GEOGRAPHY PEDAGOGY

Unit 1: Basics of Academic disciplines

a) Meaning and characteristics of academic disciplines, Relationship between academic disciplines and subjects

An academic discipline is a branch of knowledge that is taught and researched as part of higher education. Discipline is defined by the *Oxford English Dictionary* as "a branch of learning or scholarly instruction." An academic discipline is clearly defined by its expertise, people, projects, communities, challenges, studies, inquiry, and research areas that are strongly associated with a given discipline.

Arthur Dirks points out 'discipline in an academic sense, pertains to the practice of study of a certain category of experience, its methodologies, how it goes about its pursuit of truth. There is fundamental theory and fact (one might call it doctrine) that informs the practice of that pursuit, but it is the pursuit that counts.'

According to Moti Nissani, a discipline can be conveniently defined as the study of "any comparatively self- contained isolated domain of human experience which possesses its own community of experts"

Characteristics of academic disciplines

Disciplines generally exhibit the following characteristics:

1) Disciplines have **a body of accumulated specialist knowledge** referring to their object of research, which is specific to them and not generally shared with another discipline;

2) Disciplines have **theories and concepts** that can organise the specialised knowledge effectively. Take the discipline of Psychology for instance. The process of how learning occurs is elucidated by different theories. A single theory may not explain every kind of learning, yet when one examines different theories, one gains an understanding of the process of learning under different circumstances.

3) Disciplines use **specific terminologies** or a specific technical language adjusted to their research object. The discipline of Science has its own technical language. Specific terminologies are used in the discipline. For example words like 'consumer', 'ecosystem', 'producer' will have a definite meaning in Environmental Sciences but the same terms used in the discipline of Business Studies would mean something entirely different.

4) Disciplines have a **particular object of research** (e.g. law, society, politics), though the object of research may be shared with another discipline. For example 'human behaviour' is one object of research in the fields of Psychology, Education and Management.

5) Disciplines have developed **specific research methods** according to their specific research requirements. A discipline is defined by its method. For example if someone is studying Science then there is a method incorporated in the study. Disciplines defined by a method a capable to realizing genuine change and their scope is also concrete.

6) Disciplines must have **some institutional manifestation in the form of subjects taught** at universities or colleges, respective academic departments and professional associations connected to it. The discipline of Medicine for example is characterized by medical colleges. The association of doctors and publications in this field are part of the institutional manifestation of the discipline of Medicine.

Academic disciplines and subjects

Different subjects share common areas of study and the nature of research. On the basis of these common aspects, subjects could be grouped under a specific discipline. If one looks at the courses offered by various universities one can see that broadly subjects are classified under the following disciplines.

a) Humanities
b) Social Sciences
c) Natural Sciences
d) Mathematics
e) Business

Humanities as a discipline:

The term 'Humanities' comes from the Latin word '*humanus'* which means cultured or refined. The Humanities are academic disciplines that seek to understand, appreciate and critique the human conduction in all its depth and range of meaning. Study of ancient and modern languages, Literature, Arts, History, Communication studies, Cultural studies, Philosophy and Religion are included in Humanities. The humanities came into existence around the time of the Renaissance to distinguish the study of human matters from the things that were concerned with theology on the one hand and nature on the other. Research in Humanities uses mainly critical or speculative methods. The approaches and methodologies of the humanities are primarily interpretive (analytical, critical, and/or reflective). Humanities provide us with ways to think about and respond to the world. The humanities enable us to reflect upon our lives and ask fundamental questions of value, purpose, and meaning in a rigorous and systematic way.

The significance of the discipline of Humanities is well summarized in the statement 'Behind the plural of Humanities is the singular of the human.' Humanities are important to the world of work as they provide us with linguists, interpreters, philosophers, historians, archeologists.

Humanities plays an important role in ensuring global peace, understanding and fostering healthy relationships with other countries. They develop informed citizens who think critically. Scientist Peter Medawar says "The scientist values research by the size of its contribution to that huge, logically articulated structure of ideas which is already, though not yet half built, the most glorious accomplishment of mankind. The humanist must value his research by different but equally honourable standards, particularly by the contribution it makes, directly or indirectly, to our understanding of human nature and conduct, and human sensibility."

Social Sciences as a discipline:

Social Sciences is a major category of disciplines concerned with society and relationship between individuals in the society. It consists of many branches such as Economics, Political Science, Human Geography, Sociology, Demography, Anthropology, History and Law.

According to Harry Elmer Barnes, the Social Sciences were created by the industrial revolution, which he describes as 'the greatest transformation in the history of humanity'. According to Charles Beard "Social Sciences are a body of knowledge and thought pertaining to human affairs". Bining & Bining define Social Science as "the subject that relate to the origin, organization, and development of human society, especially to man in his association with other men".

A creative, investigative and analytical mindset is developed due to Social Sciences. Values and reflective thinking are inculcated through Social sciences. Like physical and biological sciences, Social Sciences also incorporate scientific inquiry. In Social Science research, positivist social scientists use methods used by natural scientists to understand society. On the other hand, interpretivists use social critique or symbolic interpretation to understand Social Sciences. In modern times one finds eclectic researchers who use multiple methodologies to understand phenomena in Social Sciences. Like Science, Social Science is an empirical science meaning that knowledge is based on observable phenomena that can be verified by researchers working in similar conditions. Thus Social Sciences are a unique combination of various disciplines which aim at preparing the learner for wholesome social living.

Social Sciences have an important place in the world of employment. Economists, advisers, advocates, jurists, policy makers, sociologists, project managers, careers in community services and working with NGOs are just a few of the many areas where students of Social Sciences can make a career.

b) Classification of academic disciplines: Becher -Biglan typology (pure-hard, pure-soft, applied- hard, applied-soft types) with emphasis on nature of knowledge in each type.

There is no definite system with respect to classification of disciplines. Some experts classify disciplines based on the focus of their content as Arts and Humanities, Socials Sciences, Natural Sciences, Mathematics and Business Studies. In the early 1970s Anthony Biglan carried out a study to

investigate the faculty's judgment about similarities and differences between several academic fields. These perceptions were classified as

i. Pure vs applied
ii. Hard vs soft (or paradigmatic vs non paradigmatic disciplines)
iii. Concerned with life systems vs those not concerned with life systems.

Let us examine the meaning of these terms

Classification on basis of research undertaken

Pure Disciplines: Pure disciplines refer to those disciplines that tend towards fundamental research. There is systematic observation of phenomena solely for the purpose of discovering unknown facts which may develop into theories. The product of these disciplines is some kind of new knowledge. Simply put a pure discipline is a discipline that involves study purely for the sake of knowledge and not for its application. Some examples are Pure Mathematics, Pure Physics, Pure Chemistry, Pure History. To elaborate, Pure Mathematics solves problems, finds facts and answers questions that don't depend on the world around us, but on the rules of Mathematics itself.

Applied Disciplines: Applied disciplines relate existing knowledge to real world situations. These disciplines make significant contributions to the world by articulating the theoretical foundations in their field of study. For example Human Resource Development is an applied discipline that draws heavily from pure disciplines like Psychology and Sociology. Engineering is an applied science dependent on the pure sciences of Mathematics and Physics.

Classification on basis of data involved

Hard disciplines: Disciplines that tend to use quantitative data, tend to be predictive and use experimental methods are classified as a hard disciplines. Eg: Physics, Chemistry, Engineering, Computing are all examples of hard disciplines as they deal with quantitative data. They use experimental methods to build their repository of knowledge. Braxton (1995) represents the hard disciplines as being characterized by greater concern for career development and cognitive goals (such as the learning of facts and concepts).

Soft Disciplines: Soft disciplines are those disciplines that rely on qualitative data. They generally do not use experimental methods and hence cannot make conclusive predictions concerning the future. Examples of soft disciplines are Languages, Law, Anthropology and Education. The soft disciplines as being characterized by greater concern for general education development, character development, critical thinking and 'scholarly' activities (such as the reading of research articles).

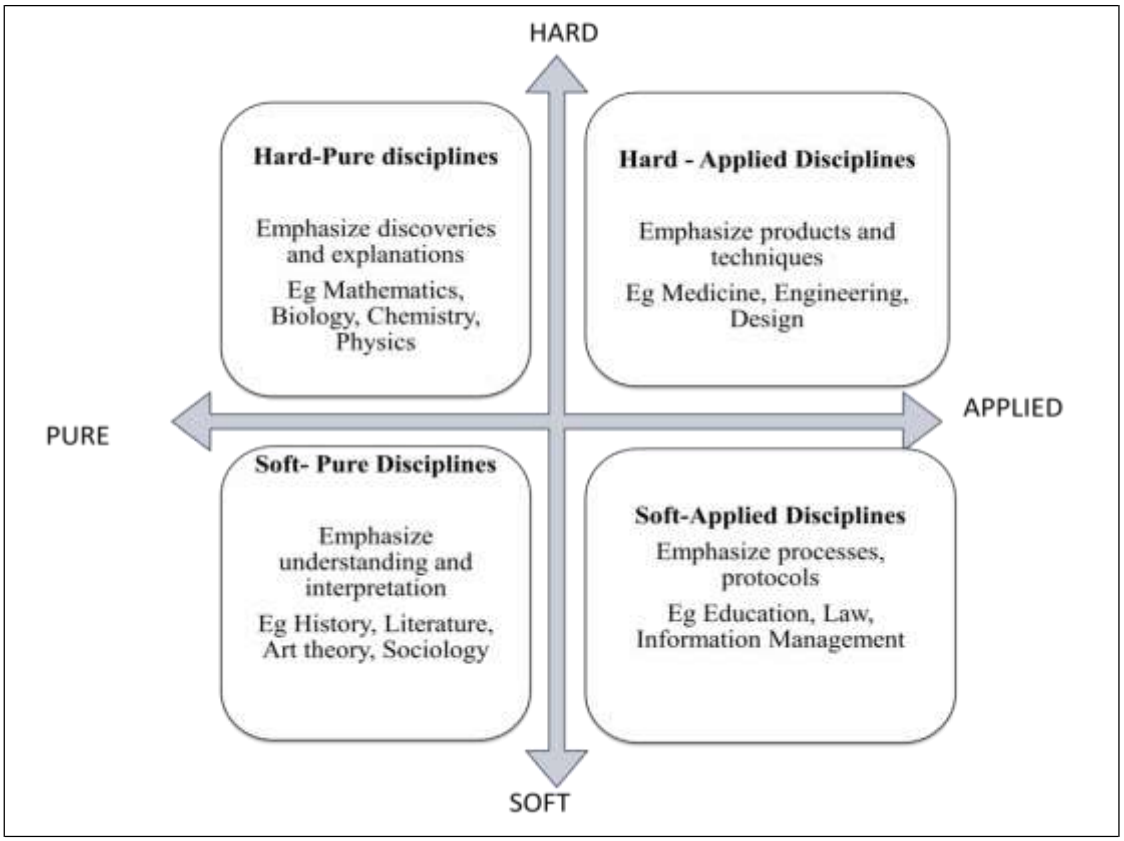
Disciplines are also classified as those dealing with life systems or living beings as against those that deal with inanimate objects. Examples of the former are Biology, Psychology and those of the latter type are Physics, Mathematics, Geology.

A study by Smart and Ethington (1995) reports the opinions on the goals of undergraduate education

from over 4000 university faculty members who regularly taught undergraduate students. The conclusions were that soft and applied disciplines place greater emphasis on knowledge acquisition, and hard disciplines have more concern for knowledge application. Knowledge integration and application were both perceived to be more important in the applied disciplines than in the pure.

While Biglan's work concentrated on the cognitive dimension of disciplines, Becher in 1989 called attention to the social dimensions of academic disciplines. From this emerged the Biglan- Becher typology of academic disciplines. According to this typology, four main types of groups are possible

1. Hard and Pure disciplines
2. Hard and Applied disciplines
3. Soft and Pure disciplines
4. Soft and Applied disciplines



Hard-Pure disciplines involve general areas of human understanding and are clustered around limited number of problems. The nature of knowledge in these disciplines is cumulative and concerned with universal phenomena. The result of such knowledge is discovery of something new or expansion of already existing knowledge. Just like a crystal grows as more and more molecules add on to it, so is it in case of this group of disciplines. As new knowledge keeps adding, the older form of knowledge is enhanced. For example, consider the knowledge about an atom. As research on the atom progressed, our knowledge about atoms made incremental progress. The relationship between the knowledge seeker and knowledge is unbiased and very objective. There are very definite criteria to verify knowledge in such disciplines. There is a high degree of consensus over significant questions. For example if two scientists are studying the effect of temperature on the states of matter, their results will be similar no matter which parts of the world they perform their experiments in. Academic communities in hard-pure disciplines are well organized, their work is quite competitive and publication rates are high.

Hard-Applied Disciplines are involved in purposive work. The emphasis is on application of theories resulting in creating techniques and products. These disciplines are practical in nature and are concerned with solving problems, addressing challenges and mastering the environment around us. The focus is on application and hence heuristic approaches find more importance in such disciplines. They use both quantitative and qualitative approaches. The criteria for judging

the product of such disciplines are functional. Such disciplines result in new techniques and products being created. Engineering, for example, is a hard-applied discipline which draws from Mathematics, Physics and Chemistry. Clinical Medicine is a hard-applied discipline dependent upon Biology and Chemistry. The ethos in such disciplines is entrepreneurial and dominated by professional values. Patents are submitted for publication.

Soft-Pure Disciplines stress on understanding and interpretation of phenomena. Knowledge in these disciplines is reiterative which means there may be repetition of knowledge when examined in different situations. These disciplines are concerned with particular happenings rather than general occurrences. Unlike hard sciences, here data is qualitative. The researcher and knowledge share a personal relationship. There can be different views regarding what verification of data. Subjectivity can be high when interpretations are made. There is no definiteness as to what significant questions are to be answered. Anthropology and History are some examples of disciplines in this type. The academic communities of such disciplines tend to be less structured compared to those from hard-pure disciplines. Publication rate is also lower.
It is interesting to note that while a discipline like Sociology is a soft-pure discipline, Sociometrics, a subfield of Sociology, is hard-pure.

Soft-Applied Disciplines emphasize processes and protocols. These are functional and utilitarian in nature. They are concerned with the enhancement of professional practice. Often their status is uncertain. They also appear to be dominated by intellectual fashions. They use a mix of qualitative and quantitative data for their growth. Case studies form an important tool in such disciplines. Law and Education are examples of soft-applied disciplines. Education depends upon other soft disciplines like Psychology, Sociology, Philosophy. Publication rates in these disciplines are low.

