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MODERN METHODS, MEANS AND TOOLS AND THEIR ROLE IN THE DEVELOPMENT OF GEOGRAPHICAL CONCEPTS AND TERMS

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ABSTRACT:

The beginning of the emergence of geography, most researchers depended on primitive methods and methods, but at the present time, knowledge development has increased and this coincided with technological development through the development of modern means and methods used in geographical studies, including quantitative and descriptive methods, and advanced modern methods and techniques through statistical methods and the use of mathematics , For many years, geographers have called for the use of methods and models in dealing with geographical issues, and they aimed behind this, to emulate and keep pace with other specialists in sociology and economics, and it is worth noting in this regard the efforts made by (Shurley G. Chorley) and (P. Haggett) in their important study on this subject, and it seems that this new trend in geography aims to revive the nature of ancient science as a branch of the body, and thus modern scientific studies work in the study of various geographical phenomena.

INTRODUCTION:

There are many methods that are used in geographical research in order to achieve certain goals, and here it is necessary to distinguish between the concept of the method, the approach, and the technique, if the approach includes a set of specific procedures to reach a final result. As it can be considered that the curriculum is the way in which the research is going to reach the results to be achieved, which includes many procedures and steps through which the goals and objectives to be reached are achieved. The method represents the angle of approaching the research topic or the interface through which the research will be addressed, while the method represents the

method used in the treatment, and of course the use of each method of treatment achieves certain results and does not achieve other results, and therefore the use of more than one method Research can lead to a degree of integration in the final results, which is a good thing, This is used in geographical research a number of methods, the most common in the humanities in various studies in general and geographical studies in particular is the descriptive method, which is one of the methods used in the study of geographical phenomena, whether natural or human, and it is one of the methods that led to the development of curricula used in geographical studies.

RESEARCH PROBLEM:
Do modern methods, means and tools have a role in the development of geographical concepts and terms? And how much is this role?

RESEARCH HYPOTHESIS:
The development of geographical concepts and terms was linked in one way or another to the modern geographical methods, means and tools, their identification and development.

RESEARCH METHODOLOGY:
The research relied on the deductive approach in the process of introducing the idea and addressing its parts. The objective approach was also dealt with to be a written approach, according to which his book, the subject of the research, proceeds. In order to reach the research problem and hypothesis, a large number of theoretical sources were adopted in order to enrich the research with the scientific background.

RESEARCH LIMITS:
The research can be determined by the objective limits of concepts and terms and their relationship to modern methods, means and tools and the role of each in the development of the second.

RESEARCH PROBLEM:
Do curricula have a role in the development of geographical concepts and terms? And how much is this role?

Descriptive Technique:

The descriptive method is one of the oldest methods used in geography and is linked to the old definition of geography, meaning that it is the science that is concerned with describing the earth, so that the various phenomena of the earth's surface, whether natural or human, are described. Perhaps one of the criticisms directed at the descriptive method is that it is subjective, not subject to fixed and verifiable criteria, and the description cannot be independent from different readers if their affiliations and cultures differ with the same concept or the same expectation of the nature of the geographical phenomenon described.

Cartographic Technique:

The cartographic method is one of the most important methods used by the geographer in many geographical writings in its various branches, whether natural or human, which is distinguished by its use from others. The cartographic method is one of the methods used in analyzing the spatial relationships of geographical phenomena, based on drawings and maps in its analysis. Perhaps maps are one of the best methods of spatial representation of geographical phenomena when studying them, and they are rightfully considered the basic tool and means on which the geographer depends, and which no one can surpass him in dealing with. Accordingly, the interest in studying maps, and trying to develop them is a necessary matter that should receive special attention among geographers, and the map idiomatically is "a graphic representation of geographical phenomena on the surface of the earth at a specific scale. It has also become known as the symbolic model for the real world (Abdul-Wahhab, 2012, p. 62). There is no doubt that the science of cartography is concerned with the processes of drawing and making maps, and this science is concerned with many specialists, whether they are geographers or non-geographers, and some of them are specialists in technology and development, because they are concerned with designing and producing drawings and shapes through which geographical phenomena are distributed, as the process of making maps begins Distribution of geographical features and phenomena (Khamis, without a year of printing, p. 1).

