GEOGRAPHIC EDUCATION IN RELATION TO MAP MAKING AND MAP READING[1]

by

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It is universally recognized that education is a continuous process of growth. It is geared toward the attainment of desirable habits, skills, abilities, attitudes, and knowledge that will make one a useful and a better citizen. Modern education is concerned with the understanding of man's environment so that he can contribute in improving the quality of life. He must have a good knowledge of the world, its physical features, climate, natural resources, and its people including their social institutions and government.

The field of study that deals with the physical and human environment is geographic education. Geography is a study of the earth and its relation to the various activities of man. The historic concept that geography is a description of the earth is no longer adequate to meet the modern concept of geographic education. It is not a mere enumeration of rivers, mountains, lakes, cities and capital towns. Webster defines geography as the science of the earth and its life especially the description of the land, sea and air, and the distribution of plants and animals including man and his industries with reference to the mutual relations of these diverse elements. Geography in its broader concept is the study of the earth and its relation to the solar system, to society, to nature, to government and to the works of man.

From this definition it can be seen that there are two streams of thoughts in geographic study. One deals with the physical aspects of the earth such as weather and climate, land forms and the natural resources. The other which is known as the social aspect deals with the study of population, human settlements and the features resulting from production and transportation. For this reason Geography is both a natural science and a social science subject. It provides the common territory for the natural scientists and the social scientists to interact and exchange information, knowledge and experience.

How does geographic education relates to the study of maps? Maps are the most important tools of the geographers. The word map is derived from the Latin *mappa*, napkin, sheet or cloth. A map is a

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graphic representation of the earth or a portion thereof drawn according to scale on a horizontal surface. The science of map making which is a specialized branch of Geography is known as Cartography.

Centuries before the Christian era, the Babylonians drew maps on clay tablets dating about 2300 B.C. Men in ancient times made efforts to communicate with each other about their environment by scratching their routes of travel, locating sources of water supply and hazards on the ground. The Greeks were credited for having established the science of map making or cartography. They are the leaders in searching for arable land thru exploration and navigation which led to the development of geographic knowledge and map making.

The truest map of the earth is the globe because it is spherical and nearly the shape of the earth. Strictly speaking, the globe is not a map as it is not drawn on a flat surface. Since the surface of the earth is spheroidal, the process of placing it in whole or in part on a flat surface is map projection. A map projection is an orderly system of parallels and meridians drawn on a flat surface. These parallels and meridians represent the earth's geographic grid.

Several kinds of map projections are being used but three general types are identified. These types are geometric, perspective and globe-skin. Each type has certain advantages but there is always a distortion either in shape, area or direction.

Geometric projection includes the cylindrical and the conic projection. In a cylindrical projection, the map is made by wrapping a cylinder of paper around the globe, transferring the earth's features into a cylinder, and unrolling the cylinder to show the earth on a rectangular sheet. This map is good for navigation because it shows true direction. On the other hand, if we cap the earth with a cone, project upon the cone, then split it open and lay it flat, a conical projection is the result. Conic projections show only a small distortion of shape and area.

Perspective projection is produced when the earth is viewed from a distance. Only one half of the globe is projected upon a tangent plane. The result is called an azimuthal projection.

The third type is called globe-skin which is made by taking a replica of half of the earth and flattening it, like that of half an orange. A variation of this method is the equal area interrupted map which is very much used in geographic study. This map gives a reliable picture of the areas of the land and the sea.

There are two types of features shown in the map, namely: the natural features and the man-made features. The natural features include the continents, islands, plains, plateaus, oceans, mountains, lakes, rivers, vegetation, climate, and the like. The man-made features include the political boundaries, roads, railroads, towns, human settlements, infrastructures, and other cultural works. Maps enable us to see the pattern

of landforms and the imprints of man. In brief, maps help us to see the earth as if it were in space aided by a powerful telescope. Maps help the reader to find the location of places by means of grid lines. A tourist for instance can easily locate places by the use of maps. Without maps, it will be very difficult to travel from one country to another.

To understand how to read a map, three things are essential, namely: (1) kind of a map (2) scale of the map and (3) the legends and symbols of the map.

Legends and symbols are devices that are used in the map to explain the features represented. With the use of legends and symbols the reader may be able to understand what the map intends to convey. These are therefore called "short cuts" in map reading.

The scale is another important element of the map. It shows a definite ratio between the linear distance on the map to the corresponding distance on the ground. Three types of scales are used; namely: graphic scale, fractional scale and verbal scale. The graphic scale consist of a line divided into units or segments. Each unit or segment on the map may represent so many miles or kilometers on the ground.

In the fractional scale the ratio is expressed in the form of a fraction such as 1/1000. This means that one unit on the map is equal to 1000 similar units on the ground. A 10 centimeter measurement on the map for example is equal to 10,000 centimeters or 100 meters on the ground.

In the verbal scale the ratio is expressed in words as an "inch to the mile". This means that one inch of measurement on the map is equal to one mile on the ground.

Kinds of Maps. — Several kinds of maps are used depending upon the purpose for which the map is drawn. The more common ones are: physical map, political map, forest map, population map, climatic map, weather map, mineral map, soil map, and topographic map. There are other maps for special purposes such as military map, industrial map, railroad and road maps, fishery map and oceanic route map. In a topographic map, the elevation is represented by brown contour lines, the water bodies by blue color, the vegetation in green and black represents the cultural works of man.

In closing, it can be said that an educated man should have a knowledge of geography and how to read and interpret maps. Knowledge of maps is a key to understanding the earth and to have a clear vista of the land and the sea beyond the horizon. Geographic education therefore, can not be complete without understanding the art and the science of map making and map reading. The teaching of geography which includes map reading is necessary in the elementary, secondary and tertiary levels of education in order to develop enlightened, constructive, and useful citizens of our country.