A brief summary of the above discussion is given below

Discipline types	**Nature of knowledge**	**Objects of inquiry in the discipline type**	**Enquiry procedures**	**Results of Research**	**Culture of the discipline type**	**Disciplinary areas**
Hard-Pure	Cumulative and concerned with phenomena	Concerned with universal things and quantities	Clear criteria for knowledge verification	Discovery and theories	Competitive, high number of publications, task oriented	Natural Sciences
Hard-Applied	Purposive and pragmatic	Concerned with mastery of physical environment	Qualitative and quantitative approaches, use of heuristic methods	Patents, products	Entrepreneurial, Dominated by professional values, role oriented culture	Science based Professions
Soft-Pure	Reiterative, holistic knowledge	Concerned with particular events	Qualitative methods, there is dispute over criteria for	Results in understanding and interpretation	Individualistic, loosely cohesive communities, low publication rates	Humanities and Social Sciences

Thus the understanding of Biglan-Becher typology gives an overview of how different disciplines are similar and how they differ. One also sees how a particular group of disciplines has somewhat similar characteristics with respect to research carried out or publications made.

The Biglan - Becher groupings can be a tool to promote intra- as well as interdisciplinary dialogue

through recognition of the differences and similarities present in the various groups. Research in Education must take this typology into consideration as Education (from the soft- applied type) often relies on disciplines like Psychology and Sociology (soft-pure). A good understanding of the typology of disciplines will result in better quality of research. Interdisciplinary studies too need to look at this typology carefully.

c) Place of Humanities and Social Sciences in present school curriculum

Place of Humanities in present school curriculum

Humanities

The humanities - are part of the liberal arts. They are defined by Webster's Dictionary as "the branches of learning having primarily a cultural character." The emphasis is on languages, literature, art, music, philosophy, and religion. An Arts & Humanities degree_in humanities major can include art history, classical studies, liberal arts, English, history, modern languages, philosophy, religious studies and writing. They are all classified as humanities degrees, despite the fact that many colleges and universities have separate faculties for these studies.

Scope

In the humanities, we study all aspects of society - from past events and achievements to human behavior and relationships among groups. You learn how to learn, developing your skills in researching, reading, writing, and thinking your way through abstract problems.

The calling of humanities is to make us truly human in the best sense of the word." J.Irving Mille

Status of Humanities

Post-independence we took up the three language formula again reiterating the significant status of language in the school curriculum. The National Policy on Education (NPE) – 1986 reiterated the need for the implementation of the three language formula in its true spirit while recording the unsatisfactory implementation of the formula in some parts of the country. The National Curriculum Framework–2005 developed after a nation- wide debate and discussion approved by Central Advisory Board of Education (CABE) makes the following guidelines on language education:

 The National Commission on Education known as the Kothari commission examined and recommended a graduated formula which was recommended by the National Policy of Education 1968.
 This is the relevant extract of what it says: Development of Languages (a) *Regional Languages*: The energetic development of Indian languages and literature is a sine qua non for educational and cultural development.

Unless this is done, the creative energies of the people will not be released, standards of education will not improve, knowledge will not spread to the people, and the gulf between the intelligentsia and the masses will remain, if not widen further. The regional languages are already in use as media of education at the primary and secondary stages. Urgent steps should now be taken to adopt them as media of education at the university stage.

Three language formula

Three- Language Formula: At the secondary stage, the State Governments should adopt, and vigorously implement, the three- language formula which 'includes the study of a modern Indian language, preferably one of the southern languages, apart from Hindi and English in the Hindi- speaking States, and of Hindi along with the regional language and English in the non- Hindi speaking States. Suitable courses in Hindi and/or English should also be available in universities and colleges with a view to improving the proficiency of students in these languages up to the prescribed university standards.

National language

Hindi: Every effort should be made to promote the development of Hindi. In developing Hindi as the link language, due care should be taken to ensure that it will serve, as provided for in Article 351 of the Constitution, as a medium of expression for all the elements of the composite culture of India. The establishment, in non- Hindi. States, of colleges and other institutions of higher education which use Hindi as the medium of education should be encouraged.

Additional language

Sanskrit : Considering the special importance of Sanskrit to the growth and development of Indian languages and its unique contribution to the cultural unity of the country, facilities for its teaching at the school and university stages should be offered on a more liberal scale. Development of new methods of teaching the language should be encouraged, and the possibility explored of including the study of Sanskrit in those courses (such as modern Indian languages, ancient Indian history, Indology and Indian philosophy) at the first and second degree stages, where such knowledge is useful.

International Languages: Special emphasis needs to be laid on the study of English and other international languages. World knowledge is growing at a tremendous pace, especially in science and technology. India must not only keep up this growth but should also make her own significant contribution to it. For this purpose, study of English deserves to be specially strengthened.

NPE 1986

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Language teaching needs to be multilingual not only in terms of the number of languages offered to children but also in terms of evolving strategies that would use the multilingual classroom as a resource.

Home language(s) of children, should be the medium of learning in schools.

If a school does not have provisions for teaching in the child's home language(s) at the higher levels, primary school education must still be covered through the home language(s). It is imperative that we honour the child's home language(s). According to Article 350A of our Constitution.

Education in the mother–tongues will facilitate richer classroom transaction, greater participation of learners, and yield better learning outcomes.

Perception

Literature in its turn is seen as a luxury – it works on the top of Maslow's hierarchy of needs; it is not significant for most of the people in the world. Where poverty and disease and war afflict the world and power and money rule individual aspiration, aesthetic pleasure is subsidiary.

Nothing concrete, tangible or 'useful' can be achieved from the study of Humanities – that is what popular opinion dictates. And this reflects in the absolute lack of opportunity and progress for Humanities graduates in their own field. Humanities is the most neglected subject at school level in India. A mere mention of the word "Humanities" can bring frowns on your parents' forehead."

Opting Humanities is considered to mean that you are a weak student and not as brilliant as the one who is picking the science subjects.

Place of Social Sciences in present school curriculum

Definition of social science –

The study of human society and of individual relationships in and to society.

A scholarly or scientific discipline that deals with such study, generally regarded as including sociology, psychology, anthropology, Economics , political science , and history .

Social science encompasses diverse concerns of society and include a wide range of content drawn from various disciplines.

Place of social sciences in the curriculum

World over Social sciences hold a significant place in the curriculum because the knowledge and understanding developed through the study of social sciences and humanities can help inform discussion on critical social, cultural, economic, technological, environmental, and wellness issues, and can provide a strong foundation for vibrant, healthy, and engaged citizenship.

Social science explores individual and collective human behavior and needs as well as patterns and trends in society.

Its place in the Indian context of Education

After 1947, social studies gained an honorable place in the curriculum. Before independence British history was taught to the Indians which had no relevance with the Indian contexts.

The N.C.E.R.T., has given it a due place in the curriculum. K.P.Chaudhary by supporting social sciences in the curriculum says, "Like the natural sciences, Social science efforts are to develop general laws and predict the future."

Post colonial India – social science significance was perceived needs of nation building , modernization.

Lead to the utilitarian view of fitting students for life , for society.

UNESCO Round table conference 1954 was on teaching of social sciences in Asia. The conference emphasized the Plea of social science for citizenship.

NEC National Education commission 1975 gave the nation building emphasis. That is for citizenship. So it has always been a fairly progressive vision for social science. NCERT suggested a history/geog in middle school, secondary history /civics and eco/geog and finally suggested we need an integrated approach without causing damage to the individuality of the discipline.

NCFSE 2000 emphasized shaping or reconstruction of society through social science – so the discipline gained critical significance.

NCF 2005 said social science as a scientific endeavor that must challenge patriarchal frames and strive to generate in students a critical, moral and mental energy making them alert to the social forces that threaten these values and create inquisitive and transformative citizens.

Finally the NCERT squarely addressed the importance of social science as a non utility subject . The NCERT paper states through the National Focus Group on 'Teaching of Social Sciences'

"The Social Sciences carry a normative responsibility to create and widen the popular base of human values, namely freedom, trust, mutual respect, and respect for diversity. Given this, social science teaching should aim at investing in children a critical moral and mental energy to make them alert to the social forces that threaten these values. Through the discussion of concerns such as threats to the environment, caste/class inequality, state repression, through an interdisciplinary approach."

UNIT -2 : UNDERSTANDING THE SUBJECT AND CURRICULUM

a) Meaning, Nature and scope of Geography

Meaning of Geography

Geography is one of the social sciences. It is a dynamic subject. Every day we make use of the knowledge of this subject.

The literal meaning of geography (Geo-graphy) is description of the earth. But this meaning has some limitations. As the geography is dynamic subject its concepts have been changed from time to time. Geography is defined as the description of the earth.

Considering the great influence of the environment on man Dr. L. Dudley Stamp has defined geography in his book ‘How to Teach Geography' as follows.

“Geography is a description of the world and its inhabitants. “

This definition indicates that geography takes into consideration the human factor. But this descriptive nature of subject can be called a part of geography Geography is not limited to this description, geography is something more than that. In fact, the earth is studied as the home of man.

Therefore, Prof. E.A. Macnee defined geography in the following words,

"Geography is the study of the earth as the home of man, or in other words, geography is the study of the environment of man, physical and social, particularly in its relation to human activities.”

Prof. James Walker also drew attention to the above point in his book named 'Aspects of Geography Teaching in School1. According to him "Geography was concerned with the earth as the home of man or that it investigated the nature and results of man's activities in the light of his environment. “

Prof. James Fairgrieve has described geography in the following lines,

"Geography is the science which deals with forms of relief on the earth's crust, and the influence which these forms exercise on the distribution of other phenomena.”

This definition indicates that certain physical factors continue to influence other physical factors.

James Walker already brought to the notice the nature of geography.He laid stress on the study of human activities in relation to environment.

Prof. James Fairgrieve expressed his thoughts about the basic principles of the subject and has broadly stated the function of geography in the following words,

"The function of geography is to train future citizens to imagine accurately the conditions of the great world stage and so to help than to think sanely about political and social problems in the world around. "

The cause and effect relationship is studied in geography. No event can take place without a cause. Similarly no cause can remain dormant. This is very well realised in modern geography.

Summarizing above definitions of geography, it can be concluded that geography is the study of interaction between man and his environment.

Scope of Geography

The scope of geography is very vast. The scope has grown up of its descriptive character. . Now-a-days an attempt is being made to establish cause and effect relationship between various factors pf geography.

It, therefore, tries to find answers to the questions of following sort viz. Why do people belonging to a particular region use a particular and peculiar type of food, dress etc. ? How is it that they have peculiar type of shelter ? Why a particular type of vegetation is found at a particular place and nowhere else ?

Geography tries to create and develop good citizens. Human beings have developed their activities. This constant development of human activities and physical factors have widened the scope of the study of geography. While learning the aims and objectives of geography, it is helpful to understand the scope of geography. Tb give broad vision of an intellectual# moral and social outlook on the problem of life is one of the purposes of teaching geography.These problems can be solved when we think about the utility of the study of geography. This study is useful for customers ordinary readers for reading and writing history.The study of geography is helpful to sharpen the brain of the man. Geography is the science of all sciences. It involves the study of physical as well as social sciences. It is taken as an arch of physical and social sciences. In its scope it ranges from the physical sciences of Astronomy, climatology. Geology through natural histories of Botany and Zoology to the human studies of Anthropology, Ethnology, Sociology and History. The scope of geography ranges# it was supposed that the description of the earth is the study of geography but today the values of teaching geography have broadened the scope of the study of the subject matter.

Prof. O.P.Verma explained the scope of geography in the following words , "In a broad way we can conveniently say that the subject matter of geography is the earth not only the rock or the water that encircles it or the universe or the man that inhabits it or the atmosphere that surrounds it, but it studies one and all."

Still this subject has Its own Individuality. Many factors of other subjects are studied in geography, which have no separate meaning and existance in the study of geography.

Physical environment in relation to. human activities as well as social and political activities of the man is studied in this subject. From the point of view of subject matter various departments are studied in the geography, physical geography, human geography, economic geography, political geography, historical geography, social geography, medical geography etc. These are departments and aspects of geography.

Nature of Geography

Geography is concerned with place. Understanding the nature and causes of aerial differentiation on the global surface has been the geographer's task since people first noticed differences between places. Through geography we seek to understand these differences in patterns of human distribution, interrelationships between human society and the physical environment, people's use of the Earth in time and space, and how these differences are related to people's cultures and economies. These, and other related themes, express major concerns of our time and reflect the consequences of spatial decisions. In geography's pursuit of this understanding the questions "where?," "why?," and "how?" are central. The first of these introduces the issues of location and spatial choice; the latter two signify that modern geography is not content merely to describe, but seeks to explain. Beyond these questions, geographers also ask a fourth—"what if?"—as a means of seeking alternatives and giving the subject an applied dimension that can assist decision makers in planning and development at a variety of geographical scales. The idea of place is not an examinable objective but an ultimate goal, whose pursuit gives direction to geographical study. As a geographical concept it refers to the aerial context of events, objects, and actions; in other words, to the patterns resulting from human occupancy of the global surface over time. The areal context is set in space which, though measurable, has by itself no meaning. Space becomes place when humans invest it with meaning, most commonly by giving it a name and all of the associations that that name evokes. The terms place and region may, therefore, be distinguished by spatial scale, rather than by inherent differences, for both involve space that has been invested with meaning. Two important implications flow from this understanding of place: First, geography is strongly influenced by the norms of the social sciences. The complexity and changing nature of human society seldom permit the type of precision expected in the physical sciences. Instead, the social sciences offer a variety of perspectives and methods of study by which to examine the consequences of human behaviour on the global surface. In studying the idea of place from a spatial perspective, geographers inevitably encounter the problem of change through time; for them, landscape is document. Historians, too, are concerned with change through time as they document the consequences of human behaviour. Thus, like geographers, historians are also concerned with place. Indeed, a common concern with place brings the work of geographers and historians close together.