Quantitative Technique:

The use of quantitative methods in geography since the thirties and forties of the last century is an important qualitative leap in geography, which made it one of the sciences that provide analyzes with values that can be measured and received as one by people with different backgrounds. Here, it can be said that the use of quantitative methods in geographical studies has many levels, starting from numerical expression instead of verbal descriptive expression of the geographical phenomena to be studied, to the use of descriptive statistical analyzes, whether through calculating the averages of the median and standard deviation, or through matrices or from Through the use of advanced statistical analyzes, such as factor or cluster analysis, or through the use of mathematical models, (Hussain, 1970, p. 26). What is meant by the quantitative method is that attempt to prevail over the means of mathematical and statistical symbolic expression over the means of verbal descriptive and logical expression when studying geographical phenomena. But it has a certain significance such as the correlation coefficient or the standard deviation, and some geographers have described this development in geography as being like the quantity revolution, while others see it as a new horizon in geographical research (Musa, 2006, p. 7). This geographical approach began to be used in the United States of America since the fifties of the last century, and many geographical studies and research appeared that followed this research behavior, such as (Krikori study 1963) evaluating the use of quantitative method in geographical research, (King - 1968) (Burton study - 1963) and others Other studies rely on measurement, analysis, and interpretation that help the geographer to accurately describe and clarify spatial relationships, away from personal

judgment (Al-Muzaffar, 2005, p. 370). The quantitative method is a series of steps of thinking, measurement and analysis based on correct or approximate numerical data. In applied research, it is required that the quantitative method be used if there are two inherent qualities: accuracy and field survey (Musa, 2012, pg. 79). The importance of quantity comes from the fact that geography, like other disciplines, seeks objectivity in its treatment and real accuracy in its results. This comes from following a clear and scientific approach that keeps it against the methodological currents in other disciplines and a path for it in its development, and there is no doubt that geography needs this method like others. This was expressed by the Soviet geographer (Saushkin)* when he said (The need to use quantitative methods came as an inevitable result of the abundance of geographical information in which many ancient concepts and terms were known (Al-Sammak, 2011, p. 176).

Modern Applied Techniques in Geography:

Applied modern technologies are among the methods that can be benefited from through inventions, innovations and technological developments through data collection and use in order to serve human societies in various sciences and disciplines, a method that increased interest in it with the development of geography in the mid-twentieth century. This method is of great importance in developing concepts and terminology through modern technologies and their uses in various disciplines, including: (agricultural and industrial planning, regional planning, urban planning or rural planning, in addition to the applied climate in order to expand the branches of those sciences.

Field Study:

Geography occupies an intermediate position between the applied natural sciences and the social humanities, and deals with other natural and human elements, in terms of their characteristics, distribution, interactions and mutual influences between them, and what these interactions and influences leave behind from prominent signs on the surface of the earth, and within this broad field of knowledge looks at the field study As one of the main effective methods in geographical research, (Al-Zelitni, 2011).

Observation:

Observation is one of the most important and oldest means of collecting information, as it was used by the first person to identify natural phenomena and other phenomena, then its use moved to other sciences in general and to the social and human sciences in particular, and observation is an interaction and exchange of information between two or more people, one of whom is The researcher, and the other respondent or respondent, to collect specific information about a particular topic, during which the researcher notes the respondent's reactions (Al-Rifai, 2005, p. 221). And the research observation is a quiet and purposeful observation, not accidental or just a follow-up of events. It is restricted by the research problem, its hypotheses, and the sample selected for observation, and it is determined by the type of behavior to be observed, provided that the notes record card is carried and his observations

are recorded first (Al-Awamleh, 1995, p. 130). As for the concept of observation, there are many concepts and terms in the concept of observation, and sometimes according to the type of study and the research problem, the observation is that it varies from one research to another and from one problem to another. These results are in order to achieve the best results and obtain the most accurate information) (Odeh, and Malkawi, 1992, pp. 112-1158). As you know (the means by which you try to verify the apparent behavior of people by watching them as they express themselves in various circumstances and situations to represent the conditions of normal life), and observation is also known as the process of observing or observing the behavior of phenomena, problems and events and their physical and environmental components, and following up their progress, trends and relationships, in a manner Organized, planned and purposeful scientific, with the intention of explaining and determining the relationship between the variables (Aswad, 1991, p. 61-pg. 62).

Samples:

It is one of the concepts that is used when it is not possible to comprehensively survey the elements included in the study, and in this way a certain percentage of those elements under discussion are selected, which express the whole, and we find that taking the sample varies according to the type of research, and the samples are of several types, including. (Random sampling, regular sampling, stratified sampling, linear stratified sampling, and the concept of sampling is defined as (collecting information by selecting a part of the statistical population and the research sample includes a set of units, the sampling unit differs from one research to another where the sampling unit means the type of unit and the identification of essential attributes that must). To be realized in each unit of the research, meaning the original community (Al-Salih and the Syriac, 2000, p. 29-pg. 35). Which is the research community, and the researcher must determine the type of framework on which he depends in choosing the units of the community, which is all the vocabulary that you want to study to know its facts. And the characteristics of the original community (Saif, 1779, pg. 4-pg. 9).

