long term. Technology is of course not an end in itself, but it has changed societies in the past, and will obviously do so in the future.

As time passes, and due to the fact that man tends to facilitate processes of his life, he proceeded to prepare and create geographic software services and systems, the completion of which was successful through the use of the Internet. The field of Geography could not remain unaffected by technological progress, while informing people about it plays an important role in theoretical as well as in practical background. The rapid development in the field of technology simultaneously demands changes in the field of education. There is a wide variety of tools and media available that, when used correctly, can modernize teaching and make learning more active and participatory for students (Ploetz, 2015). Today the term 'Geo-Information Society' is used in part to express the notion that 'GIS' is not primarily a set of technologies, but rather significantly creates social dynamics around notions of place and space. However, to understand and explore the GI Society one must consider (some of) the current technical developments that facilitate and sometimes drive progress towards a spatially "smart" society.

There are according to scholars seven dominant geospatial technologies most relevant to the general public and therefore society in general (Thomas Jekel, al, 2014):

1. Global positioning. Knowing where the citizen is at any given moment can set the starting point for navigation, distance and proximity, create a personal 'environment' and

offer choices about what to do, who to meet and where to move. Easy access to Global Navigation

2. Personal sensors. Beyond positioning, the latest personal devices contain an increasing number of sensors. The accelerometer in every smart phone (smartphone) supplemented by a digital compass and general attitude sensor and sensors that take measurements for sound and light for different indications of navigation in light and in the dark.

3. Location-enabled applications. In the search for place of residence, hotel reservation, default in "minimum distance" criterion the GISsocietal applications help and information from different sources.

4. Augmented Reality (AR). At the "local scale," data about what we can see is merged directly into our own visual channel of perception. This concept was first implemented in airplane cockpits, and then brought to market through Google Glasses. Any "smartphone" or "tablet" can serve as an AR device by activating the camera and annotating what the user visually perceives, useful not only for tourists, but perhaps for local residents as well replacing the rather cumbersome contact with the map and navigation.

5. Projective Perspective. Traditional maps, as "flat views", require considerable abstraction of spatial orientation and message. Interestingly, we are now moving from the 'neutral', 'objective' presentation of spatial data in the same way for everyone – as in a standardized map – to a subjective, personalized perspective, where everyone controls their own view.

6. "Click" to launch or touch the screen. Due to developments in technology the paradigms of interaction are changing, to a great extent. As computers turn into personal mobile devices available in all kinds of contexts, space is running out and an indirect interaction tool such as a mouse cannot be used.

7. The software referred to are multimedia applications that leverage visualization by engaging the student audience in the background of visual literacy. There are not a few times, of course, that other means are used, such as headphones, in order to provide assistance to students, in order to create the theoretical background of knowledge for the specific taught course.

Images and their alternation play a very important role in memorizing the information provided. Besides, the predominance of images in modern Western culture mandates the establishment of a dialogue between visual and traditional literacy. After all, the image, as a way of understanding knowledge, plays an extremely important role.

Thus, one more feature that is structured is that of the dual goal provided in terms of creating concepts through symbolism as well as in providing the possibility of understanding more information through the visual representation of the earth (Dimitriadou, 2006). In a world dominated by visual media, multimodality is embodied through eye contact, which contributes to the creation of new intersections of codes and messages (Kalatzis - Cope - Stellakis - Arvanitis, 2019). It is worth mentioning that the image is created as a derivative of technology and the evolution of culture (Plios, 2001). Since, then, culture evolves, this indirectly implies the abolition of the teacher-authority, as the student now takes on the role not only of receiver, but of a critic and transmitter, when it comes to reproducing data in a theoretical and practical background. More over as Passadelli and Klonari (2021) stated if 3D geographic educational

material may be created, this could help dyslexic students to overcome some of the difficulties they face with Geography subject. In other words, the use of this type of software, in addition to the enjoyment it offers to the student public, is also characterized by the provision of direct experiential experience and access to a huge amount of information and data, which under other circumstances would not be possible to access through the traditional way of teaching.

## 4. CONCLUSIONS

In a constantly changing society, with geometrical progress increasing technological achievements, the future as a subject of geography appears as something certain and given. It remains to monitor and contribute to the development of not only the course as a cognitive subject but also as a whole in a holistic and experiential approach transmitting the information to minor, adolescent or adult students. It is of a great importance to introduce geography matters in a way that pupils will be accustomed to, familiar with so that Geography science will be a part of their lives and not just a subject memorized while they are in their school years and then forgotten. It is that we as educators need to change our way of teaching from just introducing the knowledge to introducing the way to learn how the knowledge will be found using the new technology.

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