Second, physical geographers, no less than human geographers, contribute to an understanding of place; for the concept of site—the physical characteristics of a place

—is integral to understanding aerial differentiation on the global surface. Nevertheless, geographers focus on the patterns and interactions to be found on that surface, and not primarily on the natural processes that act on it from above or below. They recognize that interaction between humans and their environment has always been mutual, and that the growth of technology has increased the human capacity to modify the environment.

b) Aims of teaching Geography

The aim of teaching geography is that it provides mental discipline which means that the subject trains the pupil's whole mode of the thought which in its turn influences his intellectual life and studies in same field. This mental discipline comes through the application of scientific attitude in distinguishing facts, interpreting their effects, and drawing correct conclusions and interferences. Geography encourages independence in thought and action.

Geography lays down the foundation of the economic, social & political problems. Knowledge of geography bridges the gap and helps in avoiding conflicts by bridging about international understanding. Geography has a cultural aim too. Culture is the sympathetic appreciation of the universal truth expressed in art, literature, philosophy, science and religion. Geography helps developing hobbies, and a taste for reading newspapers and literature on travel.

Geography helps pupils appraise their real worth to them. Every person, no matter what level of intelligence he possesses, has a place in society. It is good for society to keep person of different skills and calibers. The geography teacher should help his pupils to discover his qualities, take pride in his talents and build his character to enable him to find satisfaction in his achievements.

Objectives are usually governed by the needs of young pupils and these are of two types.

Firstly, those which can be satisfied by acquisition of ideas and skills and are known as short-term, or subject-matter objectives.

The second types of needs are these which are satisfied by matured thinking & acting.

The latter are summed up under long-term objectives (Aims) , because their function is an overall development of a person which may continue throughout his life. These two types of objectives are inter-related & inter-dependent. The subject-matter objectives control the framework of the syllabus, whereas the long term objectives determine how the course material of the syllabus has been tackled.

The long-term objectives (Aims) in geography will require a child:-

1. To get acquainted with the basic knowledge of the subject

2. To develop his own observation skills

3. To understand the inter-relation of the subject and the society

4, To thoroughly understand its concept and theories.

Objectives of Teaching Geography:

- To acquaint the pupils with the living conditions of men in different parts of the globe.
- To enable the pupils to acquire a knowledge of natural resources.
- To develop in pupils an understanding of how environment and climatic factors have influenced our life.
- To help the pupils to acquire knowledge of their physical and social environment and thus to broaden their outlook.
- To develop in them an understanding of basic concepts, principles and theories relating to geographical phenomena.
- To train the pupils in nature study.
- To develop the power of thinking, reasoning, memory and power of imagination of pupils.
- To develop their ability to draw conclusions and to generalize.
- To develop a love for nation and to develop cosmopolitan and internationalist outlook.
- To develop the creative talents of pupils and to develop an attitude of discovery in them.
- To develop the skills of reading maps and globes, to develop drawing and measuring skills, and to develop the skill of using and manipulating geographical instruments.
- To enable the pupils to appreciate the natural beauty and other physical forces.
- To help the pupils to acquire economic efficiency and lead a successful life.
- To adjust human life in accordance with geographical circumstances.

c) **Geo-literacy: Concept, need and way to create awareness.**

Introduction

Geo-literacy is the term that National Geographic has adopted to describe the understanding of how our world works that all members of modern society require. Geo-literacy is the ability to reason about Earth systems and interconnections to make far-reaching decisions. Whether we are making decisions about where to live or what precautions to take for natural hazards, we all make decisions that require geo-literacy throughout our lives.

What is Geo-literacy ?

It is preparation for decision making in the 21st century. It is all about helping people make decisions that they need to make to involve understanding and reading about their world.

Concept of Geo-Literacy.

- **As defined by National Geographic**, geo-literacy is "the ability to use geographic understanding and geographic reasoning to make decisions".

- **Geographic Society, geographic literacy—** geoliteracy is the understanding of how the world works that all members of modern society need. It is the ability to reason about Earth systems and interconnections to make far-reaching decisions.

- It is process of acquiring knowledge and critical-thinking skills. study of places and the relationships between people and their environments. the understanding of human and natural systems, geographic reasoning, and systematic decision-making.

Need of geo-literacy

- In our modern, globally interconnected society, it is more important than ever that people understand the world around them.

- Gel-literacy important for the introduction of high-yield, low-impact agricultural practices, early-warning systems for national defense and natural disasters, and the preparedness of our children to have systemic understanding, geographic reasoning skills, and systematic decision-making capability are crucial for our society

- Geo-literacy can reduce the costs of bad decision-making and provide the foundation for positive breakthroughs. For these reasons and more, National Geographic is committed to advancing geo-literacy in the United States and around the world.

- Geo-Literacy helps us to teach the process of analysis and how the results of our decisions impact other issues — some we would not have even considered.

Components of Geo-literacy :

1-Interactions :

Understanding the world in terms of systems (social systems, environmental systems) and how humans and environment interact with each other.

2-Interconnections:

It involves geographic reasoning. It is about how one place in the world is connected to another place. It is also about the qualities that can make good or bad places for doing things

3-Implications:

This one is about decision making, to be able to systematically reason and understand how things are connected to make good decisions in the 21st century.

The way to create awareness

- **Tie geo-awareness to the need for geography education.** A growing awareness of the geographic nature of problems from local to global scales is evident, yet a realization that these issues can be better understood using the geographic perspective seems lacking.

- **Emphasize that maps are not just reference documents.** Many still regard maps largely as reference documents; that is, solely for looking up where something is. Geographers must demonstrate how maps can be a doorway to discovery about the physical and cultural world and local communities in which we live.

- **Model effective use of geotechnologies in teaching, research, and other applications.** Geographers can use the democratization of geotechnologies to explain why and how skills in using these tools are essential to many careers and everyday tasks.

- **Tell stories with maps.** Geographers can take advantage of the longstanding interest that people have had with maps, and the equally rich tradition of telling stories, to use web-based dynamic mapping tools engage the general public.

- **Help students to engage with the tools.** The bulk of geotechnology training in secondary and university education over the past 20 years has been geared towards educators, rather than students. While this has the advantage of working with professionals who in turn could impact

thousands of others, educators must realize that it is even more important for the students to learn how to use these tools.

- **Focus on change.** Nearly all issues and problems have a change component. Because the Earth is changing, a platform to map that change that also is dynamic is the perfect complement, and that is what web based mapping offer.

Unit - 3 Essentials of teaching Geography and curriculum construction

a) **Maxims of teaching**

Maxims of Teaching are the universally facts found out by the teacher on the basis of experience. They are of universal significance and are trustworthy.The knowledge of different maxims helps the teacher to proceed systematically. It also help to find out his way of teaching, especially at the early stages of teaching.

1) Proceed from simple to complex:

In this process of teaching-learning, the teacher should see that simple things are presented first to the students. That way they will start taking interest. Once they become interested, gradually complex type of things can also be learnt by them. By learning simple things, they feel encouraged and they also gain confidence. On this basis, they become further receptive to the complex matter. On the other hand, if complex types of things are presented to the learner first, he become, upset, feels bored and finds himself in a challenging situation lot which he is not yet ready being immature and unripe.

Gradually more difficult items of learning may be presented to the students. It will smoothen teaching being done by the teacher and make learning convenient and interesting for the students.

For example-

For imparting the knowledge of sea and ocean a geography teacher can show a pond or a tank to his students.

2) Proceed from known to unknown:

This maxim is based on the assumption that the student knows something. We are to increase his knowledge and widen his outlook. We have to interpret all new knowledge' in terms of the old. It is said that old knowledge serves as a hook on which the new one can be hung. Known is trustworthy and unknown cannot be trusted. So while teaching we should proceed from known and go towards unknown. It is always better to proceed from known to unknown. It demands that the teacher should make efforts to establish some association with the previous knowledge of the students while imparting them any knew knowledge.

For example-

While teaching about forests and their qualities the geography teacher can establish association with gardens that the students have seen.

3) Proceed from concrete to abstract:

Concrete things are solid things and they can be touched with five senses. But abstract things can only be imagined. So it is rather difficult to teach the children about abstract things. The students are likely to forget them soon. On the other hand, if we teach the students with the help of concrete objects, they will never forget the subject matter.

Though it is desirable to proceed from concrete to abstract but it is difficult in teaching of geography. Geographical factors, that are abstract in nature, cannot be displayed in concrete form.However teacher should try his best to act according to this maxim.

For example –

The teacher should make use of pictures, maps, sketches and diagrams and try to establish the abstract facts in the minds of the students. Similarly a model of mountain can be used to explain various things about a mountain.

4) Proceed from particular to general:

It is always better to cite some specific example before proceeding to general principles of a phenomenon. It helps the students to follow things easily and properly. The geography teacher should proceed from the Geography of region and then go over to the Geography of the general principles of the whole world.

For example –

Particular- Thar Desert, Sahara desert, Gobi desert, Negev desert have very sparse vegetation.

General- All deserts have very sparse vegetation.

b) Correlation with other school subjects: Languages, History, Science and Maths

Geography and languages – Geography provides many chances for exercises to be written in the mother tongue (language). The geography teacher should emphasize that pupils should have geography note book in instructional language which is clear, correct and to the point. Literature on geography is best appreciated if it is in the mother tongue. Similarly, the language teacher helps a lot by setting geographical topics for story, essay writing or composition, etc. Even passages for précis writing may be related to geography. There are very lucid descriptive passages in prose which can be employed by teachers of both the subjects to break the monotony of daily routine. Books dealing with travel, exploration and discovery may be encouraged for language study. When such books are read to pupils, they bring about better linguistic development as well as better acquisitions of geographical knowledge.

Geography and History- Geography and history are of course, most intimately related. In fact they are twins, one stresses time and the other space. History studies people of different times and geography deals with the people of different places. Therefore historical facts can serve as a good basis for a rousing interest in geographical studies. Similarly geography offers explanations for historical actions of mankind. The geographical phenomena have a profound influence ‘on the course of history, historical studies devoid of geographical background would be inaccurate and unscientific. The world is a stage on which man plays his part. Geography studies the world and history the action of the man on the world stage. For Example, the expansion of the French and the English colonies in North America was directly controlled by geographical setting of the land. The whole story of their colonisation becomes intelligible when geography and history are studies together. Both history and geography have a common claim on the equipment and teaching aids of the geography room like maps, pictures and atlases which are useful in the two subjects in equal measure.

Correlation of Geography and Science - There by the knowledge of physical sciences. for example, principles of climate, topography, has been so much correlation between these two subjects. lessons on physical geography are better understood causes of current, and tides, rotation and revolution of earth, distribution of flora and fauna, the phenomena of earthquakes and volcanoes, weathering and erosion are the topics which are which are as such related to physics, chemistry, botany and zoology as to geography. Similarly, the whole biological and zoological life is controlled by chemistry of soil and climate, nature study, too prepares the child for geographical work. All these sciences have a common theme with geography studies the distribution of rocks or forests or animals or men. physical sciences study these topics but from different angles and in greater detail.

Correlation of Geography and Mathematics - It is a common demand of the educationist and the parents that education should be useful to life. A mathematics teacher can find very useful data in geography because the idea of quantity enters everywhere in his study. We always study in quantitative terms the topics on population, production and distribution of animals, crops, minerals and the volume of trade. Again, geography problems may be used for mathematical and algebraic lessons. Sometimes a geographical solution must be sought for work in graphs. Similarly, knowledge of geometry lays down a strong foundation for surveying and cartographical work in geography. The geography students have to draw maps and diagrams at every step to illustrate his points. besides, the teacher too employs graphs, charts and statistical diagrams as the means for teaching geographical facts. Naturally these can be best understood with knowledge of mathematics.

c) Approaches of curriculum construction: Concentric, Topical and Regional.

Concentric Approach

In this approach the topics will find a place in different classes of different years of a course in a progressive manner. The content will be included from simple to complex as the pupils understand the content according to capabilities that present in chronological and mental ages.

The concentric approach is a way of organizing a curriculum by laying out basic concepts, covering other related material, and then circling back around to the basic concept and filling in more complexity and depth.

Instead of life science, earth science, physics, biology and chemistry being separated and studied in sequence, each year's curriculum revisits the sciences studied earlier.

It's believed that starting with fundamentals that are then regularly revisited, built on, deepened and broadened each time leads to a better understanding of a subject's interconnections.

The organization of curriculum using concentric approach is useful in primary and secondary school levels.

Merits-

1. It proceeds from ‘simple to complex ‘and ‘whole to part’.

2. Greater opportunity for revision of topic.

3. It takes into consideration mental growth of the pupil.

4. Continuity can be maintained.

Limitations-

1. Repetition is sometimes cumbersome. Some facts are repeated again and again.

2. The presentation lacks novelty and freshness.

3. Less appealing and fails to arouse interest.

4. Pupil develops a sense of familiarity without the fullness of knowledge.

Topical Approach:

Topical arrangement means that a topic should be finished entirely at one stage. It takes the topic as a unit. Topical arrangement requires that easy and difficult portions of a topic should be dealt with at one stage only which is psychological.

In topical approach all relevant material is covered in linear fashion and concepts are not revisited.

In this system the topic which is dealt with earlier receives no attention later and so there is every likelihood of its being forgotten

They are introduced with a view to make the teaching of the topic complete and thorough. Hence topical method demands that a topic once taken should be finished entirely.

This is not much useful for lower classes.

Merits-

1. Integrated knowledge is imparted to the pupils.

2. In-depth, thorough knowledge of the topic.
3. Pupil’s interest and motivation is sustained.

4. Correlation of subjects.

5. This approach can be adopted according to the age, ability of the students.

Limitations-

The main defect in the topical method is that it introduces in the curriculum a largeness of irrelevant material for which the pupil finds no time and no immediate need or the use of which cannot be appreciated by the pupil at that stage.

Regional Method

- **Theme of regions**-
  A basic unit of geographic study is the region, an area on the earth’s surface that is defined by certain unifying characteristics.
  The unifying characteristics may be physical, human or cultural. In addition to studying the unifying characteristics of a region, geographers study how a region changes over times.
  Using the theme of regions, geographers divide the world into manageable units for study.
  Herbertson gave impetus to this method by dividing the whole world into broad climatic regions.
  Herbertson based his classification on climate and vegetation. His classification is of great value in sub- dividing the continents and in analyzing the factors which influence human activities.

Those countries which lie within these climatic divisions may further be divided into structural zones.