Interview:

The interview is a method in which the researcher collects information in a direct meeting with the examinees, and asks them oral questions. The difference between the interview and the questionnaire lies in that the examinee in the questionnaire is the one who writes the answer to the questions, while the researcher himself writes the answers in the interview (Alyan, and others, , p. 102). The interview is defined as (a verbal interaction between two people in a confrontational situation where one of them, who is the interviewer, tries to provoke some information or changes in the respondent or that revolves around his opinions and beliefs). It is also known as (it is a directed conversation that an individual carries out with another or a group of individuals with the aim of eliciting certain types of information for use in scientific research or for use in guidance, diagnosis and treatment) (Odeh, and Malkawi, 1992, p. 188). It is a process of organized personal

communication between an individual and another individual, and organized communication takes place according to specific goals and a drawn plan, used for many and varied purposes that are not counted, and scientific research, guidance, diagnosis and treatment are some of these purposes. The researcher must be characterized by the following qualities, honesty and honesty in asking questions and recording information and facts, interest in research, and placing it and making it interesting to the nature of facts and information, intelligence and culture of the researcher that help in the success of the interview and adapting to all surrounding circumstances.

Questionnaire:

There are concepts that refer to the questionnaire, including (which is a tool that includes a set of questions or sentences, which ask the examinees to answer them in a manner determined by the researcher, according to the purposes of the research) (Odeh, and Malkawi, 1992, p. 184). (It is a means of collecting information related to the topic of research By preparing a form that is filled out from the sample by individuals, and the person who fills out the form is called the respondent) (Obeidat, 1999, p. 66). The questionnaire is an important means of collecting data and information that depends on a set of questions that are directed to individuals in the subject of the study indirectly, and the questionnaire is a form specifically designed for collecting data and information. It contains a set of questions, some of them are public and some are specific, and the success or failure of this process depends on the design of these forms, which must take into account important conditions, including (ease of questions, objective answers, few and clear questions) (Diab, 2011, p. 79). There are other terms for the questionnaire, including personal intelligence, which is one of the technical means for field work that uses observation of the behavior of the individual and the group and technical interrogation, recording observations and interrogations, From the above, the importance of the field study in geography becomes clear, as it is one of the most important foundations in geographical research. One of the aforementioned tools must be used in geographical research, which is, as we mentioned earlier, represented in (samples, observation, questionnaire, and interview). With these tools, he can The researcher is to obtain results and recommendations that contribute to solving local, regional or international problems, if possible, and let the geographer's role be to search for solutions to the problems facing the world today, , and that the geographical view of things is a holistic view, not a partial view, so it is more efficient and capable of solving contemporary environmental or natural problems, and from here stems the importance of the field study, through which the researcher can identify problems and find solutions to them and a comprehensive view of the surrounding and contemporary problems,(Al-Shami, 1977, p. 295).

Geographical Means and Tools and Their Relationship to Concepts and Terms

Preamble:
There are many means and tools that are used in geographical scientific research in order to develop scientific disciplines in general and geography in

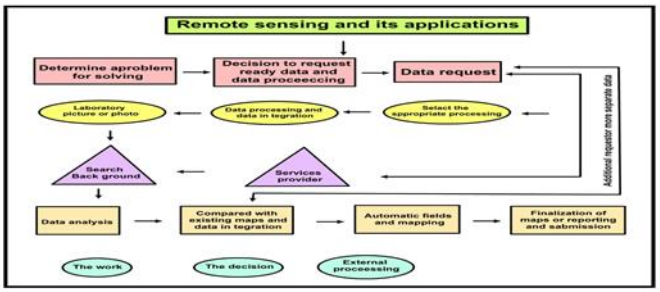
particular. A set of specific procedures to reach a final result, and of course the use of each method of treatment achieves certain results and does not achieve other results, and therefore the use of more than one means of geographical search, can lead to a degree of integration in the final results, which is one of The good things are using a number of means, including remote sensing and geographic information systems, devices used in geographical studies, GPS technology and maps.

