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Dimensions of Education

INSIDE

Articles

Research

Thinkers on Education

Dimensions of Education

The Need of Incorporating e-learning in Teacher Education Programs

There is an immediate need to incorporate e-learning in teacher education programs. The students opting for teaching as a profession need to be given wider and extensive exposure to training by e-learning. Through e-learning programs they will not only acquire crucial concepts of philosophy, psychology, sociology and so on but e-simulations and e-games will also give them practical exposure to the school and class environment.

Once they are confident about the various e-learning strategies and processes, they will themselves feel encouraged to teach their students at school using e-learning. Also there is another option for them to take up higher studies or research on computer-based programs. On the role and scope of e-learning to impart training I strongly recommend that e-learning should be incorporated as an integral part of all teacher training programs.

E-learning can work in perfect synchronization with the teacher and the books to give the best to our students. All three of them i.e., e-learning, the computer factor, teacher, the human actor and the books, the printed factor, can strengthen, support and complement each other in imparting holistic knowledge and training.

- Dr. N. B. Kongawad
Editor

Dimensions of Education 7th March 2014 Vol. III Issue. IV

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PROBLEM SOLVING APPROACH IN TEACHING BIOLOGY CONCEPT

✍ **Smt. Jyothi.B.Panth,** Assistant professor, Sree Siddaganga College of Education, B.H.Road, Tumkur.

"Every teacher and educationist of experience knows that even the best curriculum and the most perfect syllabus remains dead unless quickened into life by the right method of teaching and the right kind of teachers".

- Secondary Education Commission

Any teaching procedure centres round three pivotal factors - the pupils, the teacher and the subject. Out of these, the teacher is the most important factor in the teaching- learning process. Since he is the medium who establishes relationship between the pupil and the subject.

The teacher involved in teaching of science is not just handling out facts and information of science and transferring the same to the pupils memory. It is much more than that. Besides motivating and presenting things in an interesting way, the teacher must be able to create situations for the pupils where they have to think, do and reason out. Each pupil must be involved in the learning process, because learning results from the active involvement of the learner.

The teacher and the methods that he adapts to teach plays an important role in the educational system. Hence in order to execute his task of teaching, teacher need to adapt appropriate methods, approaches, techniques, devices and teaching aids so that it is accessible,adaptable to accomplish the set objectives.

A biology teacher who has to teach the concept of "Osmosos" to 8th standard students will have the following objectives to be achieved by the end of the class:-

he wants the pupil to recall the meaning of osmosis, relate the types of solution with that of the direction of movement of molecules, give reason for the movement of only the water from lower concentrated solution to higher concentrated solution, explain the concept of osmosis, reason out for gargling by using high concentrated salt solution during throat infection, develop skill in conducting the experiment related to osmosis.

If the above said objectives need to be accomplished by the Biology teacher, he can adapt problem solving approach, which is defined by **Maier as "a process of combining the essentials of two or more isolated experiences."**

According to Welch problem solving is defined as **"an integrated activity of perception, memory, recall, association, generalisation and re-construction of ideas."**

When we analyse these definitions, in order to find out a solution or an answer to a problem, we need to possess reflective thinking, which demands the insight on the part of the learner to recall and combine in an meaningful way all those experiences that he had in his life time and those which are now required to become the source to find the solution. This will help him to arrive at a generalisation and adding a new experience to his bank of knowledge.

Before using this method teacher should see whether pupils have the capacity to recall the past experiences which are relevant to the problem, possess verbal information organised in proper way and should activate and use the cognitive strategies that the learner possess. Besides this teacher should have the knowledgethat there will be gap between the entry behaviour and the terminal behaviour of the students, the learner should feel that knowledge and capacity possessed by them are insufficient to solve the problem and the teacher should be in a position to give verbal instructions and directions to the students activities which will decide the success of the problem.

As other methods, even problem solving method also has its steps to be followed by the teacher. The steps of this method are -

1. Clear exposition of terminal performance
2. Assessing the students entering behaviour
3. To relate all relevant concepts and principles
4. Giving verbal instructions for students thinking
5. To verify the students learning by requesting to give full demonstration of the solution of the problem.

Let us incorporate these steps to teach the concept of Osmosis.

1. CLEAR EXPOSITION OF TERMINAL PERFORMANCE

According to John Dewey "a problem well put is half solved" thus for which he can motivate the students by developing inquisitiveness in their minds. Here in this step learner has to identify the problem and the teacher must clearly explain or describe what the students must do in order to bring out the solution to the problem.

In order to make the students to learn the concept "osmosis", teacher can begin his class by giving the students the dry raisins and also soaked raisins to observe. When they observe these raisins a problem will hit into their mind that why do the dry raisin increase in its size when soaked in water ? Which is the physical process involved in it ?

2. ASSESSING THE STUDENTS ENTERING BEHAVIOUR

In this step some concepts and principles are needed for the solution of the problem. Such concepts, principles, laws or any learning experience which will help the student to solve problem are to be assessed at this stage. If the students do not have this entering behaviour they may not be able to solve the problem. Hence, the teacher should see that these behaviours are observed in the learners.

Thus in order to find out the solution to the above sensed problem by the students, teacher should see that they should possess the knowledge of molecules, their size, nature of molecules, types of solution(chemistry), parts of plant cell, functions of different parts of plant cell, types of membranes (biology) and nature of water (physics).

3. TO RELATE ALL RELEVANT CONCEPTS AND PRINCIPLES

Here in this step all the identified relevant concepts and principles must be meaningfully related to get a solution to the problem. This can be achieved through experimentation or demonstration. Even with this demonstration, the students may fail to solve the problem. Under such circumstances it is to be repeated and see that demonstration of the principle to be understood by the pupil.

In the selected problem, demonstration of potato osmoscope experiment should be done following the procedure correctly and students should be asked to observe and relate the concept of movement of water with that of types of solutions taken in the potato scoop and in the beaker and also the role of cell membrane in it. If the students fail to relate these concepts then they should be asked to repeat the experiment and to understand the prinicple behind it.

4. GIVING VERBAL INSTRUCTIONS FOR STUDENTS THINKING

After manipulating and restructuring the concepts and principles, the students are expected to establish the relevant rule, but even after demonstration sometimes the students may not be able to establish relationship between the relevant data. Under such circumstances, the teacher can help the learner by giving verbal instructions and clues in the form of examples and illustrations. These clues will help the learner to catch the idea and thereby arrive at the solution.

Here in this topic consider that the students have failed to identify the semi-permeability nature of cell membrane and to relate it with the movement of molecules, then the teacher can give the clue of sieves of different sized holes used to sieve rice floor, rice and wheat, and here teacher can also make use of the chart showing the higher and lower concentrated solutions seperated by different membranes(permeable, impermeable and semi-permeable membranes) and their by helping the students to relate the concept to arrive at the solution.

5. TO VERIFY THE STUDENTS LEARNING BY REQUESTING TO GIVE FULL DEMONSTRATION OF THE SOLUTION OF THE PROBLEM

This is the last step of problem solving method to confirm their learning. By the time the student reach this stage, they should be in a position to arrive at the solution to the problem that they have sensed in the beginning by giving the complete demonstration of it. If they fail to do this then they have to repeat the entire thing to identify where actually they have gone wrong. Identifying and rectifying it will lead them towards the right solution to their problem.

At this stage the learners involved in the process of finding the solution to the problem that they have sensed regarding "the reason for the increase in the size of the soaked raisin" should help them to know that it has occured due to the movement of water molecules from lower concentrated solution to higher concentrated solution through semi-permeable membrane which is termed as "osmosis" a physical process that occurs between the cells. This they have to demonstrate with the potato osmoscope experiment followed by appropriate verbal explanation.

Even here they will be in a position to exemplify with the observations in their life. Here in this problem they will be in a position to quote the incident of the preliminary measure that we take when we are confronted with the throat infection ie., the reason behind gargling by using high concentrated salt solution when we have throat infection.

Thus by the end of this method teacher will be in a position to achieve all the set objectives. Moreover in this method of teaching the learners will recall and associate those ideas which he has obtained in different subjects in

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THE IMPORTANCE OF SCIENTIFIC ATTITUDE IN SOCIETY

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Before we discuss on scientific Attitude, Let us consider Attitude. What is attitude? Attitude refers to feeling or the opinion developed in the mind out of experience. This can be supported by Thurston and Cave's definition .Attitude is defined as a sum total of man's inclination, feeling prejudice, bias, ideas, fears, threats and convictions about any specific topic.