Procedure

The following is the most common procedure-

1. Location, structure, relief, drainage system and climate are first taken in a serial order and then pupils are led through the biography of the region.
2. Distribution of minerals and their exploitation in the development of industries are dealt with. This is followed by a study of population and its distribution, means of communication and location of towns.
3. The region is studied in relation to other regions of the world.

It is desirable to proceed from region exhibiting the simplest to the most self-contained human life. The advance of human civilization on earth must be stressed. Modern regional analysis is carried out on the basis of studying the region from the light of striking features or personality or problem of that particular region. Ex. Regional study of Asia- "Region with very high Population."

The distribution of relief climate, natural vegetation, natural resources and transport development has a relationship on the activities of people is aimed at in the ,modern approach.

In teaching geography, the modern approach enhances the taxonomy of the educational objectives. It ensures the acquisition of knowledge and power of analysis , synthesis , application and map skill at high level.

By regional method we mean 3 things-

1. The whole world is studied by dividing it into natural regions.
2. Each continents or country or district is studied with regards to structure, relief, climate , vegetation , minerals and life of man.
3. A region is considered as one which has a striking feature, phenomena or a common problem.

- **Conclusion**-

-To sum up, the whole world is to be studied , it is done through the natural regions.

-The regional method lends itself to independent study and it can be resorted to individual methods of teaching.

- The regional approach enables the students to identify a region and gives opportunity for students' involvement in the actual learning process.

UNIT 4 TEACHING -LEARNING RESOURCES

a. Importance and uses:

1) Globe:

The Importance of Globe-

1. **Globes help children understand where they live, where other places in the world are located, as well as learning the unique shape of the Earth.** Although globes have been used as teaching aids for quite some time, interactive globes have become a mainstay in many elementary classrooms. These interactive globes can electronically identify certain regions and provide relational understanding to many locations. Interactive globes incorporate technology to answer questions and provide information, allowing for an immersive experience for teacher and student alike.

2. Globes Allow for the Understanding of Relevance and Perspective

When children have access to schools, it will be one of the few times in their young educational careers that they will see their world from a different perspective. Globe maps provide much more than just the simple locations of habitats, forests, and unique topography; but allows students to sense that they are part of something much larger and vast than their home, neighbourhood, or school. They will be able to see that they are part of a larger world, which will install desire to learn more about their planet, the star that it orbits, and other terrestrial bodies in the solar system.

3. Globes Helps with Comprehension and Problem Solving

Reading the maps on a globe allow students to forge their reasoning and problem-solving skills. The right map will allow students to track distances. Children can also use globes to formulate routes and travel destinations. This helps constructs self-sufficiency and confidence when formulating solutions.

4. Globes Help Children Grasp Geography

Depending on the grade, a globe is their first lesson in geography. Globes are versatile - they can be used in any grade, and are relevant in many fields of learning. A globe will allow students to learn about different countries, including the formation of bodies of water, mountain ranges, natural resources, and the effect that the climate has on different locations. Geography is more than just the physical formation on Earth, it also familiarizes students to the workings of a compass rose, keys and titles that help with directions.

5. Bridging Culture With Globes

A globe can conceptualize the different locations of students and learners. You can underline the importance of diversity by allowing children to point to their place of heritage on the classroom globe, fostering a sense of commonality between students. Students can also reinforce writing skills by comparing features of different land masses, average temperatures and average rainfalls of different locations. Because there is a myriad of maps, students can organize and classify information, which is a useful skill set for all academic topics and subjects.

Uses of Globes in Teaching Geography

A globe is a real necessity, science it is the true model of earth. It is essential in all stages of Geography teaching. It emphasizes the physical unity of the world and shows how one part is related to all the rest. Its value in showing the relations of the continents and oceans, the direction of one part of the world from another, the climate and vegetation distribution over the world, the earth's movement, day and night, the seasons, the latitude and longitude goes without any question.

A Geography Room or the Geography Laboratory must have a globe. It is a small model of our big earth. In fact, a globe is the only correct representation of the earth in miniature, almost in every respect. The varieties of world maps that we commonly use are inaccurate in certain aspects. And as such, a globe should be large enough to be seen clearly by each pupil. For the class use, globe should be as large as 19" in diameter and as small as 4" in diameter for personal use.

Truly speaking, a globe is indispensable for geography teaching. That is because, it always conveys the impression that the earth is round, and it is revolving round its axis. Globes should be kept and use in order to remove the wrong impressions created by the constant use of flat maps about the shape of the earth, the parallels of latitude and meridians. It goes without saying that globes serve to illustrate the oneness of the world and to teach pupils what meridians and parallels of latitude are and why there are differences in the time of day.

On a globe are marked the chief features of the earth, viz. the continents, countries, islands oceans lakes, rivers, mountains etc. to show their relative size, situation and distance. Similarly, the lines of latitude and longitude, the Equator, the Tropics of Cancer and Capricorn and the Arctic and Antarctic circles are also shown on bold lines.

There are various types of globes, made of wood, plastic, plaster or rubber. Some of them have smooth surfaces, while others are moulded to show the continents and the depth of oceans. Some globes might have slate surface on which it is possible to draw in chalk. Only by the help globe, the spherical form of the earth can be represented. On that account, it should be used frequently especially in junior classes to make them understand the exaggerations the wrong notions provided by the constant use of flat wall-maps. It is impossible to obtain a clear picture of the earth by using only a flat map of the world. Flat maps also are very necessary, but globes must be used in order t9 see clearly what the maps are meant to represent.

II) Atlas

An atlas is a collection of maps; it is typically a bundle of maps of Earth or a region of Earth.In addition to presenting geographic features and political boundaries, many atlases often feature geopolitical, social, religious and economic statistics. They also have information about the map and places in it.

Some types of atlas maps.

(i**) Physical maps** show the arrangement or the distribution of mountains, hills, uplands, lowlands, rivers and so on.

(ii) **Political maps** show areas with their political and administrative boundaries.

(iii) **Climatic maps** show the distribution of temperatures, rainfall, pressure, winds, climatic regions, etc.

(iv) **Historical** empires and historical sites, for example. Olduvai Gorge.

(v**) Economic maps** show the distribution of chief crops, animals, industries, roads, mines, etc.

Uses of Atlas maps

(a) They are maps drawn on small scales, therefore easy to carry.

(b) They show whole countries, continents or even the world on a single sheet of paper or page.

©They show generalized information. They do not include or show a great amount of detail as shown in topographic maps.

(d) Atlas maps may be drawn on one map and include and show the distribution of many things such as crops, minerals, roads, railways, towns, relief, vegetation and many others. Such details may be shown by the use of colors, signs and symbols.

(e) Atlas maps ate simple, easy to read and interpret. They are easy to draw or to reproduce.

(f) They are useful for describing the distribution of many things found on the earth's surface or showing certain selected features such as physical, political, historical or economic features.

(g) They are useful for showing generalised information on large or small areas.

III) Models

The term **'model'** has been defined differently by different geographers.

In the opinion of Skilling (1964), a model is "either a theory, a law, a hypothesis, or a structured idea. Most important, from the geographical point of view, it can also include reasoning about the real world (physical and cultural landscape) by means of relation in space or time. It can be a role, a relation or an equation".

In the opinion of Ackoff, "a model may be regarded as the formal presentation of a theory or law using the tools of logic, set theory and mathematics".

According to Haines-Young and Petch, "any device or mechanism which generates a prediction is a model". Accordingly, modeling, like experimentation and observation, is simply an activity which enables theories to be tested and examined critically.

Most of the geographers of the post-Second World War period have widely conceived models as idealized or simplified representation of reality (geographic landscape and man-nature relationship).

Importance of Model:

Geography is a discipline which deals with the interpretation of man-nature relationship. The earth—the real document of geographical studies—is however, quite complex and cannot be comprehended easily. The earth's surface has great physical and cultural diversity.
In geography, we examine location, landforms, climate, soils, natural vegetation and minerals' spatial distribution and their utilization by mankind which lead to the development of cultural landscape. Moreover, geography is a dynamic subject as the geographical phenomena change in space and time.

The subject matter of geography, i.e., the complex relationship of man and environment can be examined and studied scientifically by means of hypotheses, models and theories. The basic aim of all models is to simplify a complex situation and thus render it more amenable to investigations. In fact, models are tools which allow theories to be tested. A more restricted view of models is that they are predictive devices.

Use of Modelling in Geography:
Geographers are interested in making laws and theories in their discipline like those in physical, biological and social sciences. Model is a device for understanding the vast interacting system comprising all humanity and its natural environment on the surface of the earth. This is of course not attainable except in a highly generalized manner.

Modelling in geography is, therefore, done due to the following reasons:

1. A model-based approach is often the only possible means for arriving at any kind of quantification or formal measurement of unobserved or unobservable phenomena. Models help in estimations, forecasts, simulations, interpolation and generation of data. The future growth and density of population, use of land, intensity of cropping, migration pattern of population, industrialization, urbanization and growth of slums may be predicted with the help of such models. These are very useful in the forecast of weather, change of climate, change in sea level, environmental pollution, soil erosion, forests depletion and evolution of landforms.

2. A model helps in describing, analyzing and simplifying a geographical system. Locational theories of industries, zoning of agricultural land use, patterns of migration and stages of development of landforms can be easily understood and predicted with the help of models.

3. Geographical data are enormous and with every passing day these data are becoming more and more difficult to understand. Modelling is undertaken for structuring, exploring, organizing and analyzing the obtained enormous data through discriminating pattern and correlation.

4. Alternative models can be used as 'laboratories' for surrogate observation of systems of interest which cannot be observed directly, and for experimenting and estimating the effects and consequences of possible changes in particular components as also for generating future scenario of evolution and end states of system of interest.

5. Models help in improving the understanding of causal mechanism, relationships between micro and macro properties of a system and the environment.

6. Models provide framework within which theoretical statements can be formally represented and their empirical validity then put under scrutiny.

7. Modelling provides linguistic economy to geographers and social scientists who understand their language.

8. Models help in the building of theories, general and special laws.

IV) Travelogues

A **travelogue** is the detailed description of writer's perceptions, impressions and comments about attractions of places, as they travel from place to place.
It's the journal which provides the insight of writer's feelings, experiences. It can be of forms but with sole idea is providing glimpse of the events occurred or it can include a day-to-day description of experiences during the trip.
A travelogue can also be termed as literature of recorded facts, literature of recorded impressions and feeling during travel.
Early travelogues were highly individualized, written on blank book or paper to chronicle the adventures of the traveler. Such writings only contained experience of a journey seen through the eyes of the traveler himself, containing anything encountered on the trip such as what a person ate, what a person saw, notable features, culture, civilization and monuments.

Uses of travelogue

Travelogues were used to provide the general public with a means of observing different countries and cultures since the late 19th century.
Travelogues are considered to be a form of virtual tourism or travel documentary and were often presented as lectures narrating accompanying films and photos.

V) Aerial photographs

Aerial photography is a technique to acquire images from an aircraft flying at altitude. It is very different from satellite imagery.

Aerial photography plays an important role in exploration technology. Someone can map a very larger area in very less time and cost. Aerial photographs are 40% overlaps, so they are pretty much accurate. Exposed features can be easily recognized, and interpretation is also quick.

Aerial photography is used in cartography (particularly in photogrammetric surveys, which are often the basis for topographic maps), land-use planning, archaeology, movie production, environmental studies, power line inspection, surveillance, commercial advertising, conveyancing, and artistic projects.

Applications of Aerial Photography

In Archaeology

As discussed earlier, in archaeology aerial photography is ideal for locating lost monuments and tracking features, especially those that are not visible at ground level, those that are under the soil and cannot be seen on a field walk and those that can only be seen under certain conditions. They are usually discovered through any of the following (8).

Crop Marks and Parch Marks: Seen in summer, crop marks are signs of a subterranean feature that show up as irregularities in the pattern of crops. Growth of the crop might be stunted due to extant remains such as stone foundations, or they might be higher than the surrounding crop due to underlying water systems such as dried up drainage channels or long-gone artificial water features such as fishponds. Parch marks occur in areas of particularly dry summer. In some conditions, the crop may simply be a different colour. Parch marks differ in that they are discolouration's in the crop as a result of prolonged drought. Areas where ground water dries up quickly and areas where there may be more groundwater will show up clearly. Caution is advised when interpreting both crop marks and parch marks as the anomalies may be archaeological, geological, or due to variations in soil and ground water courses. Modern pipes may also flag a false positive for features of interest.
Soil Marks: Best studied in winter when no crops are growing, or grasses have large died off, both rainy and dry conditions are conducive to picking out buried features. Typically showing up as darker areas, they can indicate underlying stonework, the outline of prehistoric features such as barrows and cursus monuments, and ditches. The same issues above apply - they could be natural or modern features.

Low Profile Monuments: From the ground they may seem like natural bumps in the ground or be so slight as to be barely perceptible. From the air, their appearance is far more revealing. On their own they may or may not look like anything important but if accompanied with the above, can appear more significant.

In Urban Studies

Urban development and the history of urbanism is a growing niche of landscape studies which has a wide range of uses through history and archaeology, the history of cartography, the history of commerce, sociology and even for modern urban planning. Town developers need to study the impact of expansion and development of urban centres on the landscape and the impact on the environment (19). New facilities (for example a new sports stadium) will require a rethink of the infrastructure and the impact that the new facility will have on people living in the area - will we need to build more houses? Upgrade the roads? Will this affect protected areas? Aerial photography taken at low levels is vital to examining the existing infrastructure (9).

In Climate Change

We all know about the effects of climate change on global temperatures. These global changes are reflected everywhere, and societies and communities are seeing changes to their local environment. If it isn't river beds drying up, droughts getting longer, wetter seasons getting wetter and the reduction of inland lakes drying up completely, one of the most practical applications is tracking of invasive species into water bodies (17) that just a few years ago would not have provided an adequate environment for those species. Researchers keep vital records in changes over seasons and years to track local effects of climate change and risks to local ecosystems. Localised aerial photographs will highlight the die-off of certain vegetation, or the increase of invasive species.

In Other Earth Sciences

They can also be used to study the process of natural changes, such as variations in soil and geology over time as well as changes to the underlying ground that leads to disasters such as landslides. Not quite as useful to geologists due to the relative expense and difficulty in interpretation compared to archaeological applications, aerial survey nevertheless has uses and benefits and the historical record for changes to the natural landscape is vital to understanding how the landscape may change in future. Annual rainfall, whether lower or higher than normal, can have far-reaching consequences and it is this where geology's interests in aerial photography are most important.