Remote Sensing:

Remote Sensing is the science and art of obtaining information about a specific target, area or phenomenon by processing and analyzing the data obtained by a device far from those goals to be verified. It has applications in many fields, including the study of forests and the control of agricultural crops. Desertification and land degradation, and in the field of land use and soil classification, the role of remote sensing as an important source for gathering up-to-date and accurate information on natural phenomena on the globe is well known. This has been since the launch of the Landsat satellite in 1972 and the accompanying flow of information about the Earth and the need to deal with this huge amount of information in terms of processing and analyzing space visuals (Al-Massen, 2004, p. 106).

Sensing and sensing study the spatial distribution of phenomena, activities, and goals that can be identified in the spatial environment, such as points, lines, and spaces. It processes the data related to those points, lines, and areas to make the data ready to be retrieved for analysis, querying the data of those phenomena and activities, and using it in building maps, classifying the soil and determining the best one for planting a particular crop (David, 2015, p. 71). Geographical remote sensing is used in the creation of a land management database, multi-purpose planning for the use and assessment of productivity of untapped lands, monitoring of land disasters and land use maps (Abda, 2013, p. 292 - p. 300). The use of sensing methods in abundance at the present time in the study of geographical phenomena, and there is no doubt that the use of these modern techniques, achieve many benefits and benefits in the branches of geography, whether natural or human, both in terms of the possibility of studying areas that are difficult to reach, and conducting field studies on them. Easily as a result of the distance or some of the risks specific to their locations, especially since these methods have greatly reduced the cost of research with the reduction of the required study period (Mayas, 2013, p. 26- p. 35).

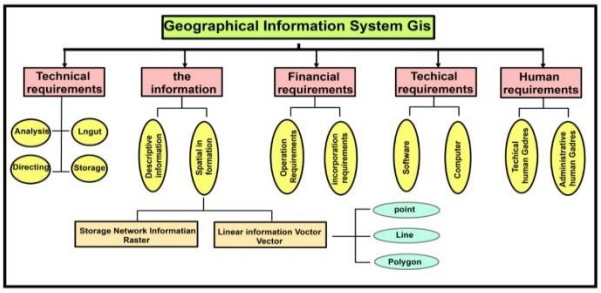
Scheme No. (1)



Geographical Information Systems:

Geographical information systems are defined as a type of computer application, both software and computer, and at the core of the tasks performed by this technology is the storage, retrieval, management, processing, analysis and presentation of a huge amount of geographic information in an accurate and effective manner for spatial information (maps) and graphic information (Al-Judy, 2011, p. 4). The beginning of the emergence of this technology was in the early sixties of the last century, and the Canadian Geographic Information System was considered the first geographical information system at the global level in the year 1967. As the Land and Natural Resources Information System was established in New York State in 1969, then the geographic information system was established in the state of Minnesota for land management. From the academic side, Professor (Ben Scarage) is the first to lay the theoretical foundations for geographic information systems, and the computer was used In drawing and spatial analysis at Harvard University in the United States, which was founded by Howard Fisher in the mid-sixties, as well as the unit of experimental cartography in Britain had a major role in the development and upgrading of geographic information systems (Jazmati and Al-Maqdisi, 2002, p. 77). There is a close link between GIS and the field of geographic knowledge, and it can be said that geography occupies a large part of research, development and training for GIS practitioners. Some even believe that geographic information systems are the main element in this field of knowledge for the foreseeable future in a period of great pressure for the government side's progress in the academic sector for employment in geography. Certainly, GIS is more than just a computer technology, and it is inferred from this that the academic efforts being made were aimed at joining the scientific community in order to gain more support to intensify scientific research (Rajab, 2015, p.). It is noted that more than half of the total disciplines that have an applied scientific relationship with GIS are in the field of geographical knowledge, and the reason is that geographers are among the first who have been concerned with the applied use of the computer in information processing, and the progress made in the concept of geography as a spatial science can be linked to technical developments in With Collection, Collation, Display, and Analyze data. This is because computers of greater size, speed and power have worked to expand the current trends and develop others, in addition to that, the main objective of geographical research is the development of Geographic theory)), through the development of geographical concepts and terms in its various branches, whether natural or human.