Attitude is a condition of readiness for a certain type of activity. It is a mental set of the individual which is characterised by predispostion towards objects, persons or events and tendency to act. [Well planned teaching situations, direct meaningful and purposeful activities adequate experimentation, verification etc. build up right attitude, in children]

India being a highly a superstitious society science teaching should always be planned to develop right attitudes. Some characteristics of this are intellectual honesty, objectivity in drawing conclusions, adaptation of scientific procedure, open-mindedness in receiving new ideas to reconsider one's own judgment, spirit of teamwork, self help and self reliance, intellectual satisfaction from scientific pursuits, economy in the use of materials ,honest recording reporting of observation ,faith in cause - effect relationship, pursuing activities with consistency, preparedness to face hardship and difficulties , a sense of dedication , faith in specialists in their respective fields and at the same time a complete rejection of the principle of authority and also an eagerness to know and understand things. All these accumulated characteristics results in scientific Attitude.

NSSE (National Society of the study of Execution) has defined scientific Attitude as "open-mindedness a desire for seeking knowledge and the expectation that the solution of the problem will come through the use of verified knowledge''.

COMPONENTS OF SCIENTIFIC ATTITUDE

Critical mindedness - looks for inconsultancies
Consults a number of Authorities
Challenge the validity of Statements.

Suspended judgment - Recognizes the restriction in Generalizations and theories.

Respect for evidence - looks for evidence to Support or contradict statements Demands interpretations that fit the evidence.

Honesty - Reports all evidences even when It contradicts hypothesis or expectation.

Objectivity - Considers all pros & considers all evidence available.

Willingness to Change opinions - Recognises all hypotheses, generalizations and theories being tentative.
Evaluates evidence which contradicts prediction, alters hypothesis when necessary to accommodate empirical evidence.

Open Mindedness - viewing things broadly
Free from prejudice and bias.

Questioning Attitude - looks for inconsistancies challenges the validity of unsupported statements
asks many questions starting with who, where,
when and How ?.

Tolerance of uncertanity - accepts that there is always some uncertanity
Strives for greater and greater uncertainity

DEVELOPMENT OF SCIENTIFIC ATTITUDE

Scientific Attitudes are habits of mind that guide ones Predisposition to think and act in a certain way when encountering problem solving scenarios.

Inculcation of scientific attitude among individuals is very important. Scientific attitude plays a predominate role in every bodies life. It upholds the life of an individual. At present a big discussion is going on on superstitions even at government level and government is thinking of passing amendment with regard to the eradication of superstitions. But according to us just passing amendment will not help in eradicating superstitions. Besides this some steps are to be taken at school level itself to develop scientific attitude.

The role of teachers and parents is significant in the removal of blind beliefs among people. Many a time people wrong notions about some events like eclipse, acid rain and etc. in all these cases students should be encouraged to analyse the situations to know the scientific reason behind those events instead of thinking that they are false beliefs and also students are to be induced a bent of scientific approach.

TECHNIQUES OF DEVELOPING SCIENTIFIC ATTITUDE

1. Emphasis on wide reading : Curtis believes that wide reading is helpful in developing scientific attitude, students who read more books on science usually develops more scientific attitude than those who read only one text-book. In this contact, teacher should supplement the text-book with other good reference material containing works and biographies of great scientists.

2. Discussions : The teacher can discuss about the various common superstitions prevailing in the country. Healthy discussions, thought provoking Questions, encouraging pupil-panel discussions on various topics helps in developing open-mindedness, Suspended judgment etc.

3. Practical work : A student of science gets many opportunities to develop scientific attitude during his practical work. During laboratory work a teacher can develop in students habits of creative observation, formation of hypotheses, Suspended judgment, conclusions based on evidences etc. students must be allowed to conduct experiments on their own and draw conclusions. This is the most important and relevant stage at the secondary school level and hence carries greatest weightage.

4. Co-currticular activities : Various activities such as organizing science clubs, debates, excursions, projects, making of charts, models, improvised apparatus etc. helps in developing some of the characteristics of scientific attitudes.

5. Personal Example of the Teacher : Students imitate and follow the practice of a teacher. Personal example of the teacher as a man of scientific attitude is perhaps the best way of inculcating scientific attitude among his pupils. It is said that "As is the teacher, so is the student". It is therefore essential that a science teacher should possess and practice the characteristics of scientific attitude in his every day dealings.

By doing all this scientific attitude can be developed among individuals.

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his past learning. In the process of associating the things many questions may fountain in their minds that why only the water will move, why not the solute particles move from its higher concentrated region to its lower concentrated region? Why does the cell membrane will allow only the water molecules to move through it easily? Where else this physical process of osmosis is observed in the nature ?

This attitude of questioning should be instilled in the students so that they can go for discovery of ideas.

This attitude of questioning and discovering will motivate the students to find the answer for which they will observe the parts of the cell which is allowing only the water molecules to pass through it. Then they will come to know that it is due to the nature of the cell membrane, which acts as semi-permeable membrane allows the water to pass through it. This can be made known to the students by giving the sieves of different sized holes, which is used to sieve grains or cereals of different sized and to relate this with the semi permeability of the cell membrane.

Thus this method can be used by the teacher to make the students to understand the concept of "osmosis" by their own by guiding, supervising and facilitating their learning.

This is how we can adapt problem solving approach to facilitate and to accelerate the students to exploit their treasure of knowledge in acquiring the new knowledge and there by filling in them the contentment of discovering the knowledge by their own, which in turn develops confidence in them to take up difficult task. This method will also enrich many skills like observation, experimentation, analysis, interpretation, conclusion etc.. At the end we can summarise that problem solving method helps the teacher to accomplish one of the objectives of education of preparing the students to their life by identifying and nurturing the potentialities.

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DEVELOPING CRITICAL THINKING

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The world we live in is a world that is messay and vexing with several issues and problems. It is a world where people with different ideologies, belonging to different political factions, editors of magazines, periodicals and newspapers keep expressing their views ideas and notions most of which are controversial and argumentative. People in general need to follow a skeptical approach when dealing with information, issues or problems. There is no tool that is as good at detecting manupulation of information, examining issues as problems as critical thinking. The use of critical thinking skill is so ubiquitous that there is no aspect of life where it is not useful, what is attempted here, therefore, is to explain what critical thinking is, why is it important, what dispositions enhance its development, what factors stand as blocks to its nurturing and what techniques and methods are available for its development in the classroom.

The area of critical thinking was delineated by Ennis (1962) as a special domain of human thinking. Ennis reviewed the literature on thinking skills, attempted to identify basic dimensions of critical thinking and proposed the twelve aspects of critical thinking. Ennis has refined his model or taxonomy of critical thinking skills (1985) to include three types of thinking skills and 13 dispositions of critical thinkers. Ennis defines critical thinking as follows: "critical thinking is reflective and reasonable thinking that is focused on deciding what to believe or do"

According Mayer (2002) "critical thinking involves making judgments based on criteria and standards. The criteria often used for this purpose are quality, effectiveness, efficiency and consistency. The standards used may consist of either qualitative or quantitative.

Langrehr (2001) defines that "critical thinking involves judgment about the relevance, reliability, bias, consistency and accuracy of information pertaining to any issue or production". Norris (1985) defines "critical thinking as deciding rationally what to or what not to believe". According to Smith (1990), critical thinking is understanding the meaning of statements, judging ambiguity, judging whether an inductive conclusion is warranted and judging whether the statements made by authorities are acceptable".

COMPONENTS OF CRITICAL THINKING

1. Distinguishing between verifiable and value claims.
2. Distinguishing relevant from irrelevant information, claims or reasons.
3. Determine the factual accuracy of a statement.
4. Determine the strengths of an argument or claims.
5. Determine the credibility of a source.
6. Seeking the truth
7. Weighing the facts
8. Judging the facts
9. Subsequently making decision

NEED FOR THE DEVELOPMENT OF CRITICAL THINKING

Teaching of History is the conclusion of critical insight among seekers of knowledge and wisdom. The four pillars of teaching History is time, place, development and continuity. They have to be an appropriate means of service achieving the desired ends.

1. Historical events have not taken place in vacuum, but spread over a huge span of time like a river never stopped for a long period. Therefore, history has to be understood in the strength of time which is fundamental for scientific nature.