IV) Satellite Imagery

Satellite images are one of the most powerful and important tools used by the meteorologist.

They are essentially the eyes in the sky. These images reassure forecasters to the behaviour of the atmosphere as they give a clear, concise, and accurate representation of how events are unfolding. Forecasting the weather and conducting research would be extremely difficult without satellites. Data taken at stations around the country is limited in its representations of atmospheric motion.

It is still possible to get a good analysis from the data, but because the stations are separated by hundreds of miles significant features can be missed. Satellite images aid in showing what cannot be measured or seen. In addition, the satellite images are viewed as truth. There is no chance for error. Satellite images provide data that can be interpreted "first-hand".

Uses of satellite imagery

Satellites images give a good representation of what is happening at every point in the world, especially over oceans where large gaps in data occur.

Satellite images gives a much better understanding as to how the atmosphere is behaving and greatly improves forecasting accuracy.

Another use is as a spatial frame of reference for assisting the planning and coordination of global change research.

The second use is as a basis for information derivation through data processing and analytic procedures employed as part of the research methodology.

Satellite image products can assist the planning and coordination of global change research by facilitating the design of research strategies and the implementation of methodologies that contribute to a global understanding of human dimensions activities.

For implementing studies at local and regional scales, satellite images provide a consistent basis for promoting Uniform Research Methods.

For presenting the results of human dimensions studies, satellite images enable the development of useful Knowledge Transfer Products.

VII) Map

Map is a diagrammatic representation of an area of land or sea showing physical features, cities, roads, etc.

A map is a symbolic depiction emphasizing relationships between elements of some space, such as objects, regions, or themes. Thus, "map" became the shortened term referring to a two-dimensional representation of the surface of the world.

Map Reading & Interpretation

A map is a portion or part of the features of the earth's surface drawn to scale on a plane surface such as paper, card, plastic, cloth or some other material. Or a map is a representation on any plane surface of the features of part or portion of the earth's surface drawn to scale.

Essentials of a map

A map must have the five essentials: -

(i) A title – This is used to tell us what the map is about.
(ii) A key –This is used to identify and interpret the signs and symbols used on that map. For e.g. Mountains, hills, plateaus, plains, lakes, rivers, seas, oceans and shape of coast lines or artificial features are roads, railways, cities, towns, dams and other structures built by man.

(iii) A margin –This is used to bound the area shown by the map
(iv) North direction – To indicate the north direction on a map
(v) Scale –To show the relationship between the distance on that map and that of the ground. A scale is the relationship or ratio between the distance on map and the true distance on the earth's surface.'
The uses of scale:
(i) Helps map interpreter to calculate distance, area and computation of
other facts.
(ii) Helps contractors, engineers to design appropriate plans for bridges,
railway lines etc.
(iii) Helps economists and geographers.

(vi) Location
The geographic location in a map may be shown by using:-
(i) Compass bearing.
(ii) Grid reference.
(iii) Latitude and longitude.
(iv) Political and administrative boundaries.
(v) Use of place names.

Uses of Map.

Maps are one of the most important tools researchers, cartographers, tourists, students and others can use to examine the entire earth or a specific part of it.

In simple words maps are pictures of the earth's surface. They can be used as general reference to show landforms, political boundaries, water bodies, and the positions of cities.

A map gives a minute depiction of a very large space. It acts as a guide in places which we have never visited before. They give us the distance in two places, mountains, rivers, railway station, airport, and shapes of places or destinations.

With a map, one does not have to depend on anybody for local directions. It acts as direction finder for a very small price.

b) Characteristics of Geography textbook

Introduction:

In the teaching-learning process, the text-book occupies an important place. There is a saying "As is the text-book, so is the teaching and learning". A good text-book can even replace class-room teaching. The geography text-book should aim at aiding the pupils in the development of their personalities, in

developing open mindedness, developing appreciation and understanding of nature and not merely stuffing their minds with facts.

Characteristics of a good geography text-book :

1. <u>The author</u>: A good text-book is judged, at face, by the author, his qualification and experience.

2. **<u>Mechanical features of the text-book:</u>**

- The print and paper used and the binding of the text-book should be attractive. It should be hard and durable.
- The printing should be clear, legible and appropriately spaced.
- The book should be well-illustrated with maps, diagrams, sketches and pictures.
- The size of the print, the language and experiments discussed should suit the age of the child and standard of the child.

3. **<u>The subject matter-its nature and organisation:</u>**

- The subject-matter should be developed as far as possible in psychological sequence. Care must be taken of the mental growth and interest of pupils.
- There should be consistency of the subject-matter and the text-book should satisfy the objectives of science teaching.
- Each chapter should begin with a brief introduction and end with a summary.
- Subject-matter should lead to the inculcation of scientific attitudes, disciplinary and cultural values.
- Each chapter should contain assignments at the end.
- Headings and sub-headings are given in bold letters.
- Each text-book should contain detailed Table of Contents and an index.
- The language of the book should be simple, clear, lucid, geographically scientific and precise. The English equivalents of the terms should be always given in brackets.
- Examples in the text-book should be given from local environment and from life experience.
- During the treatment of science subject in the text-book, care should be taken to see that it is correlated with other subjects like craft, social environment and physical environment.

c) E- RESOURCES: Meaning and significance of GIS, computer based online and offline resources

Meaning and significance of GIS

Definition of GIS.

A geographic information system (**GIS**) is a system designed to capture, store, manipulate, analyse, manage, and present all types of geographical data. In other words, data that is in some way referenced to locations on the earth. Coupled with this data is usually tabular data known as attribute data.

The key word to this technology is **Geography** – this means that some portion of the data is spatial. In other words, data that is in some way referenced to locations on the earth.

Attribute data can be generally defined as additional information about each of the spatial features. An example of this would be schools. The actual location of the schools is the spatial data. Additional data such as the school name, level of education taught, student capacity would make up the attribute data.

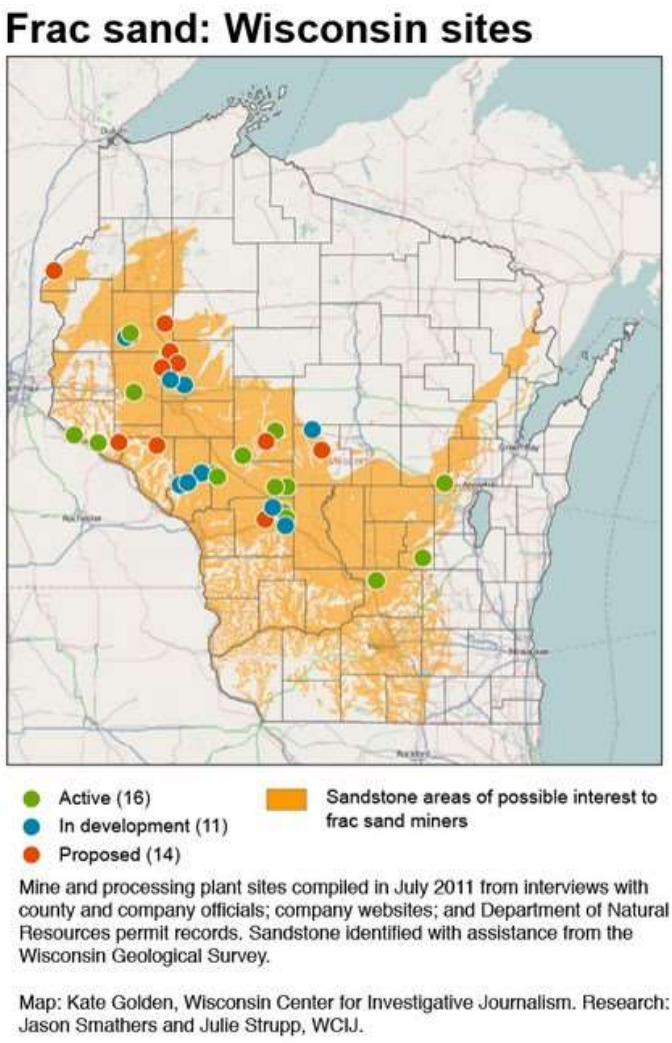
It is the partnership of these two data types that enables GIS to be such an effective problem-solving tool through spatial analysis.

GIS is more than just software. People and methods are combined with geospatial software and tools, to enable spatial analysis, manage large datasets, and display information in a map/graphical form.

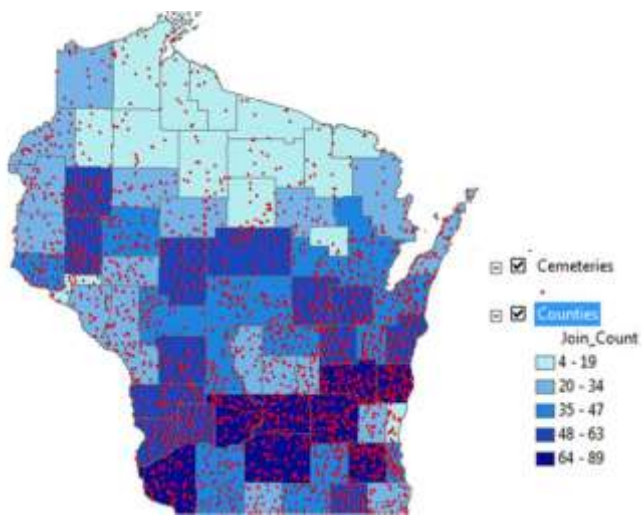
What can we do with GIS?

GIS can be used as tool in both problem solving and decision making processes, as well as for visualization of data in a spatial environment. Geospatial data can be analyzed to determine (1) the location of features and relationships to other features, (2) where the most and/or least of some feature exists, (3) the density of features in a given space, (4) what is happening inside an area of interest (AOI), (5) what is happening nearby some feature or phenomenon, and (6) and how a specific area has changed over time (and in what way).

1. **Mapping where things are.** We can map the spatial location of real-world features and visualize the spatial relationships among them. Example: below we see a map of frac sand mine locations and sandstone areas in Wisconsin. We can see visual patterns in the data by determining that frac sand mining activity occurs in a region with a specific type of geology.



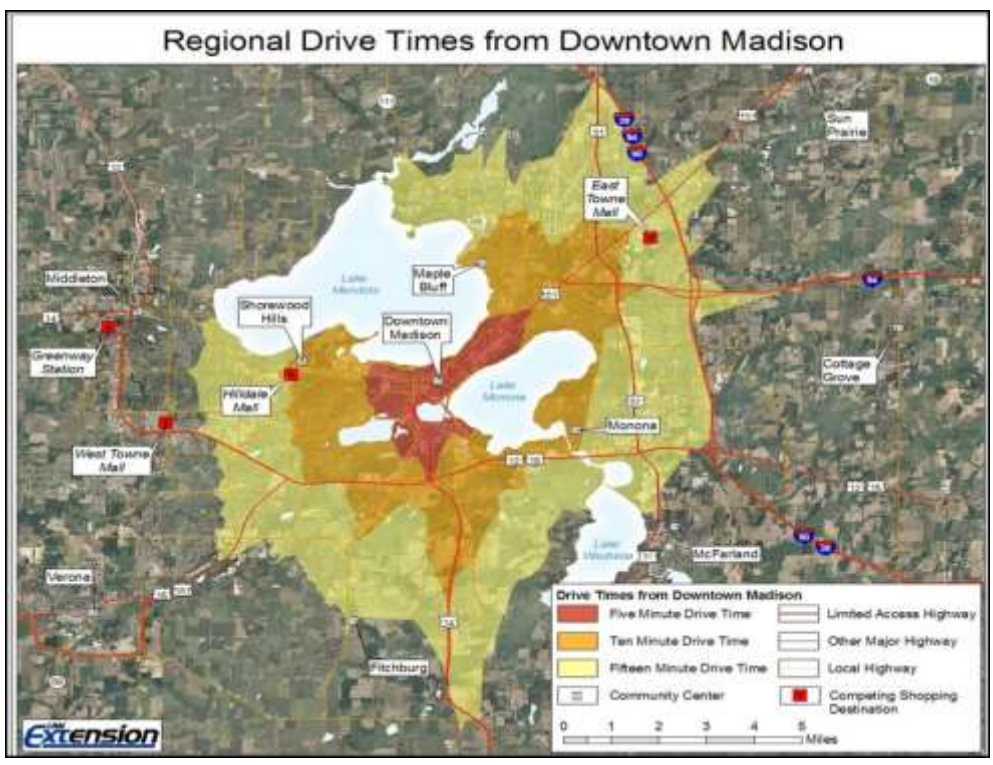
2. **Mapping quantities.** People map quantities, such as where the most and least are, to find places that meet their criteria or to see the relationships between places. Example: below is a map of cemetery locations in Wisconsin. The map shows the cemetery locations as dots (dot density) and each county is color coded to show where the most and least are (lighter blue means fewer cemeteries).



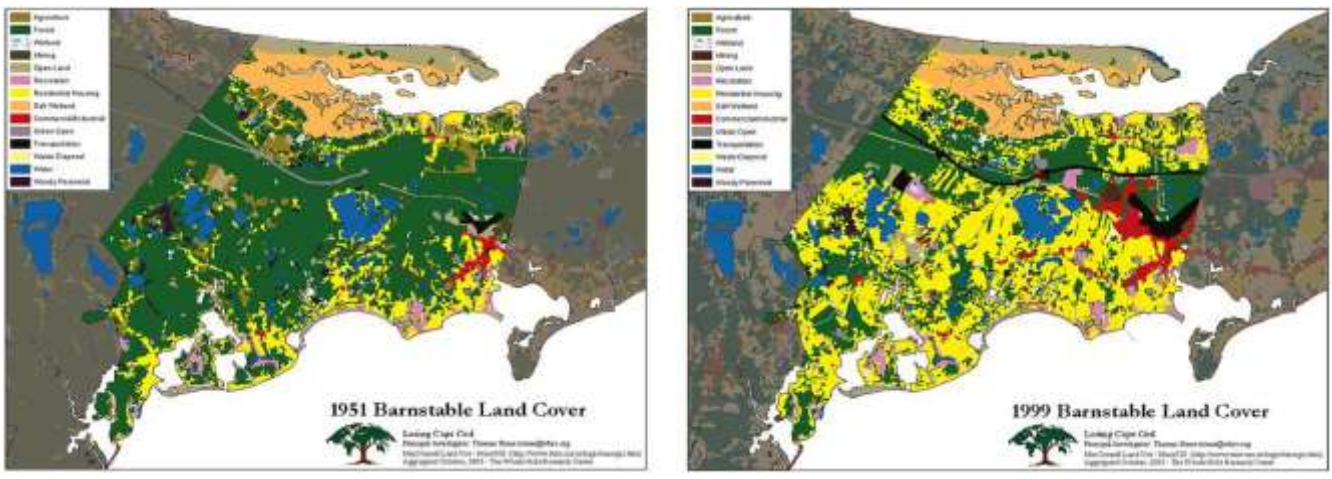
3. **Mapping densities.** Sometimes it is more important to map concentrations, or a quantity normalized by area or total number. Example: Below we have mapped the population density of Manhattan (total population counts normalized by the area in sq. miles of census tracts.)