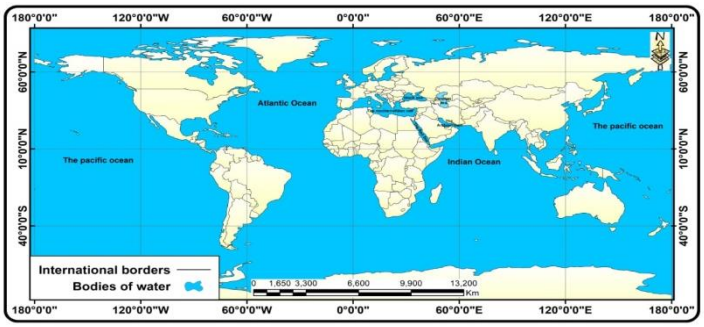
Scheme No. (2)



Maps:

It is the art, science, and technology of preparing maps and studying them as documents or as a work of art. It includes all types of maps, charts, and related sections, stereoscopic drawings, models, and balls representing the Earth's surface or part of it at a specific scale. The map is the outcome of a scientific and technical method in an organized manner through which the Earth's surface is represented. A spherical or part of it on a flat surface according to a drawing scale that regulates the relationship between the dimensions on the map and their analogues on nature according to a specific drawing site, As maps are still an important means of communicating ideas and planning and implementing projects, they are the main tool and means for drawing the reality we live in, or as we like to live it, but these maps require a long time and hard effort to draw them, as they are static and do not reflect the changes that occur around us (Al-Judy, http http://www.pcmag-arabic.com). It is noted that the maps come in two forms, the first is a study method, that is, it deals with the geographical phenomenon in a cartographic style, and the second is that it is a geographical means to display the geographical phenomenon for the purpose of clarification.

Map No. (1)



GPS Global Positioning System:

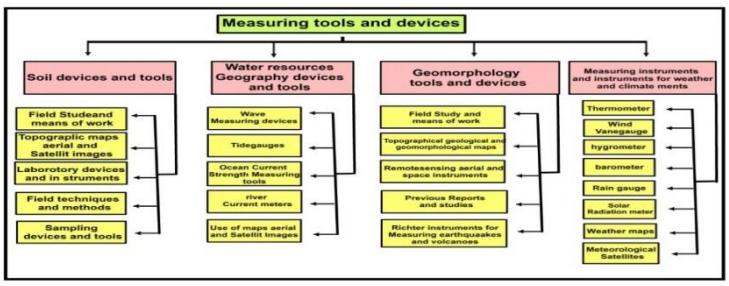
In the past, when there was a group of researchers who had the desire to go on an exploratory research trip in different places on the surface of the earth, They used the experience of one of the people of the area to be studied or explored as a guide to help them know the directions of the road, in addition to

using the compass device to determine the four directions, but what if this guide was lost or expired, How does this scout group find its way in the study area, and how does it complete its work tasks (Said, p. 56). The same is the case when taking a cruise without the knowledge, experience, or escorts of a marine guide, and certainly he will discover that he does not know when to return to the starting point, so he must need someone to guide him to the way, so what if your guide is a group of satellites that are watching you continuously through a receiver, which is known as the GPS, You can have a mobile-sized device that tells you your location on the ground at any moment and anywhere. This device is a GPS receiver, which means the Global Positioning System. In 1973, the US Department of Defense began working to develop a global system to determine the location in order to replace the (Global Navigation System) (GNS) system with satellite navigation, in order to avoid two main problems, the first related to the insufficient coverage of satellites and the other related to inaccurate navigational operations (Ahmed, 2015, p. 17).

Devices And Tools:

When talking about the means and their role in the development of geographical concepts and terms, and the development of geography in general, the role of devices and tools that are used in the branches of geography cannot be neglected. As the development and use of devices had a role in the accuracy of information and measurement and the possibility of measuring and identifying the geographical phenomenon under study. From measuring devices for climate elements such as solar radiation, temperature, pressure, wind, rain, fog, frost, dew and ambiguity to measuring devices for geomorphological and geological phenomena such as earthquakes and volcanoes, measuring regression, level, area, extension, height and depression, to measuring the speed of water current, salinity, soil texture and temperature, and others. As well as the devices and tools used in drawing maps, from rulers to compasses to compasses and others to many other devices. Certainly, the work, description and use of the devices requires many terms and concepts that the geographer needs to be familiar with. Certainly, the existence of concepts and terms has been defined, clear and easy for the geographer to address his geographical phenomenon and the possibility of measuring and predicting it. Thus, the role of devices and tools in the development of geographical concepts and terms cannot be neglected.

Scheme No. (3)



CONCLUSIONS AND RECOMMENDATIONS:

1- The humanities and pure sciences should be sought and the geography relationship crystallized, as it is a tributary of geographic information.

2- Take advantage of technological changes and the most important means, methods and tools of measurement to develop the topics of geography.

3- The study recommends emphasizing the provision of developmental programs that directly contribute to the development of geography.

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