2. Events have taken place at different occasions because history is the drama of evolution from primitive days to modern day scattered all over the globe. Thus, place sense is equally important like the time sense. Time and space function as the two lamps of history for intelligent thinking.

3. Man's evolution is accompanied with social, cultural and other developments. Great personalities have shaped the destiny of mankind with their might morality, Politics, Religion and other tools. Teacher has to highlight these developments from a comparative point of view to enrich intellectual ability of his students.

4. Various Civilizations and cultures pass a continuity which is an evident in great historical works.

5. Critical thinking enable the students to cope with a rapidly changing world.

6. This will help pupils to have an open mind and a non-dogmatic rational behaviour, in addition, critical thinking ability will enable them to be more inquisitive, insightful and humane.

7. It is also necessary to have the free rational and autonomous mind, without the ability to reason

dialectically, students are intellectually, emotionally and morally incomplete.

8. The present day education system has come under severe criticism for its undue emphasis on memorization of textbooks knowledge by students.

9. Critical thinking will enable them to deal efficiently with barrage of information, to make decisions, to solve problems, to make maximum utilization of their resources.

WHAT ARE THE DISPOSITIONS THAT ENHANCE CRITICAL THINKING ?

So far we discussed what critical thinking is and why its development is important. Now, let us look at some of the dispositions in the mind of the thinker that can add to the strength of critical thinking. As Fitzgibbons (1981) states the three kinds of disposition namely; 1. Disposition of thought, 2. Disposition of behavior and 3. Disposition of emotional attachment.

A disposition of thought is a tendency to think in a certain way. A person, for example may have a disposition to be analytical, look for causes and offer reasons for belief. Another person may have a disposition to accept belief uncritically.

Disposition of behavior is a tendency to behave in a certain way. It may exhibit some form of overt behavior under certain condition. Similarly, a person may have the tendency to attach certain emotions to certain things. He may have, for example, the tendency of deriving enjoyment from watching cricket.

Langrehr (2001) makes use of the acronym 'cool' to help us recall the various dispositions that a critical thinker needs to be effective. COOL represents the four dispositions namely;

a. Clear b. Open minded c. Objective d. Loose

Clear : Anyone who wishes to think critically about any issue should have clarity about the issue. To get a clear view, he may ask a few questions to himself. What am I debating here? What do I already know about the issue? What are the different dimensions of this issue? What is the core point? Could it be explained further? Questions such as these would help clarify the issue at hand.

Open minded : A strong critical thinker thinks dialogically rather than monologically. He tries to consider an issue from the other person's point of view. On the other hand, a weak critical thinker is an egocentric. He would keep saying, I'm right and you're wrong. A person who is open minded keeps asking such questions as, "What is your point of view? Why have you taken this point of view? What do you like about my points of view?

Objective : A critical thinker who is strong makes his decisions only after having gathered and studied all necessary data. Conversely, a weak critical thinker makes decisions from the heart. He simply relies on feelings and emotions instead of relying on objective evidence.

Loose : A genuine critical thinker, when he comes to know that he has been functioning from a false assumption, would immediately accept his error. He immediately changes his views on the basis of the evidence. He is so flexible that he would not keep harping on the strings when he realizes he is wrong.

If an individual tries to cultivate these dispositions, as time passes, he would turn out to be a strong critical thinker.

METHODS, TECHNIQUES AND TOOLS OF CRITICAL THINKING

1. Assignment method : It is one of the important methods to develop critical thinking ability. For eg. An assignment on - "Akber the great", depicting his capability - to integrate the country under very odd circumstances.

2. Project method : It helps to promote critical thinking ability in the students. For eg. Project work on "Indus valley civilization" or "National Movement in India". The project can be done in groups, dividing the work to discover the material from books, pictures, scrap books, journals, encyclopedias, charts, atlases, etc.

3. Story telling method : Some historical stories definitely help to promote critical thinking ability. They develop historical imagination, creative training, manual faculties, learning the art of speech and action. For eg. Good stories like Mahabharatha, Ramayana, Bagavad Geetha, Puranas have produced great personalities like Gandhi, Shivaji, Napoleon and others.

4. Source Method : With the help of source method, we will develop critical thinking ability in the students. It develops constructive imagination, sense of reality, improves reasoning and critical judgment for eg. The best topic in this method can be titled as "Shahjhan as a magnificent builder of great buildings". When we want to teach this topic, we can make use of many literary and archeological sources.

TECHNIQUES

Through the teaching of History, the teacher will judiciously make use of visits to Historical places museums, exhibitions, picture halls and art galleries.

TOOLS OF CRITICAL THINKING

De Bono (1994) has devised a number of tools for helping students pickup skill of critical thinking. A few of them are being introduced here to show how they can be used for the purpose of developing critical thinking skills.

1. P.M.I. (Plus, minus and interesting)
2. C.A.F (Considering all Factors)
3. E.B.S (Examine both sides)

4. O.P.V. (Other people's view)
5. A.P.C (Alternatives possibilities and choices)
6. C and S (Consequences and Sequel)
7. A.G.O (Aims, goals and objectives)
8. F.P. (First Priority)

P.M.I. (Plus, minus and interesting) : It is an attention directing tool in which first attention pertaining an issue is directed towards the plus points then minus points and finally interesting points. This tool is used in connection with an issue. For example, students can be asked to do a PMI on the issue, "Each student gets Rs 50/ a week for attending school." Think plus, Minus and Interesting points. As students are engaged in the process, they look at the problem analytically. This forces them to see the issue from different perspectives.

C.A.F (Considering all Factors) : CAF means Considering all Factors that have to be considered in a situation. When we are proposing to buy a second hand car, for instance, is an example where we can apply the CAF. In this case, we need to know all factors like price, previous owners, present owner, mileage, resale value, condition of car, petrol consumption, and condition of the types.

E.B.S (Examine both sides) : This tool is exploratory in purpose and involves a genuine examination of both the sides. EBS is a tool that can be used to throw light on and examine when it comes to the study of such issues as " should smoking be banned in all public places" or " should housewives to be paid for their work, " etc.

O.P.V. (Other people's view) : Is yet another tool form de Bono's Tool Box. This tool involves putting yourselves in the other person's shoes and visualizing the world from the frame of mind of the other person. When we think, generally we are tempted to think only from our point of view. We hardly care to see any issue from the other person's point of view. OPV is intended to give a broader and clearer view of any situation. As a result, the mental map of the situation becomes clearer and more complete and so it can help to find one's way around. Eg: Mr X has the habit of hurling insults at others. Under situations such as the above, if we do an OPV, it will help us arrive at an objective view of the issues concerned.

THE OBSTACLES THAT STAND IN THE WAY OF DEVELOPING CRITICAL THINKING:

Olson and Ames (1972) have noted give obstacles namely;

1. Use of single textbook
2. Halo effect
3. Desire for avoidance of controversy
4. Emphasis on conformity
5. Emotional involvement and response

1. Use of Single Text book : In teaching various subjects, our classrooms generally depend on single textbooks. This total dependence on single textbooks is one of the greatest deterrents of the development of critical thinking skills. When pupils are exposed to one selection of facts and their interpretation, they inevitably stand the risk of accepting them as true.

2. Halo Effect : Many individuals among us have the notion that anything that is printed is true. They give undue importance to the printed page. This illusion makes them insist on their forgone conclusion and desist from making judgment on accuracy:

3. Desire for avoidance of controversy : Issues that are open to controversy are fine means to develop critical ability. Every society has several issues pertaining to ethnicity, race, religion, right, social class, etc. that are highly controversial in nature. As taking up such issues as topic for discussion in the classroom can create a lot of heat and vociferous scenes, administrators and teachers generally avoid them.

4. Emphasis on conformity : People generally feel comfortable when they are working in areas that are familiar to them. Similarly, they have an affinity for things that are traditional. There is the fear of the unfamiliar and the unknown, a lack of readiness to think and act differently.

5. Emotional involvement and response : There is hardly any student who is not under the influence of some prejudice, bias or emotion. When he is under the influence of strong feelings, he cannot indulge himself into thinking.

CONCLUSION

Critical thinking as we have noted, in not merely finding fault with the information we encountered in our day-to-day life. Infact, it is the process of evaluating statements, people, ideas, events, data, arguments and experiments and problems human face in life. It is the type of thinking that evaluates reason. It is not destructive but constructive process. Developing critical thinking skill is highly important in a democratic country like ours so that our students may not end up in dogmatic indoctrination, will develop a mind that is open, flexible and viable, will be more inquisitive, insightful and humane.