4. **Finding what is inside.** We can use GIS to determine what is happening or what features are located inside a specific area/region. We can determine the characteristics of "inside" by creating specific criteria to define an area of interest (AOI). Example: below is a map showing a flood event and the tax parcels and buildings in the floodway. We can use tools like CLIP to determine which parcels fall inside the flood event. Further, we can use attributes of the parcels to determine potential costs of property damage.

5. **Finding what is nearby.** We can find out what is happening within a set distance of a feature or event by mapping what is nearby using geoprocessing tools like BUFFER. Example: below we see a map of drive times from a central location in the City of Madison, WI. We can use streets as a network and add specific criteria like speed limit and intersection controls to determine how far a driver can typically get in 5, 10, or 15 minutes. (Map courtesy of UW Extension)



6. **Mapping change.** We can map the change in a specific geographic area to anticipate future conditions, decide on a course of action, or to evaluate the results of an action or policy. Example: below we see land use maps of Barnstable, MA showing changes in residential development from 1951 to 1999. The dark green shows forest, while bright yellow shows residential development. Applications like this can help inform community planning processes and policies.



Computer based online and offline resources

Learning resources:

Learning resources are texts, videos, software and other resources that teachers use to assist students to meet the expectations for learning defined by curriculum.

Need and importance

- To help to enable better understanding of geography subjects.
- To make concept clear.

- To create interest in geography subject.
- To frame the geographical attitude.
- To inculcate geographical values.
- To cultivate the life skills through geography.
- To make students a global citizen.
- To make students civilized human.

Online resources:

- geographical web sites.
- Social networking sites.
- Google earth, google maps.
- You tube videos.
- Photo sharing sites-panoramio, flicker, picasa etc
- Images, Articles, Documents, Graphs, Facts and Figures

National Geographic

National Geographic has several lesson plans for all ages, from elementary school through high school. Each lesson focuses on a core topic and features various objectives for students to work toward accomplishing. Each one also details what type of learning students engage in and what teaching style is necessary to execute the lesson in the classroom.

Use of ICT during the daily lesson should focus on modelling geographical concepts and strategies for the whole class, or smaller groups, and should aim to raise standards in geography. The National Curriculum for geography, makes specific reference to how ICT can be used to support teaching and to motivate young people's learning. Schools do not need to buy a large amount of software to support the teaching and learning of geography. What they do need to do is to make sure that they have a range of targeted applications available that can be used by different year groups during geography lessons.

Use ICT to model geographical ideas and strategies, demonstrate, explain and question, stimulate discussion, invite predictions and interpretations of what is displayed, and ask individual pupils to give an instruction or a response. As the examples here demonstrate, ICT can also be used effectively in plenary sessions to 'model' what pupils have been engaged in, allowing them to explain what they have learned and how they have worked out their answers.

- National Oceanic and Atmospheric Administration (NOAA) KS3 - A2 The NOAA's website covers weather, satellites, climate, oceans and coasts as well as other areas of research. It contains contemporary news articles, downloadable resources and animations. There are also classroom activities (in the Science, Service and Stewardship section), images and extensive web links.
- The Met Office KS3 - A2 Provides geography teachers with clear, up-to-date teaching and learning material. The site provides live and archived weather data from the local to the global scale. (Thus, data from a meteorological station reasonably near to the school can be related to local conditions.) The site also has a virtual Curriculum Learning Centre, a virtual Teacher-training Centre, and contains numerous other resources.
- Global Eye KS3 & 4 This online resource is intended to supplement the excellent magazines that have been sent to many UK schools. The focus is on development issues, but it can be used in a range of topics, from tourism to the impact of humans on the environment.

Offline resources:

- **Softwares-**3D quake, Stellarium, Simulation of geographical phenomena, spreadsheet, encyclopaedia etc.
- Educational CDs-Curriculum based, knowledge based.
- CAI -developed by teachers, researchers etc.

Multimedia Tools in Geography Teaching

21st century's classroom teachers have several smart and innovative tools in their teaching. Now teachers are capable to make learning easy and interesting by using several digital tools in education. Let's talk about some innovative ideas in Geography teaching.
In Geography teaching modern teachers have many opportunities for powerful presentation of their lesson plan in their classroom. Many multimedia instructional products and suggestions are available for classroom teaching as well as learning online. teachers can opt any one of them like TV, computer, projector, online games or any audio video medium to explain the lesson. In many countries television sets are provided for schools. Television is a smart T.L.M. for the classroom. Students learn by many ways. Teachers can use documentary film or video film in the classroom to teach better. In last few years this program was introduced in many schools. There were some ready-made lesson plans to be demonstrated within the classrooms. That was the example of use of technology integration in education. Here we are discussing some digital tools in Geography teaching in 21st century modern classrooms.

- **GIF Images**

GIF images are also a very effective tools in teaching Geography. By GIF images students can learn by interesting and easier ways.
The **Graphics Interchange Format**, better known by its acronym **GIF.**
Stands for "Graphics Interchange Format." GIF is an image file format commonly used for images on the web and sprites in software programs. Unlike the JPEG image format, GIFs uses lossless compression that does not degrade the quality of the image. However, GIFs store image data using indexed color, meaning a standard GIF image can include a maximum of 256 colors.
Different GIF images can be prepared and collected for classroom presentations. Many educational websites provide various GIF and multimedia resources. That can be used by teachers.
Multimedia tools are very interesting, and they are helpful to make a good learning environment. They are also useful to develop a creative atmosphere.

Mapping: Learning Maps By Digital Way

Many multimedia programs are available on internet like join the parts of a map by the use of cursor. Many education websites provide online learning games for learning maps.

Many educational websites provide various online multimedia learning and teaching resources. Online educational games are one of the best examples of "Online IT multimedia education". These games are very useful for student.

Many interactive multimedia online learning games and lesson plans are very helpful in teaching and learning. Now students can learn much more about maps by multimedia tools on internet. Teachers of smart-class can arrange such type activities as a funny game.

UNIT 5 : METHODS OF TEACHING AND GEOGRAPHY TEACHER

a) Methods (Meaning, Procedure, Merits and Demerits)

A method

- There are various ways to teach geography. A method of teaching geography is a strategy that is effective at all stages of learning
- The five geographic skills include –
    1. **Ask** – geographic questions
    2. **Acquire** – geographic information
    3. **Arrange** – geographic information
    4. **Analyse** – geographic information
    5. **Answer** – geographic question
- These skills enable students to do geography, these skills also advance the classroom activities from note processing of facts to the highest thinking skills. Thus making cognitive experience.
- In daily classroom practices, (**Ask**) before reading the book to the class, the teacher can guide the student in thinking geographically.
- (**Acquire and Arrange information**) students with the help of teacher locate, gather and process information from a variety of primary and secondary sources. Teacher can make the students use the graphs in the book to answer the questions or teacher can convert information to tabular format and ask students to create their own graphs.
- (**Analyze geographical information**) teacher can make students use tables and graphs to observe and interpret geographic trends and relationships. Students can study the map for geographical patterns or commodities e.g. which state grow wheat and cotton? Etc.
- (**Answer geographic questions**) here students apply generalization to solve geographic problems and make reasoned decisions. Present geographic information in the form of both oral and written reports accompanied by maps and graphics. Finally, students use methods of geographic inquiry to acquire geographic information to draw conclusions and make generalizations.

Merits of 'A' Methods:

1. Develops higher thinking skill and cognitive development
2. Creates curiosity among students
3. Teacher and student work together mean learner is also included in teaching leaning process.
4. Enhance creativity
5. Develops Analytical skill

6. Students is involved in learning by doing activity applying knowledge to solve similar geographical related problems in classroom condition.

Limitation of 'A' Methods:

1. It is time consuming
2. Needs trained teacher having good content knowledge
3. Demands lots of geographical resources like maps, books, atlas etc which can not be affordable by underprivileged school
4. This method is very difficult for slow learners
5. Not all the topic of geography can be taught through this method
6. Helps in development of cognitive and psychomotor domain but not in affective domain

Project method

Explain steps, advantages and limitations of project method. Add a note on role of teacher in project method along with criteria of a good project.

Introduction:

- Project method accomplishes main objective of education i.e. learning by doing.
- In this method students are involved in some purposeful activity.
- Project method was propounded by Sir John Dewey.
- According to Stevenson- project method is problematic act which is completed in natural setting.
- Ballard states that project is a bit of (piece) real life which is experienced in school.
- Kilpatrik defies project as a whole hearted purposeful activity done in a social setting.

Criteria of a good project:

- Project should be purposeful and related to life.
- Experience gained from project should be fruitful i.e. objectives of the project should be achieved.
- Freedom should be given to students to work on their own.
- Teacher should just supervise and guide the project.
- Project should be economical.
- It should be adequately challenging- neither too complex nor too simple.
- It should be feasible to students; they should be able to do it without the help of their parents.

Steps involved in Project method:

1. Providing a situation.
   Teacher should provide a situation which may create some appropriate problem for students that they may find challenging and interesting to solve.

2. Selecting and proposing.
   - Students should be allowed to select a project.
   - Project should be acceptable to all.
   - It should be related to syllabus.
   - It should be manageable by students.

3. Planning.
   - Planning is important for success of the project.
   - Detailed planning of the project should be done under the guidance of the teacher by the students.
   - During planning, duties of project should be assigned to every group member.

4. Execution of project.
   - Student should collect information regarding different aspect of their project.
   - There should be good co-ordination among group members.
   - Teacher should supervise the project.
   - This is the longest step in the project.

5. Evaluation.
   - Project is reviewed by teacher and student from time to time.
   - Check whether objectives of projects were achieved or not.

- See the positive and negative points after completion of project.

6. Recording.
    - Students should keep complete record of their work i.e. topic, minutes of meeting, duties assigned, problem occurred and their solutions, evaluation reports.

Advantages:

- Project method is a psychologically sound method as it is based on learning by doing, law of exercise, law of readiness.
- It helps in developing critical thinking and reasoning ability.
- It is possible to correlate different subjects through project method. Eg: Preparing model of digestive system- correlation of science and arts.
- Students can work at their own speed, place and execute their project.
- This method develops problem solving and scientific attitude among students.
- It inculcates dignity of labour among students.
- This enhances social relationships and co-operation among students.
- They get a chance to experience a piece of real life through this method.
- It is democratic as the students have full freedom to select their own project.
- Since students do the project on their own, the knowledge is retained for a longer time.

Limitations:

- This method is time consuming as the whole syllabus cannot be completed by this method.
- It could be expensive as it can add financial burden on students and their parents.
- Lot of expectation re kept from the teachers; they are expected to be an encyclopaedia, which is not possible at all times.
- Due to project method practical knowledge is clear but theoretical knowledge is not focussed.
- All projects are practically not possible in classroom or school environment.
- It is also not possible if teacher-student ratio is high.
- This method demands ell trained, experienced and knowledgeable teachers.
- If curriculum is very vast there is no scope for project method.
- Current examination systems do not have place for project method.

Role of teacher:

- Teacher should be a guide and active partner.
- Teacher should provide opportunity to slow and shy students to contribute in the project.
- Teacher should create democratic environment during project.
- Teacher should have thorough knowledge of students and their projects.
- They should be good and impartial supervisors.

Field Visit

1) Everything cannot be learnt in classroom setting .

2)Excursion and visits to places of scientific interest provide students opportunity of direct experience.

3) Now learning becomes more accurate and meaningful.

4) Field visit is a planned visit which is always outside, classroom.

Definitions

1) A visit to a factory, farm factory or museum made by students and teachers for purpose of first-hand observation.
2) A trip by student to gain first-hand knowledge away from the classroom , as to a museum, factory , geological area , or environmental of certain plants and animals.
3) A field trip is a visit to a place outside the regular classroom which is designed to achieve certain objectives which cannot be achieved as well by using other means.

So, field visit is a first- hand knowledge outside the class.

Steps of organisation of field visit

Planning:

1) Visit or excursion should be planned well in advance.
2) Visit should be to the place of scientific interest.

3) Discuss the place of visit with principal and school management.
4) In advance take permission of visit tentatively from owner, director/curator.
5) Plane for date, time, schedule, travel route arrangement of transport vehicle, expenditure to be borne by student etc.

Preparation:

1) Student should be prepared for the visit
2) They should know objective of the visit.
3) Student should know what the should observe type of information they should record.
4) Planning and making small groups and group leader and divide the work among groups.
5) Ask students to bring necessary things prepare the list requires as per priority.

Execution:

1) During visit teacher should act as supervisor.
2) Teacher should continuously provide instruction to students in order to maintain discipline.
3) Avoid any mishap and to accomplish objectives of visit.
4) One can arrange for resource person or guide during field visit.

Making report:

1) Make a report on what things were observed during the visit.
2) What students learned.
3) Attach photographs to the report.
4) Report should be written in formal language-concise and precise.
5) At last attach evaluation report.

Evaluation:

1) After visit, teacher and student should evaluate visit in terms of objectives of field visit.
2) Student and teachers should share their experiences (good and bad).
3) They should find out the lackeness in the visit and find the reason behind it.