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ISSN : 2249-2437 ARTICLE

IMPLICATIONS OF CONSTUCTIVISM FOR SCHOOL PRACTICE

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"As long as there were people asking each other questions,We have had constructivist classrooms.Constructivism, the study of learning, is about how we all make sense of our world,And that really has not changed". Jacqueline Grennan Brooks (1999)

Is the mind merely a tool for reproducing the real world, or does the mind produce its own, unique conception of events and objects? The answer to these two questions may pique the interest of current constructivist research, but it does little to guide the educational practitioner searching for ways to ensure that all students reach their potential. Current efforts at school accountability assume there is a body of knowledge and skills associated with that guides the work of educators.

Today, Constructivism as a view of learning is well articulated in educational literature, and has received much attention especially in schools. There are many traditional or conversational theories of learning before constructivism as a framework emerged.

Origins of Constructivism in writings can be traced to John Dewey (Dewey, 1938; 1963).It also follows the work of Piaget (Gregory, 2004) wherein Piaget demonstrated that children's minds are not empty, but actively process any material they are exposed to, by the mechanisms of accommodation and assimilation.

WHAT IS CONSTRUCTIVISM ?

Constructivism can be described as a metaphor for learning, which emphasizes the aggregation of knowledge by means of a process of building or construction. As both a 'paradigm' and a 'theory' and also as a label given to a set of theories about learning that lie between cognitive and humanistic views, Constructivism can be distinguished into two types :

1. "Cognitive constructivism" which is about how the individual learner understands things, in terms of developmental stages and learning styles, (Piaget, 1971).
2. "Social constructivism", which emphasizes how meanings and understandings grow out of social encounters. (Vygotsky, 1962)

Research shows that constructivist learning is congruent with how the brain learns. There is no argument, and plenty of research to prove, that constructivist education is the best way for learners to learn. Constructivist education is when.....

.....learners actively construct meaning by building on background knowledge, experience and reflect on those experiences.

in other words.....

"Learners are given the freedom to think, to question, to reflect, and to interact with ideas, objects, and others-in other words, to construct meaning." -Brooks and Brooks.

It's "the idea that development of understanding requires the learner to actively engage in meaning-making." - Brader-Araje & Jones (2002)

Constructivism in education today holds two important notions :

1. Its position as the most favored current view of learning and teaching in the teacher education literature.
2. As a theory of learning, its central basis is that (human) knowledge is acquired through a process of active construction.

THE CONSTRUCTIVIST CLASSROOM

A Constructivists Classroom is a Student-Centered Classroom. The student-centeredness of a constructivist classroom is clearly apparent in a reader response approach to literature. Recognizing the significance of the unique experiences that each reader brings to the reading of a selection of literature, the teacher in a response-centered approach seeks to explore the transaction between the student and the text to promote or extract a meaningful response (Rosenblatt, 1978). This places the student in a central position in the classroom since exploring this transaction seems unlikely to occur unless the teacher is willing to relinquish the traditional position of sole authority, thereby legitimating the unique experiences that all members of the class bring to the reading rather than just those experiences the teacher brings. The resulting perception and effect in the classroom is evident in students' recognition that the discussion is a legitimate one involving questions to which nobody knows the answer. It isn't a treasure hunting game where they are trying to guess what is in their teacher's head, but a process that creates meaning and knowledge.

According to Audrey Gray, the characteristics of a constructivist classroom are as follows :

- the learners are actively involved
- the environment is democratic
- the activities are interactive and student-centered
- the teacher facilitates a process of learning in which students are encouraged to be responsible and autonomous

A little comparison chart to make it clearer.

1950s Old-School Classroom	Constructivist Classroom
Teacher directed (didactic dissemination of information)	Learner-centered. Teacher as facilitator - students construct knowledge through critical thinking, manipulative, primary resources, and hands-on activities.
Student works independently.	Student works collaboratively in groups, independently or in partners.
Small parts first. Big idea at the end.	Big idea first. All parts support big idea.
Correct answers are the goal.	Thinking and support of thinking are the goals.
Assessments are tests; separate from learning task.	Assessments are observation, conferences, daily work, port folios and included in learning tasks.
Worksheets, workbooks, basal readers.	Books, journals, real-world situations, workshop approach.
Teacher evaluator.	Self-reflection, student evaluator and teacher evaluator.
Product based learning: All students will learn on demand the same thing at the same time aka. One-size-fits-all approach.	Process based learning: Learners create meaning and context by exploring new ideas and experiences, generating hypotheses, problem solving.
Teacher talks to (at) students; students expected to listen and absorb knowledge.	Teacher-student dialogue through conferring, questioning, and wondering.
Teacher makes all the decisions.	Shared responsibility and decision making.
Students answer questions.Empowered teacher.	Students ask questions. Empowered learner.
Individual learners.	Community of learners.

CONSTRUCTIVIST ASSESSMENT

Traditionally, assessment in the classrooms is based on testing. In this style, it is important for the student to produce the correct answers. However, in constructivist teaching, the process of gaining knowledge is viewed as being just as important as the product. Thus, assessment is based not only on tests, but also on observation of the student, the student's work, and the student's points of view. Some assessment strategies include :

- Oral discussions. The teacher presents students with a "focus" question and allows an open discussion on the topic.
- KWL(H) Chart (What we know, What we want to know, What we have learned, How we know it). This technique can be used throughout the course of study for a particular topic, but is also a good assessment technique as it shows the teacher the progress of the student throughout the course of study.
- Mind Mapping. In this activity, students list and categorize the concepts and ideas relating to a topic.
- Hands-on activities. These encourage students to manipulate their environments or a particular learning tool. Teachers can use a checklist and observation to assess student success with the particular material.
- Pre-testing. This allows a teacher to determine what knowledge students bring to a new topic and thus will be helpful in directing the course of study.

CONSTRUCTIVE STRATIGIES FOR CLASSROOM

Constructivist teaching practices are designed to help students to internalize new information in an endeavor to create new understandings. To a constructivist, learning is more than memorizing material to pass a standardized test. It involves challenging students to develop new cognitive structures leading to more sophisticated meanings. The ability to solve difficult problems depends upon the

knowledge, skills, and strategies an individual owns generally and in a specific domain. Instruction is a developmental process that begins with a student's current level of functioning and moves him or her along a continuum toward expert performance.

Constructionism

- An approach to learning developed by Seymour Papert and his colleagues at MIT in Cambridge, Massachusetts. Papert had worked with Piaget at the latter's Institute in Geneva. Papert eventually called his approach "constructionism." It included everything associated with Piaget's constructivism, but went beyond it to assert that constructivist learning happens especially well when people are engaged in constructing a product, something external to themselves such as a sand castle, a machine, a computer program or a book. This approach is greatly facilitated by the ready availability of powerful 'constructing' applications on personal computers. Promoters of the use of computers in education see an increasing need for students to develop skills in Multimedia literacy in order to use these tools in constructivist learning.
- Reciprocal Learning
- Two teach each other.
- Procedural Facilitations for Writing
- **Critical Exploration :** The two components of critical exploration are curriculum development and pedagogy. In this method teachers find ways to encourage their students to explore the subject matter and express their thoughts on the material.
- **Cognitively Guided Instruction :** Its major premise is that teachers can use students' informal strategies (i.e., strategies students construct based on their understanding of everyday situations, such as losing marbles or picking flowers) as a primary basis for teaching in the elementary grades.
- Problem-based learning
- Cognitive apprenticeships
- Various methods involving collaboration or group work
- Cooperative learning (reciprocal questioning, Jigsaw Classroom, structured controversies)
- Anchored Instruction: Problems and approaches to solutions are embedded in a narrative environment.
- Cognitive Apprenticeship: Learning is achieved by integration into a specific implicit and explicit culture of knowledge.
- **Six features of cognitive apprenticeships :** modeling of the performance, support through coaching/ tutoring, scaffolding, students articulate knowledge, reflection on progress, exploration of new applications. (Woolfolk, 2010)
- **Cognitive Flexibility :** A constructivist approach to curriculum design, in which the learning activities spelled out in the intended learning outcomes are built into the teaching methods and assessment tasks.
- **The Silent Way :** A constructivist approach to foreign language teaching and learning developed by Caleb Gattegno who worked with Piaget before WWII and in the late 1940s.
- **Inquiry- here investigations are guided by questions :** At Yardstick we break them down into discrete sub-questions as scientists must, that can be explored effectively. In pursuing answers, students usually start with free exploration of materials, followed by a discussion of their discoveries. Often new questions arise while students seek answers, leading to additional student-motivated inquiries with materials to reinforce and extend concepts.
- **Multisensory Method -** investigations naturally use multisensory methods, not only to accommodate students with physical and learning disabilities, but also to maximize information gathering for all students.
- **Student-to-Student Interaction -** Most of the Yardstick modules are designed where students work in groups with each member contributing to management, data collection, data analysis, and reporting of results. Individual students' observations and ideas are always incorporated into group decisions. Hands-on Learning, where students collaborate in planning, action, and information processing, gives students opportunities to develop deep understanding and rich, thoughtful interactions with other points of view.
- **Discourse and Reflective Thinking -** Discourse is tremendous exercise for the mind. Have you considered the immense complexity of converting experiences and ideas into words to be spoken or written? An idea or concept must be synthesized from the innumerable bits of stored information, that concept must then be constructed into a string of symbols we call words, and output in a sequence that conveys information. An awesome cognitive process.

In addition to these some following activities were encouraged in constructivist classrooms are:

- **Experimentation :** students individually perform an experiment and then come together as a class to discuss the results.
- **Research projects :** students research a topic and can present their findings to the class.
- **Field trips:** This allows students to put the concepts and ideas discussed in class in a real-world context. Field trips would often be followed by class discussions.
- **Films :** These provide visual context and thus bring another sense into the learning experience.

- Class discussions: This technique is used in all of the methods described above. It is one of the most important distinctions of constructivist teaching methods.

Constructivist approaches can also be used in online learning. For example, tools such as discussion forums, wikis and blogs can enable learners to actively construct knowledge. In the last ten years, many researchers have explored the role computers can play in constructivist teaching. Roger Schank, Seymour Papert and Marcia C. Linn among others have demonstrated that computers often can provide an appropriate creative medium for students to express themselves and demonstrate their acquirement of new knowledge. Online collaboration projects and web publishing have both proved to be an exciting new way for teachers to engage their students. But because constructivism can require extended periods of classroom time and individualized attention to students, some educators have resisted its adoption and continue to support a drill-and-practice approach to learning. Schank and others have responded by arguing that this is merely proof of a faulty education culture in which teaching methods haven't evolved in 100 years, thus proving its obsolescence.

CONSTRUCTIVE TEACHERS

After decades of school reform, a consensus is building that the quality of our nation's schools depends on the quality of our nation's teachers. Policy makers and educators are coming to see that what students learn is directly related to what and how teachers teach; and what and how teachers teach depends on the knowledge, skills and commitments they bring to their teaching and the opportunities they have to continue learning in and from their practice(Feiman-Nemser,2001).

In classrooms today, the role of the teacher needs to change from the traditional role of prescription to that of orchestrator of learning. In the constructivist classroom, the teacher's role is to prompt and facilitate discussion. Thus, the teacher's main focus should be on guiding students by asking questions that will lead them to develop their own conclusions on the subject. Parker J. Palmer (1997) suggests that good teachers join self, subject, and students in the fabric of life because they teach from an integral and undivided self, they manifest in their own lives, and evoke in their students, a capacity for connectedness".

HOW STUDENTS ARE TAUGHT IS EQUALLY IMPORTANT TO WHAT THEY ARE TAUGHT ?

Presenting information and skills to students in relevant contexts increases the likelihood they will be able to transfer the knowledge and skills to real world situations. Learning occurs most effectively in context, and the context becomes an important part of the knowledge associated with the learning. In this context, teachers offer multiple opportunities for students to express what they know in various forms and serve as facilitators, coaches, guides, and mentors, in a type of cognitive apprenticeship.

David Jonassen identified three major roles for facilitators to support students in constructivist learning environments:

- Modeling
- Coaching
- Scaffolding

Modeling : Jonansen describes Modeling as the most commonly used instructional strategy in CLEs. Two types of modeling exist: behavioural modeling of the overt performance and cognitive modeling of the covert cognitive processes. Behavioural modeling in Constructivist Learning Environments demonstrates how to perform the activities identified in the activity structure. Cognitive modeling articulates the reasoning (reflection-in-action) that learners should use while engaged in the activities.

Coaching : For Jonassen the role of coach is complex and inexact. She acknowledges that a good coach motivates learners, analyzes their performance, provides feedback and advice on the performance and how to learn about how to perform, and provokes reflection and articulation of what was learned. Moreover, she posits that coaching may be solicited by the learner. Students seeking help might press a "How am I Doing?" button. Or coaching may be unsolicited, when the coach observes the performance and provides encouragement, diagnosis, directions, and feedback. Coaching naturally and necessarily involves responses that are situated in the learner's task performance.

Scaffolding : Scaffolding is a more systemic approach to supporting the learner, focusing on the task, the environment, the teacher, and the learner. Scaffolding provides temporary frameworks to support learning and student performance beyond their capacities. The concept of scaffolding represents any kind of support for cognitive activity that is provided by an adult when the child and adult are performing the task together.

In addition to these some of the following techniques were suggested by J.G. and M.G. Brooks in their book A Case for Constructivist Classrooms, state 12 principals essential to constructivist teaching:

1. Encouragement and acceptance of student autonomy and initiative.
2. Utilization of raw data and primary sources along with manipulative, interactive, and physical materials.
3. When planning, teachers use cognitive terminology such as "classify", "analyze", and "create."
4. Allowance of student responses to drive lessons, shift instructional strategies, and alter content.

5. Inquiry concerning students' understanding of concept before sharing their own understanding of those concepts.
6. Encouragement of students to engage in dialogue, both with the teacher and with one another.
7. Encouragement of student inquiry by asking thoughtful, open-ended questions and encouraging students to ask questions of each other.
8. Pursuit of elaboration of students' initial responses.
9. Engagement of students in experiences that might engender contradictions to their initial hypotheses and then encourage discussion.
10. Allowances for wait time after posing questions.
11. Providing time for students to construct relationships and create metaphors.
12. Nurturing students' natural curiosity through frequent use of the learning cycle model.

As mentioned, I believe that there so many benefits in the constructivist classroom. It is by nature student-driven and these ideas are pursued by them out of interest. I believe Constructivism in today's classrooms has carved a greater niche in this vast world of educational theories more so due to the benefits it carries along.

ARGUMENTS AGAINST CONSTRUCTIVISM

Constructivism has been argued against on various reasons. Some of them are:

1. It's too elitist. Many opponents say that constructivism is only successful with children from privileged backgrounds who are fortunate in having outstanding teachers, committed parents, and rich home environments. They argue that disadvantaged children, lacking such resources, benefit more from more explicit instruction.

2. Some say that there is very little evidence that constructivism actually works. Critics say that constructivists, by rejecting evaluation through testing and other external criteria, have made themselves unaccountable for their students' progress. Critics also say that that students in constructivist classrooms lag behind those in more traditional classrooms in basic skills.

CONCLUSION

Constructionism claims that learners construct knowledge most naturally and completely while them are constructing some artifacts. Perkins (1986) argues that knowledge acquisition is a process of design that is facilitated when learners are actively engaged in designing knowledge rather than merely interpreting or encoding it i.e. Learners benefit the most from the learning process when they are the designers of the instructional experiences. As mentioned, I believe that there so many benefits in the constructivist classroom. It is by nature student-driven and these ideas are pursued by them out of interest. I believe constructivism in today's classrooms has carved a greater niche in this vast world of educational theories more so due to the benefits it carries along.

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■■

TIME MANAGEMENT

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Do you find yourself rushing through your morning, stampeding to the door, making your way through traffic only to arrive late for work because you had to wait for bus or held up in traffic jam.....Then, how does rest of your day go ?.....

When once you get yourself into work do you need to take a few minutes to settle yourself? Do you find yourself overwhelmed by the number and complexity of works that need to be completed each day? As the day files by, do you often feel as if you haven't paid enough attention to each tasks because other tasks keep loading on your shoulder, co-workers interrupt or you can't get it well organised.....Do you feel that these things are sounding too familiar to you by now?