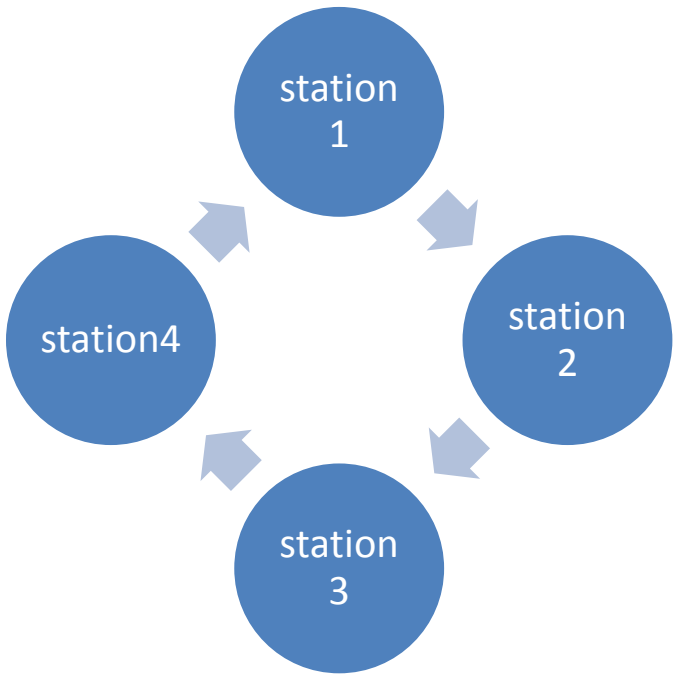
Importance:

1) Students get first hand and direct information and experience. Example student learns about radio in chapter sound. This can be enriched by visiting radio station.
2) Students are able to co relate school life with outside world. Example students use notebooks so take them to Navneet factory.
3) They create situation which helps to develop spirit of scientific enquiry.
4) Field visit provides actual sources, material for study.
5) Student get traveling experience which itself teaches a lot.
6) People learn planning, cooperation and learn spirit.
7) They learn to take responsibilities and discharge their duties.
8) It helps to gain concrete experience.
9) It helps to inculcate scientific attitude logical reasoning, critical thinking.

Co-operative learning Techniques

Gallery walks

- Gallery walk is a discussion technique that gets students out of their chairs and into a mode of active engagement
- The method is beneficial to students and is highly flexible. It can be scheduled in 15 minutes or for several class periods for students. It is a chance to share thoughts in a more intimate, supportive setting.
- For the teacher or instructors, it's a chance to gauge the depth of students understanding of particular concept and to challenge misconceptions.
- Steps to conduct gallery walk



- The instructor prepares several discussion questions. Question can gauge knowledge and comprehension or higher order thinking skills.
- Questions are posted on different "stations" on classroom walls placed on piece of paper on desks in different locations around class or typed on different computers.
- At each posted question a student reviews what previous group have written and adds new contents.
- After a short time, the teacher says "rotate", the group then rotates clockwise to the next station, rotation continues till all posted questions are addressed.
- As students discuss questions the instructor can circulate around the classroom clarifying questions, gauging students understanding and notes down the misconceptions in students understanding before the end of the exercise so Gallery walk becomes valuable tool for formal assessment.
- When the group returns to the station where it started, the group synthesizes comments and makes an oral report to the class. This stage of Gallery walk is a great chance for involving entire class in discussion and to address misconception.

Merits and Demerits of Gallery Walk

Advantages/Merits of Gallery Walk

1) Students interact and synthesize the concepts, making learning more effective than in a typical classroom environment.
2) Develops higher order thinking skills.
3) Removes boredom – students are encouraged to move around without having to sit in one place and makes learning interesting.
4) Students understand different perspective of the same topic.
5) Develops team building and listening skills.
6) Gallery walk can be used to understand previous knowledge of the students.
7) Students are encouraged to use apt language and terminologies of the subject, improving their knowledge on the discipline.
8) Gallery walk is beneficial to kinaesthetic learners.

Disadvantages/Demerits of Gallery Walk

1) A few students in the group may not actively participate in the knowledge construction.
2) Some students prefer to learn individually and hence may not participate in discussions.
3) The evaluation is complex.
4) This method is costly.
5) Appropriate room space is needed.
6) Introvert students will feel out of their comfort zone.
7) In gallery walk, it is hard to hold students accountable.

Think-Pair-Share

Think-pair-share (TPS) is a collaborative learning strategy where students work together to solve a problem or answer a question about an assigned reading. This strategy requires students to

(1) Think individually about a topic or answer to a question; and

(2) Share ideas with classmates.

Discussing with a partner maximizes participation, focuses attention and engages students in comprehending the reading material.

When to use?	Before reading	During reading	After reading
How to use?	With small groups		Whole class setting

Why use think-pair-share?

- It helps students to think individually about a topic or answer to a question.
- It teaches students to share ideas with classmates and builds oral communication skills.
- It helps focus attention and engage students in comprehending the reading material.

How to use think-pair-share

- Decide upon the text to be read and develop the set of questions or prompts that target key content concepts.
- Describe the purpose of the strategy and provide guidelines for discussions.
- Model the procedure to ensure that students understand how to use the strategy.
- Monitor and support students as they work through the following,

T : (Think)

- Teachers begin by asking a specific question about the text.
- Students "think" about what they know or have learned about the topic.

P : **(Pair)**

- Each student should be paired with another student or a small group.

S : (Share)

- Students share their thinking with their partner.
- Teachers expand the "share" into a whole-class discussion.

Merits

- Total involvement
- Generates a lot of ideas quickly
- Small groups can have quality discussions
- The personal interaction motivates students who might not generally be interested in the discipline.
- You can ask different kinds and levels of questions.
- It engages the entire class and allows quiet students to answer questions without having to stand out from their classmates.
- You can assess student understanding by listening in on several groups during the activity, and by collecting responses at the end.
- The fluid nature of group formation makes this technique very effective and popular for use by instructors of large classes.
- Full class discussion is generally more fruitful after a think-pair-share and throughout the semester as the frequent use of such activities generally improves student comfort levels and willingness to participate throughout a class period.

Demerits

- Can be very noisy
- puts time pressure on some

Examples of think-pair-share activities

One extension of think-pair-share is write-pair-share, in which students are given a chance to write down their answer before discussing it with their neighbor. You may wish to collect written responses from each student or each pair before or after discussing the answer. This can be particularly useful for questions where students would benefit from drawing graphs or using specific formulas in order to synthesize information.

KEY COMPETENCES OF A GEOGRAPHY TEACHER

In an effort to improve the quality of human resources, education plays a very important role, because education is the figure of teachers in building a nation. Thus the field of education is the field that became the backbone of the implementation of national development. The quality of education is determined by integral improvement of all educational components such as teacher quality, uneven distribution of teachers, student curriculum, facilities and infrastructure, facilities and adequate infrastructure, a conductive learning atmosphere and supported by government policy.

Teachers are one of the critical success factors of learning that has a great responsibility in managing learning that includes planning, organizing teaching materials, use of tools and learning methods and assessment of learning outcomes. Therefore, teachers are required to improve their professionalism so as to create an educated human who have high quality life skills. Shaping and developing a teacher's professionalism is not an easy task, it takes time and a continuously process and sustainable so that teachers have the ability and skills according to his profession. This professional development program, not just the teacher's responsibility, but become part and responsibility of society, schools and government.

Speaking of teacher competence, standards set about a Geography Teacher includes:

1. Master the nature of scientific structure, scope and geography object.
2. Distinguish geographical approaches.
3. Mastering geography material widely and deeply.
4. Shows the benefits of geography subjects.

Geography learning is an event that is directed to the achievement of geography teaching objectives, teaching geography has the purpose of understanding the phenomena of the natural environment and life on earth, characteristic of region unit and problems faced as a result of mutual influence between humans and their environment. To achieve the purpose of teaching geography, a geography teacher is required to have a high ability in formulating goals, selecting geographic material as the subject of the matter in accordance with the objective, and has the ability to utilize and use all aspects that support the achievement of the purpose of teaching geography. Geography lessons are very important because they are the causal and spatial relationships of people with the environment.

REQUIRED SKILLS AND KNOWLEDGE OF A GEOGRAPHY TEACHER:

SKILLS

1. Speaking - Talking to others to convey information effectively.

2. Instructing - Teaching others how to do something.

3. Learning Strategies - Selecting and using training/instructional methods and procedures appropriate for the situation when learning or teaching new things.

4. Reading Comprehension - Understanding written sentences and paragraphs in work related documents.

5. Writing - Communicating effectively in writing as appropriate for the needs of the audience.

6. Critical Thinking - Using logic and reasoning to identify the strengths and weaknesses of alternative solutions, conclusions or approaches to problems.

7. Active Listening - Giving full attention to what other people are saying, taking time to understand the points being made, asking questions as appropriate, and not interrupting at inappropriate times.

8. Active Learning - Understanding the implications of new information for both current and future problem-solving and decision-making.

9. Complex Problem Solving - Identifying complex problems and reviewing related information to develop and evaluate options and implement solutions.

10. Monitoring - Monitoring/Assessing performance of yourself, other individuals, or organizations to make improvements or take corrective action.

KNOWLEDGE

1. Geography - Knowledge of principles and methods for describing the features of land, sea, and air masses, including their physical characteristics, locations, interrelationships, and distribution of plant, animal, and human life.

2. Education and Training - Knowledge of principles and methods for curriculum and training design, teaching and instruction for individuals and groups, and the measurement of training effects.

3. Mathematics - Knowledge of arithmetic, algebra, geometry, calculus, statistics, and their applications.

4. Vernacular Language - Knowledge of the structure and content of a vernacular (non-English) language including the meaning and spelling of words, rules of composition and grammar, and pronunciation.

PROBLEMS FACED BY GEOGRAPHY TEACHERS IN INDIA

Teaching is not considered as one of the most sought after career in India; hence the primary challenge is to raise the status of teaching as a career choice. This stems from the general perception that people harbour about this profession which is, that anyone can become a teacher as it takes minimal skill.

Academic Challenges:

Teachers don't have a voice and have no say about educational policy. The concept of motivated teacher is also a flawed one because most of them feel that a motivated teacher is one who is regular to school every day, follows official protocols blindly without questioning and if necessary provide information that management team wants. The real focus shifts from student learning outcomes to complying orders as fount fit by the administrative department relegating teachers to a mere stature of puppets who have no voice. The responsibility falls on teachers to churn the best out of the non performing students and it is their responsibility to raise a student's performance and to equate it with the rest of the class if the student joined the school in the end of the academic year. VIP treatment and excessive molly cuddling is expected from a teacher which also includes malpractices like promoting students even when they have failed in major academic subjects to retain admissions and prevent financial loss. This is really detrimental to a teacher's moral who believes and practices idealism, honesty and fair practice.

Financial challenges:

As mentioned above, teaching is one of the most underpaid jobs barring some schools which strictly adhere to pay commission of scales. Even appreciation in form of financial incentive is not a very popular culture. These problems are not restricted to government or low cost private schools but also to posh international schools were the average annual fee structure of a student ranges from Rs.6 Lakhs to 10 Lakhs. The school management and board of directors mostly prefer cheap labour. Again this is because of the low professional status of teachers in our society. The teaching profession is dominated by women and we see very less men who prefer being a teacher. Women are not considered as the primary breadwinner of a family and hence their compensation is abysmally poor compared to the fee structure that these international school charge.

Infrastructure:

The purpose of teaching geography is very relevant and satisfying to learners' lives but the instruction aspect is very challenging which necessitates intervention specifically the need for the utilization of innovative and more effective teaching strategies. The teachers' perceived difficulties of teaching Geography. There is a lack of technical facilities, map rooms and equipment. There is the issue of sufficient equipment to be used in geography education. Teaching Geography demands a regular use of instructional resources and more reference books and materials. Teaching Geography requires conduct of activities such as interviews, collection of samples and recording of information; but there is a lack of necessary infrastructure in teaching Geography in India.

C) Continuous Professional Development of a Geography Teacher: Need and Ways

Need and awareness of Professional Growth

Meaning of Professional Growth

When a teacher learns new techniques and new knowledge then he/she grows in his/her experience of teaching and subject knowledge. This is known as *professional knowledge.*

A number of programs have been started by different agencies to help professional growth and development of science teachers. These keep the teachers updated about new developments, researches, concepts and methods of teaching science.

Number of opportunities are provided by the Government in different programs.

AVENUES OF PROFESSIONAL GROWTH FOR Geography TEACHERS

1.Seminars

2.Conference

3.Workshop

4.Refresher Course

5.Study Groups

6.Professional Writing

7.Summer/Winter Institution

1. SEMINAR

A seminar is a meeting where a group of people discuss a problem or topic. A seminar is a class at a college or a university in which the teacher and a small group of students discuss a topic at student level.

Example: A teacher will participate in a seminar like

a) New teaching strategies in Geography

b) Issues in Geography education

c)Career prospects

2.CONFERENCE

A formal meeting of people with a shared interest, typically one that takes place over several days.

Example: All Geography teachers meet in a conference and intensively discuss recent teaching-learning processes of geography or teaching science for differently abled, enhancing Geography teaching.

3.WORKSHOP

A meeting at which a group of people engage in intensive discussion and activity on a particular subject or project.

Example: A workshop for geography teachers on geography teaching aid, improvised software of virtual laboratory and simulation.

4. REFRESHER COURSE

A refresher course is a training course in which people improve their knowledge or skills and learn about new developments that are related to the job they do.

Example: A refresher course on environmental education for geography teachers.

5. STUDY GROUPS

Various study groups at district and state level. Teachers can share their experiences on different activities.

Teaching-Learning process and difficulties faced during teaching.

Acquire professional efficiency (experience.)

Follow problem-solving approach.

Participate in refresher courses, acquire latest development in geography field.

6. PROFESSIONAL WRITINGS

Teachers are encouraged to study various publications by NCERT.

This may include writings regarding new methods, techniques of teaching science or problems faced while teaching.

7. SUMMER/WINTER INSTITUTE

Refresh and update the knowledge of geography teachers.

A) Unitary Institute

Held once a year to update the teachers in the areas of science and new technologies.

B) Sequential Institute

Training given to the best 5 teachers about the concepts of methods of geography. They are prepared as resource portions.

C) Specialists

Organize all India level improvement/implementation of textual material for training college.

D) Project Technology Institute

Organized for secondary school teachers on regional basis, provides training in mapping work, practical's and workshops.

NEED FOR PROFESSIONAL GROWTH

- Teachers should have updated knowledge to answer students' queries
- Should be acquainted with the latest strategy of evaluation
- Learn new technologies and teaching methods
- Develop scientific attitude, temper and inculcate these values in the students
- Need to acquire knowledge, ability, skills to organize science clubs, geography excursions etc
- Teachers need competency in motivating students, learning geography and applying knowledge of science in daily life
- Acquire skills of guiding students for projects and vocational guidance
- Teachers should participate and contribute in revision of geography curriculum, textbooks, teaching aids, etc..