Regardless whether we work at home, an office or a factory or for ourselves, getting grip on time seems like a daily struggle for millions of people.

Despite cell phones, Internet, gas stoves, microwaves, it seems we never have enough time to take care of work, ourselves, our friends and family. Even though we make plans to care our burdens, we are busy because we are not productive with time. This is where Time Management has become important. This demands us to 'work Smart not hard' because there are only 24 hours in a day. All that we can do is managing it ourselves.

Then, what is Time Management? It is an art of budgeting one's time for the purpose of generating more effective work and productivity.

It is nothing but making more value out of our time with an aim of improving the quality of life. And it is not necessarily about getting lots of work done but making sure that we are working right things at right time.

Hence getting most out of 24- hours a day is a constant challenge in our busy world because too much to do but no enough time to do it. But having managed it does wonders for us.

HOW DOES TIME MANAGEMENT HELP US ?

- Improves health
- Relieves stress and makes us to deal with tasks and time meaningfully
- Teaches us to create more time for us
- Helps in dealing with overwhelming tasks
- Enables to eliminate any kind of actions that do not bring achievement to us
- Fixes a track to run our day in completing the tasks
- Increases our productivity
- Increases effectiveness
- Makes us to spare more time to concentrate on our hobbies
- Enables us to be in touch with family and others
- Increases our energy

HOW TO MANAGE TIME:

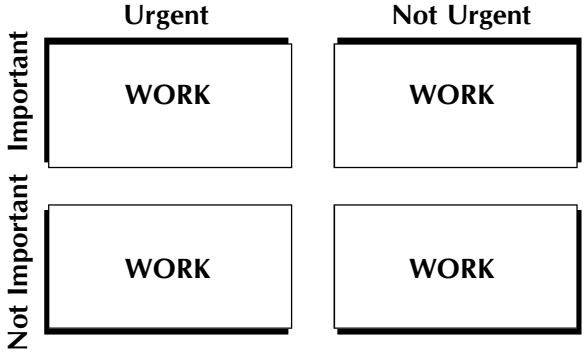
Some tips for time management

1. BE ORGANISED

- Avoid keeping stocks of work and heaps of materials at work place
- Keep all belongings at their proper places so that unnecessary searching is avoided
- Throw away the things that are not required
- Never note down on loose papers. Keep a note pad and pen handy.

2. LEARN TO PRIORITISE

- Don't work just for the sake of working. Be clear about roles and responsibilities
- Set only the gravitation goals
- Prepare a to do list [list of tasks to be done]
- Separate the tasks as important and not important
- Prioritise them on the basis of urgency and importance like
- Understand the difference between high and low priority work and also between important and urgent work
- Attend high priority tasks immediately
- Do not involve in irrelevant activities. ?



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REFLECTIVE TEACHING-LEARNING PROCESS

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ABSTRACT

Reflective teaching-learning methodology is a self evaluation technique adopted by teachers to promote motivation within one's own self in order to make teaching-learning process more interesting and effective task. If the teacher integrates mind tools such as metaphorical thinking and visual imagery in his/her reflective teaching methodology, the teaching-learning process becomes more challenging. The teacher will develop radiant or divergent thinking as the result teaching-learning process becomes learner centered. Metaphorical thinking is a natural phenomenon of the human brain to find similarity between two different universes of meaning. Visual imagery is another natural phenomenon in which human brain associates text material with structures in one's own mind's eye. Integrating these two mind tools consciously in reflective teaching-learning process transforms the teachers as well as teacher trainees to highly self motivated individuals.

INTRODUCTION

Reflective teaching methodology is a self inquiry approach which is constructivist in nature meaning that the learners construct new knowledge from their experiences related to the mental frame work that already exists in their mind. The role of the teacher is to foster constructivist approach in teaching-learning process integrating metaphorical thinking and visual imagery takes. This could be achieved by emphasizing active and cooperative learning seeking the connection between theory and practice of abstract concepts in the respective subject matter. Reflective teaching methodology enables the teacher to involve, recognize, examine, ruminate over the way an individual teaches. Hence forth, it could be very well said that the teachers possess their own background and experience, bring certain beliefs, assumptions, knowledge, attitudes and values to teaching. The practice of Reflective teaching explores the implications of all these complex factors with the intention of understanding and improving teaching-learning practice.

EXPLANATION

TEACHING CHARACTERISTICS OF TEACHING MODES

- Each involves a person who is knowledgeable about a subject (an "expert," if you will) communicating what he or she knows to a less knowledgeable person (the student)
- Generally, most of the communication is one-way-i.e., from the teacher to the student
- Relatively little learning takes place

FIVE ASPECTS OF TEACHING STYLES

Note : Teaching styles most prevalent in every subject especially in Math's/Science/Engineering courses are highlighted in bold type

1. What type of information is emphasized?

   Concrete : Facts, data, observable phenomena

   Abstract : Principles, concepts, theories, mathematical models

2. What mode of presentation is stressed?

   Visual : Pictures, diagrams, films, demonstrations

   Verbal : Spoken works, written words

3. How is the presentation organized?

   Deductive : Start with fundamentals; proceed to applications

   Inductive : Start with applications; proceed to fundamentals

4. What mode of student participation is facilitated?

   Active : Student involved (talking, moving, reflecting, solving problems)

   Passive : Student as a spectator (watch, listen)

5. What type of perspective is provided on the information presented ?

   Sequential : Step by step progression

   Global : Content and relevance are provided

Learning

Learning is the process of acquiring :

- New knowledge and intellectual skills (Cognitive learning)
- New manual or physical skills (Psychomotor learning)
- New emotional responses, attitudes, and values(Affective learning)

Characteristics of "Expert" Learners

- Control the learning process rather than become a victim of it
- Are active, not passive, in their approach to learning
- Are motivated (e.g., enjoy learning, have short-term and long-term goals, etc)
- Are disciplined (e.g. have learned good habits and use them consistently)
- Are more aware of themselves as learners (e.g. know their own strengths and weaknesses)
- Initiate opportunities to learn
- Set specific learning goals for themselves

Learning is a Reinforcement Process

WHEN	WHAT TO DO
Before class	Prepare for the lecture by reviewing notes, reading text, attempting a few problems, formulating some questions
During class	Attend lecture, concentrate intently, take detailed notes, ask questions
After class, but before next	Review and annotate notes, reread text; work assigned class meeting problems, work extra problems, meet with a study partner or study group to go over material and problems
In preparation for test or exam	Review notes; review text, rework problems, meet with a study partner or study group to go over material and problems
In preparation for final exam	Review notes, reread text, rework problems, meet with a study partner or study group to go over material and problems

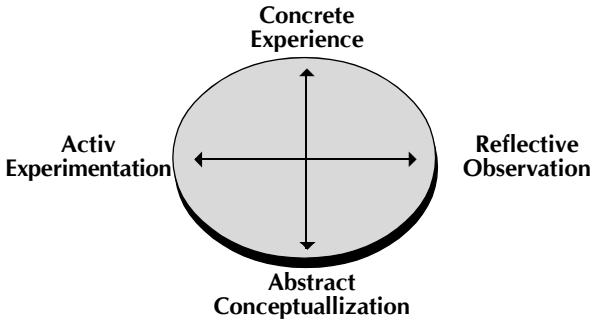

Fig: Learning style

Basic Principles of Learning

- Learning is continuous
- Learning is purposeful & must make sense to the learner
- Learning involves as many senses as possible
- Learning activities must be appropriate for the situation
- Learning must be stimulating
- Learning must result in the ability to perform
- Learning is affected by emotions
- Learning is affected by the physical and social environment

Gibbs' suggestions are often cited as Gibbs' reflective cycle or Gibbs' model of reflection (1988), and simplified into the following six distinct stages are Description, Feelings, Evaluation, Analysis, Conclusions, Action plan.

CONCLUSION

By integrating visual imagery and metaphorical thinking in reflective teaching methodology enables the teacher to possess a clear objective of what to be taught and how to proceed through the process of teaching and learning .For example, the learning of English Alphabets with suitable pictures of animals, plants, fruits or vegetables, can make child perceive information of alphabets by connecting with the mental image of the relevant picture.