UNIT 6: Current Trends in Teaching of Geography

a) Geography club:

Meanning/Concept:-

Geography Club is run by students & teachers of school,for students, to organize & conduct various geography related program which shall help to develop higher order of thinking in geography among students.

Objectives/Significance/Importance/Functions:-

- To develop interest of geography among students.
- To explain daily life correlation of geography in our lives to students.
- To provide opportunity of hobby class, discussion forum, workshop etc.related to geography among students.
- To recognize lectures or talk of expert in geography for students.
- To show movie, documentary, filmstrip related to any geography topic.
- Club should function as learning resource of geography for students.
- To develop various teaching-learning resources.
- To organize projects, experiments, discussion etc.
- To make available books & information about various geographers.
- If any student is weak in geography, club can provide him/her per mentor who is good & interested in geography.
- To explain importance of geography subject in general studies paper of **UPSC** or **MPSC** exams.

Organization of Geography club :-

In order to accomplish objectives of geography club a committee is organized & rule & regulation of the club as formed by the committee members.

Office bearers of Geography club are as follows,

Chairperson :- 1) Plans & executes the program. 2) Conducts meeting in controlled manner.

Secretary :- 1) Maintains minks of the meeting. 2) Report writing of activities of club. 3) Public relation work. 4) Letter communication. 5) Plan to help society or school through club.

If work load is more, committee can have post of assistant – to secretary.

Treasurer:- 1) Collection of membership fee. 2) To keep accounts. 3) to purchase required material. 4) To gather funds.

Librarian :- 1) To purchase books for club. 2) To keep record of issue & return of books. 3) To keep collection of online & offline articles in newspaper, magazine, websites etc.

Broadcasting officer :- 1) Advertisement of activities / programs of club. 2) Write notice or put notice related to club activities of Board or notice board respectively. 3) Display news or photos related to geography on notice board. 4) To work on managing of club.

Advisor :- 1) Senior geography teacher should be appointed advisor. Sometimes related geography teacher can also be appointed on this post.

Patron :- School principal shall be patron of the club.

Activites of the Geography club :-

- To keep record or daily weather, temperature & rainfall.
- Visit geographically important places.
- To write or put information about geographically important events on board.
- To organize geography related exhibition.
- To organize talks / lectures of experts on geography topics.
- To collect geographically important specimens.
- To organize discussion or debates of geography subject.
- To organize essay or drawing competition on geography topic.
- To prepare maps or models, instruments from simple material which is easily available & also eco friendly.
- To undertake geography related project.
- To display documentary, films on geography.
- To collect cuttings from newspaper related to geographic events.
- To celebrate **Geography Day**.
- To conduct / organize workshop to develop geography related ___.
- To participate in geography related competitions like quiz , essay, etc.

Importance / Significance of Geography Club :-

- To develop interest in geography among students.

- To develop curiosity among students about their surroundings & environment & to think on it through geographical approach.
- To develop observation & creativity of students.
- To make aware of own's responsibility.
- It helps to gain knowledge through co-operative tearing.
- Student free / leisure time can be used in constructive way.

b) Constructivism and the Five E's

Constructivism. The philosophy about learning, that proposes learners need to build their own understanding of new ideas, has been labeled constructivism. Much has been researched and written by many eminent leaders in the fields of learning theory and cognition. Scholars such as Jean Piaget, Eleanor Duckworth, George Hein, and Howard Gardener have explored these ideas in-depth. The Biological Science Curriculum Study (BSCS), a team whose Principal Investigator is Roger Bybee developed an instructional model for constructivism, called the "Five Es".

Briefly, this learning approach as it relates to science can be summarized as follows: Learning something new, or attempting to understand something familiar in greater depth, is not a linear process. In trying to make sense of things we use both our prior experience and the first-hand knowledge gained from new explorations. Initially, our curiosity about a science topic is stirred, as we are stimulated by some intriguing phenomena, such as a rainbow, we've noticed. We poke, probe, inquire about and explore this phenomena until it becomes less mysterious. As we begin to investigate new ideas we can put together bits and pieces of prior explorations that seem to fit our understanding of the phenomena under present investigation. In the case of the rainbow, for example, we may realize that there is an association between sunlight and water vapor. Piece by piece we build knowledge. Sometimes when the pieces don't fit together, we must break down old ideas and reconstruct them. (Following a rainbow to find a pot of gold doesn't work easily!) We extend our conceptual understanding through discussions and creative efforts. We validate our theories as we solve problems. In our rainbow example, we may realize that if we position ourselves properly, we can create a rainbow by spraying a water hose in sunlight. The clarity we've gained in understanding a concept gives us the ability to apply

this understanding to new situations and new mysteries. It is a continuous and a very individual process. We bring to each learning experience our developmental level, our personal story and our personal style.

It is up to the teacher to facilitate the constructivistic learning process. The structure of the learning environment should promote opportunities and events that encourage and support the building of understanding

We have used an adaptation of BSCS's model to introduce the pH factor. Our instructional model is called the "Seven Es". Investigations and activities are included under the headings of each E. They are presented to be taught either in sequence or independently, at the teacher's discretion.

Each investigation is designed to stand on its own and be introduced when deemed appropriate.

A convenient format to view constructivism has been defined by Biological Science Curriculum Study (BSCS). In this models the process is explained by employing five "E"'s. They are: Engage, Explore, Explain, Elaborate, and Evaluate.

Engage. In the stage Engage, the students first encounter and identify the instructional task. Here they make connections between past and present learning experiences, lay the organizational ground work for the activities ahead and stimulate their involvement in the anticipation of these activities. Asking a question, defining a problem, showing a surprising event and acting out a problematic situation are all ways to engage the students and focus them on the instructional tasks. If we were to make an analogy to the world of marketing a product, at first we need to grab the customer's attention. We won't have their attention unless they have a need to buy the product. They may be unaware of a need, and in this case we are motivated to create a need.

Explore. In the Exploration stage the students have the opportunity to get directly involved with phenomena and materials. Involving themselves in these activities they develop a grounding of experience with the phenomenon. As they work together in teams, students build a base of common experience which assists them in the process of sharing and communicating. The teacher acts as a facilitator, providing materials and guiding the students' focus. The students' inquiry process drives the instruction during an exploration.

Explain. The third stage, Explain, is the point at which the learner begins to put the abstract experience through which she/he has gone /into a communicable form. Language provides motivation for sequencing events into a logical format. Communication occurs between peers, the facilitator, or within the learner himself. Working in groups, learners support each other's understanding as they articulate their observations, ideas, questions and hypotheses. Language provides a tool of communicable labels. These labels, applied to elements of abstract

exploration,

give the learner a means of sharing these explorations. Explanations from the facilitator can provide names that correspond to historical and standard language, for student findings and events. For example a child, through her exploration, may state they have noticed that a magnet has a tendency to "stick" to a certain metallic object. The facilitator, in her discussion with the child, might at this stage introduce terminology referring to "an attracting force". Introducing labels, after the child has had a direct experience, is far more meaningful than before that experience. The experiential base she has built offers the student an attachment place for the label. Common language enhances the sharing and communication between facilitator and students. The facilitator can determine levels of understanding and possible misconceptions.

Created works such as writing, drawing, video, or tape recordings are communications that provide recorded evidence of the learner's development, progress and growth.

Elaborate. In stage four, Elaborate, the students expand on the concepts they have learned, make connections to other related concepts, and apply their understandings to the world around them. For example, while exploring light phenomena, a learner constructs an understanding of the path light travels through space. Examining a lamp post, she may notice that the shadow of the post changes its location as the day grows later. This observation can lead to further inquiry as to possible connections between the shadow's changing location and the changes in direction of the light source, the Sun. Applications to real world events, such as where to plant flowers so that they receive sunlight most of the day, or how to prop up a beach umbrella for shade from the Sun, are both extensions and applications of the concept that light travels in a straight path. These connections often lead to further inquiry and new understandings.

Evaluate. Evaluate, the fifth "E", is an on-going diagnostic process that allows the teacher to determine if the learner has attained understanding of concepts and knowledge. Evaluation and assessment can occur at all points along the continuum of the instructional process. Some of the tools that assist in this diagnostic process are: rubrics (quantified and prioritized outcome expectations) determined hand-in-hand with the lesson design, teacher observation structured by checklists, student interviews, portfolios designed with specific purposes, project and problem- based learning products, and embedded assessments. Concrete evidence of the learning proceed is most valuable in communications between students, teachers, parents and administrators.

Displays of attainment and progress enhance understanding for all parties involved in the educational process, and can become jumping off points for further enrichment of the students' education. These evidences of learning serve to guide the teacher in further lesson planning and may signal the need for modification and change of direction. For example, if a teacher perceives clear evidence of misconception, then he/she can revisit the concept to enhance clearer understanding. If the students show profound interest in a branching direction of inquiry, the teacher can consider refocusing the investigation to take advantage of this high level of interest.

Viewing the evaluation process as a continuous one gives the constructivistic philosophy a kind of cyclical structure. The learning process is open-ended and open to change. There is an on going loop where questions lead to answers but more questions and instruction is driven by both predetermined lesson design and the inquiry process

c) Diagnostic Testing and Remedial Teaching

A test designed to identify and investigate the difficulties, inadequate and saps of pupils in specific curriculum areas with a view to helping them to overcome those difficulties through remedial instruction is called diagnostic test

The term diagnostic comprises all activities in measurement and interpretation that help to identify the growth lags and their casual favors for individuals or class.

NATURE OF DIAGNOSTIC TESTING

- Thorndike and Hagen (1970) suggested that a diagnostic test should provide a detailed picture of the strengths and Weaknesses of a pupil in a particular area.
- Any test that yields more than a single overall score is diagnostic.
- Diagnosis has become an essential phase of developing plans of adaptation instruction to individual differences.

DEFINITION OF DIAGNOSTIC TESTING

- A diagnostic test is a test designed to locate specific learning deficiencies in case of specific individuals at a specific stage of learning so that specific efforts could be made to overcome those deficiencies.
- It helps the teachers in identifying the status of learner at the end of a particular lesson, unit or course of learning as to what specific teaching or learning points have been properly grasped by the learners.

IMPORTANCE OF DIAGNOSTIC TESTING

1) To find strength and weakness of individual either on an individual level or class level.
2) To analyze the difficulties of the student in a particular phase of work.
3) To find out the causes & nature of adjustment attitudes, interest motives of students through test interviews, and case studies.
4) To provide remedial treatment to the learner.
5) To help in designing curriculum to capabilities of learner.
6) To make students aware of their strengths, abilities and potentials.
7) To give proper guidance to students.
8) To help them to locate faulty learning.
9) To give suitable references for specialized cases.
10) Follow up is done after providing diagnoses.

THE STAGE OF PREPARATION OF DIAGNOSTIC TEST

1. PLANNING :-

The first step in the construction of a diagnostic test is identification of subject matter areas which are really difficult for the pupils. After selecting areas they should be further divided in to simple teaching point and test items may be constructed for each points.

As for as diagnostic test is concerned it is not very necessary to know the importance of various leaning points. All the learning points have to be covered in an unbroken sequence each learning point should have an adequate number of questions help to identify the areas of weakness.

2. WRITING THE ITEMS

All the forms of questions, essay, short answer and objective type can be used for testing different learning points. However it appears that for diagnostic purpose short answer questions involving one or two steps, be used widely.

Whatever be the form of questions they should in general be easy suitable for average students of that age or grade. The questions have to be specifically related to the learning point and should be such as to throw eight on the weakness of students. The questions should be written in simple language. The scope of the expected answer should be clear to the student.

Questions are dubbed around learning point even when they are of different forms, the learning point are arranged sequentially form simple to complex which ensures that students not have to change their mental sets every frequently. The mode of assembling also helps in finding out the weakness of the student.

3. ASSEMBLING THE TEST

Preparation of blue point may at together be avoided. No rigid time limit need to be specified through for administrative purpose of the limit may be set.

4. PROVIDING DIRECTION AND PREPARATION SCORING KEY:-

A set of instructions clear and precise is drafted. It should also be provided with a scoring key and marking scheme.

5. REVIEWING THE TEST:-

Before printing the test, it should be carefully edited and reviewed. This ensures that any in advert ant errors are eliminated. An analysis of the test testing down learning points with corresponding questions may be presented for future reference.

PREPARING THE SCORING KEY AND MARKING SCHEME

Scoring key is prepared the objective type questions and marking schemes made for the essay and short answers.

The paper setter himself prepare this marking scheme includes.

- Number of points or steps expected in the answer.
- Outline of each point or steps.
- The weight age to each of these

REMEDIAL TEACHING

Teaching or instructional work carried out to provide remedial measures for helping the students to overcome their common or specific weakness or learning difficulties diagnosed through diagnostic test.

STRATEGIES FOR REMEDIAL TEACHING

1. CLASS TEACHING

A particular lesson or unit or topic is repeated on the normal classroom by using special aids or strategies the class as a whole is benefited through such type of remedial teaching.

2. GROUP TUTORIAL TEACHING

Students of the class divided in to homogeneous group called tutorial group. On the basis of their common learning difficulties teacher teach then by using various strategies.

3. INDIVIDUAL TUTORIAL TEACHING

Difficulty of each student is attended individually by using special strategies. In this schedule every learner who feels learning difficulty of one or the other nature is attended individually.

4. AUTO INSTRUCTIONAL LEARNING

This responsibility of overcoming difficulties is handed over to the learners. Self learning self corrections are done by the student. Teacher's also supervises the learning process.

5. AUTO INSTRUCTIONAL LEARNING

In this technique the learners provided with auto correct instructional as self-learning materials and equipment's like programmed learning text books and packages auto learning modules teaching machines and computer assisted programmed instruction.

6. INFORMAL TEACHING

Learning difficulties arise act of lack of interest and non-availability of first and experience are overcome by providing informal teaching situations like excursions field trip etc.

DIAGNOSTIC TESTING AND REMEDIAL TEACHING CYCLE

- Diagnostic testing for knowing the child's weakness and learning difficulties.
- Hypothesizing problem causes for weakness and difficulties.
- Applying remedial teaching for removing these weakness and difficulties.
- Containing the repeat above for process to achieve desired success in removing the diagnosed difficulties and weakness.