The reflective teaching methodology enables the teacher to possess a clear idea of what to be taught and how to proceed through the process of teaching and learning. Therefore, it is concluded that integration of metaphorical thinking and visual imagery in reflective teaching methodology is known to promote the following mental skills in students namely

- **Valuing :** Choosing to employ a pattern of intellectual behaviors rather than other, less productive patterns;
- **Having the inclination :** Feeling the tendency toward employing a pattern of intellectual behaviors;
- **Being alert :** Perceiving opportunities for, and appropriateness of employing the pattern of behavior;
- **Being capable :** Possessing the basic thinking skills and capacities to carry through with the behaviors;
- **Making a commitment :** Reflecting on and constantly striving to improve performance of the pattern of intellectual behavior.

The development of above mental skills enables them acquire the qualities such as:

1. Persisting when the solution to a problem is not readily apparent.
2. Managing impulsivity.
3. Listening to others with understanding and empathy.
4. Thinking flexibly.

ISSN : 2249-2437 RESEARCH

IMPACT OF CO-OPERATIVE LEARNING MODEL AS AN INNOVATIVE MODEL FOR TEACHING MATHEMATICS

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ABSTRACT

The challenge in education today is to effectively teach students of diverse ability and differing rates of learning. Teachers are expected to teach in a way that enables pupils to learn mathematics concepts while acquiring process skills, positive attitudes and values and problem solving skills. A variety of teaching strategies have been advocated for use in mathematics classroom, ranging from teacher-centered approach to more students-centered ones. In the last decade, there is a vast amount of research done on cooperative learning in mathematics. In the recent years, cooperative learning method, which attracts the attention of many educators, constitutes an alternative to the traditional learning methods. According to Aç?kgöz (1992), cooperative learning is a process in which students learn by working in small groups and helping each other's learning for a common aim. Since cooperative learning is a group working, it is similar to the set working method.

INTRODUCTION

COOPERATIVE LEARNING IN MATHEMATICS

The teaching methodology serves the contents and the first issue to be discussed is the contents of cooperative learning. Some researchers believe that cooperative learning is suitable for more complicated or higher level epistemic targets and also suitable for learning tasks involving emotions, attitudes, and values (Wang, 2002). However, in our context, a more specific statement is needed to offer a better guideline for mathematics teaching practice in our middle schools.

OBJECTIVES OF THE STUDY

The objectives of the study are as follows:

1. To study the difference between pre and post-test achievement scores of Students of IX standard in mathematics and its components (experimental and control groups).

2. To study the difference between pre and post-test achievement scores of Students of IX standard in mathematics and its components in experimental group.

3. To study the difference between pre and post-test achievement scores of Students of IX standard in mathematics and its components in control group.

DESIGN OF THE STUDY

The study had pre-test, post-test, quasi-experimental study. The major independent variables of the comparative study that is Co-operative Learning and Conventional Method of Teaching, the dependent variables of the study were achievement; control variables were intelligence and SES.

SAMPLE

The present study was conducted on 100 students of which 50 students of IX division A and 50 students of IX division B of K.L.E Society's English Medium School, Hubli was selected using random sampling method.

VARIABLES

Independent Variable	Dependent Variable	Control Variable
1.Teaching Methods - Two levels a. Co-operative Learning b. Conventional teaching method	Students' achievement in Mathematics	Intelligence S.E.S.

TOOLS

The following tools were used for collection of data:

1. Investigator has prepared questionnaire consisting of 100 multiple choice questions pertaining to Mathematics and its components .
2. Raven's Standard Progressive Matrices (1960).
3. Socio-economic Status Scale of Kuppuswamy (1975).

STATISTICAL TECHNIQUES

Differential or inferential statistics technique was employed.

Hypothesis : There is no significant difference between pre and post-test achievement scores of Students of IX standard in mathematics and its components (experimental and control groups).

Table - 1 : Results of paired t-test between pre and post-test achievement scores of Students of IX standard in mathematics and its components (experimental and control groups)

Achievement	Test	Mean	Std. Dv.	Mean Diff.	SD Diff.	Paired t- Test	P-value	Signi.
Mathematics	Pre-test	42.9300	8.7539	-22.4300	9.6601	-23.2191	< 0.05	S
	Post-test	65.3600	10.7671					
Square & square roots	Pre-test	11.3600	3.0369	-6.3800	3.8212	-16.6963	< 0.05	S
	Post-test	17.7400	2.8271					
Ratios & proportions	Pre-test	9.8100	3.6589	-6.8300	3.6239	-18.8473	< 0.05	S
	Post-test	16.6400	2.9457					
Factorization	Pre-test	11.2800	3.4556	-5.3500	3.9399	-13.5791	< 0.05	S
	Post-test	16.6300	3.4602					
Algebraic equations & solutions	Pre-test	11.2600	2.8976	-4.2900	3.7235	-11.5214	< 0.05	S
	Post-test	15.5500	3.4330					

From the above table, it can be observed that,

1. Students of IX standard have higher post-test achievement scores in mathematics when compared to pre-test achievement scores in mathematics in total samples.
2. Students of IX standard have higher post-test achievement scores in components of mathematics i.e. Square & square roots when compared to pre-test scores in total samples.
3. Students of IX standard have higher post-test achievement scores in components of mathematics i.e. Ratios & proportions when compared to pre-test scores in total samples.
4. Students of IX standard have higher post-test achievement scores in Factorization when compared to pre-test scores in total samples.
5. Students of IX standard have higher post-test achievement scores towards Algebraic equations & solutions when compared to pre-test scores in total samples.

Hypothesis : There is no significant difference between pre and post-test achievement scores of Students of IX standard in mathematics and its components in experimental group.

Table - 2 : Results of paired t-test between pre and post-test achievement scores of Students of IX standard in mathematics and its components in experimental group.

Achievement	Test	Mean	Std. Dv.	Mean Diff.	SD Diff.	Paired t- Test	P-value	Signi.
Mathematics	Pre-test	44.6400	9.8058	-30.0400	6.8182	-31.1540	< 0.05	S
	Post-test	74.6800	5.3354					
Square & square roots	Pre-test	11.6000	3.5109	-8.5600	3.4414	-17.5883	< 0.05	S
	Post-test	20.1600	0.9116					
Ratios & proportions	Pre-test	10.3200	4.1915	-8.2600	3.6242	-16.1157	< 0.05	S
	Post-test	18.5800	2.4167					
Factorization	Pre-test	11.7600	3.83.9	-7.5600	3.3755	-15.8366	< 0.05	S
	Post-test	19.3200	1.5836					
Algebraic equations & solutions	Pre-test	11.7600	3.3900	-6.4600	3.2148	-14.2089	< 0.05	S
	Post-test	18.2200	1.9927					

From the above table, it can be observed that,

- Students of IX standard have higher post-test achievement scores in mathematics when compared to pre-test achievement scores in mathematics in experimental group.
- Students of IX standard have higher post-test achievement scores in components of mathematics i.e. Square & square roots when compared to pre-test scores in experimental group.
- Students of IX standard have higher post-test achievement scores in components of mathematics i.e. Ratios & proportions when compared to pre-test scores in experimental group.

- Students of IX standard have higher post-test achievement scores in Factorization when compared to pre-test scores in experimental group.
- Students of IX standard have higher post-test achievement scores towards Algebraic equations & solutions when compared to pre-test scores in experimental group

Hypothesis: There is no significant difference between pre and post-test achievement scores of Students of IX standard in mathematics and its components in control group

Table - 3 : Results of paired t-test between pre and post-test achievement scores of Students of IX standard in mathematics and its components in control group.

Achievement	Test	Mean	Std. Dv.	Mean Diff.	SD Diff.	Paired t- Test	P-value	Signi.
Mathematics	Pre-test	41.2200	7.2599	-14.8200	4.8852	-21.4513	< 0.05	S
	Post-test	56.0400	5.3374					
Square & square roots	Pre-test	11.1200	2.4878	-4.2000	2.8212	-10.5269	< 0.05	S
	Post-test	15.3200	1.8344					
Ratios & proportions	Pre-test	9.3000	2.9915	-5.4000	3.072	-12.5721	< 0.05	S
	Post-test	14.7000	2.0025					
Factorization	Pre-test	10.8000	2.9966	-3.1400	3.1623	-7.0211	< 0.05	S
	Post-test	13.9400	2.6296					
Algebraic equations & solutions	Pre-test	10.7600	2.2275	-2.1200	2.8402	-52780	< 0.05	S
	Post-test	12.8800	2.303					

From the above table, it can be observed that,

1. Students of IX standard have higher post-test achievement scores in mathematics when compared to pre-test achievement scores in mathematics in control group.
2. Students of IX standard have higher post-test achievement scores in components of mathematics i.e. Square & square roots when compared to pre-test scores in control group.
3. Students of IX standard have higher post-test achievement scores in components of mathematics i.e. Ratios & proportions when compared to pre-test scores in control group.
4. Students of IX standard have higher post-test achievement scores in component of mathematics i.e. Factorization when compared to pre-test scores in control group.
5. Students of IX standard have higher post-test achievement scores in component of mathematics i.e. Algebraic equations & solutions when compared to pre-test scores in control group.

DISCUSSION AND CONCLUSION

With the help of conclusions obtained in the study, it is reached the result that learning together technique is more effective than conventional teaching method in mathematics teaching. In learning together technique of cooperative learning method, the students permanently connects with each other and their teachers for learning and teaching, whereas in conventional teaching method, there is an atmosphere that the connection is less and the teachers is at the center.

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CONFLICT MANAGEMENT AMONG MARRIED WORKING AND NON WORKING WOMEN

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Conflict management is predetermined strategy for coping with psychological or emotional turmoil. Today women in the society have shown their expertise, proficiency and talents in different disciplines. The role of women in our society has changed significantly in the past three decades. Women and girls have many more opportunities and face different challenges. Women who have achieved great stature in government, industry, sports and the media have become a familiar sight. The traditional role of a woman is, to be responsible for the efficient running of her home; it is something we need to be aware of as an additional expectation made from her. Working women have dual roles to play in the family as well as in the place of work. Hence there is a need for working women to cope up with coming challenges where she has to justify her role in both places which creates a lot of conflict management in them. Therefore, every working woman should develop abilities for conflict management to lead a happy and successful life. The present study is a survey study which involves a sample of 300; 150 working and 150 non working women from which deductions will be made.

STATEMENT OF THE PROBLEM

A study on the conflict management of married working and non working women of Bijapur City.

ROLE OF CONFLICT MANAGEMENT

"Role of conflict management is a conflict management among the roles corresponding to two or more statuses". We experience role conflict management when we find ourselves pulled in various directions as we try to respond to the many statuses we hold. Role of conflict management can be something that can be for either a short period of time, or a long period of time, and it can also be connected to situational experiences.

In the present study Role of Conflict management refers conflict management that a married working women experiences corresponding to their two or more status.

MARRIED WORKING WOMEN

In the present study Married Working Women refers to the women who performs the different roles such as wife, mother, home maker and employee aged between 20 to 65 years.

OBJECTIVES

1. To study the level of Role of Conflict Management of Married Women Teachers, Bank employees and Doctors
2. To study the level of Role of Conflict Management of Married Working Women with respect to their age.
3. To study the level of Role of Conflict Management of Married Working Women with respect to number of children.
4. To study the difference if any, in the level of Role of Conflict management among Married Women Teachers, Bank employees and Doctors.

HYPOTHESIS OF THE STUDY

However there is a no significant difference in the level of Conflict Management of Married Working Women.

METHODOLOGY

It is a descriptive survey study. All the married working women of Bijapur City were the population of the study. The sample consisted of a total of 150 Married Working Women aged between 20 to 65 years working in Bijapur City were selected using simple random sampling technique. Conflict management was measured using conflict management questionnaire. The obtained data were analyzed using descriptive and inferential statistics.

SAMPLE OF THE STUDY

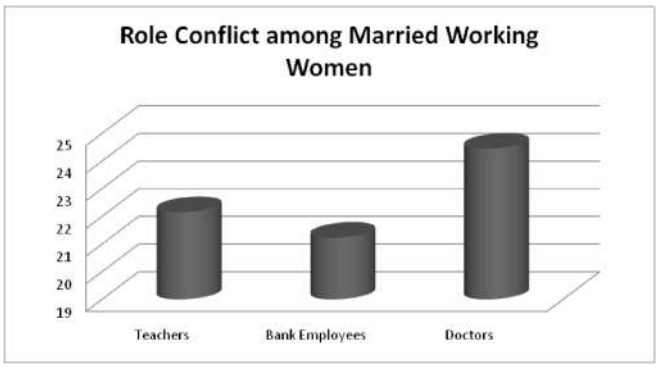
Randomly selected 150 married working women of various professions were the samples of the study.

ANALYSES AND INTERPRETATION OF DATA

1. To study the level of Conflict Management of Married Women Teachers, Bank employees and Doctors

The analyses and interpretation of objective was done using descriptive statistics which includes Mean. The following table gives the details regarding Mean scores of Married Women Teachers, Bank employees and Doctors.

	Mean
Teachers	22.15
Bank Employees	21.23
Doctors	24.45



Bar graph representation of the Mean Scores of Married Working Women

It is observed from the above figure that mean scores of married Doctors are higher than that of Teachers and Bank Employees. Hence level of conflict management is high among Married Doctors than Teachers and Bank Employees.

2. To study the level of Conflict Management of Married Working Women with respect to their age.

The analysis of objective was done using descriptive statistics. The following table gives the details regarding the mean scores of Married Working Women with respect to their ages.

Age	Mean
20 - 30 years	22.15
31 - 40 years	23.56
41 and above	21

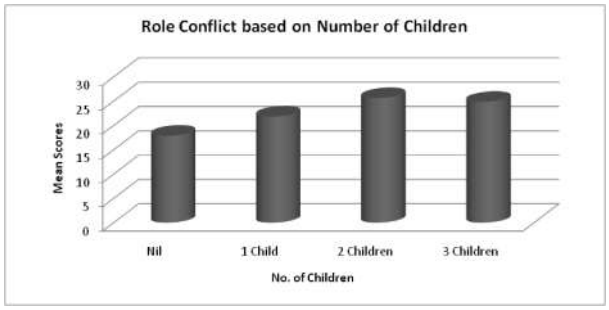
Bar graph representation of the mean scores of Married Working Women with respect their age.

From the above figure it is observed that the level of Conflict Management among married working women aged between 31 - 40 is higher than that of women aged between 20 - 30 years and above 41 years of age.

3. To study the level of Conflict Management of Married Working Women with respect to number of children.

The analyses of objective was done using descriptive statistics. The following figure gives the details regarding the mean scores of Married Working Women with respect to number of children.

No. of Children	Mean
Nil	17.875
1 Child	21.84848
2 Children	25.62963
3 Children	24.85714



From the above figure it is observed that the level of Conflict management among married working women having 2 children is comparatively higher than children having 1 and 2. It is lowest among the married working women without any children.

FINDINGS OF THE STUDY

1. Among three groups of Married Working Women i.e. Teachers, Bank Employees and Doctors, the level of Conflict management is high among doctors.
2. The married working women aged between 30 to 41 years of age experiences higher level of Conflict management than women aged between 20 to 30 years and 41 and above.
3. The level of Conflict management is high among the married working women having two children.
4. There is no significant difference in the level of Conflict management among Married women teachers, bank employees and doctors.

IMPLICATIONS OF THE STUDY

1. In order to reduce the Conflict management, employers and policy makers pay special attention to improve the welfare of employees through improved facilities and support services such as day care on site, flex-time and 180days maternity leave, to help them cope with their multiple roles.
2. Besides employers, policy makers, extension planners and family development practitioners and educators, husbands also have a role to play since

spousal support and family member support is a crucial variable for the reduction of inter role conflict management for working women.

LIMITATIONS OF THE STUDY

Like all studies, the current research has limitations. The sample in the present study is quite small; hence, the generalization of the findings is limited. Additional research is needed in other employment settings to find out the intensity level of Married Working Women and to explore the relationship between work family conflict management and quality of life among married women employees. Researchers need to investigate adjustments made by organizations which actually reduce the conflicts management arising from the mutual demands of the work and family domains.

CONCLUSIONS

A woman is the world in itself. Her beauty, care knowledge etc. has no substitute in the world. It is important to realize that we as woman have immense power. This power must be used efficiently. No family runs without the sacrifices or adjustments made by the women. Husband, parents etc must realize her worth in their life and take good care of her. Multiplies roles, family pressure are part of today's life. But these hurdles are becoming rocks in path of healthy life. In it vital to cultivate necessary reforms in today's lifestyles for a better and healthier tomorrow.

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- From Continued on Page No. 7

3. STAY DISCIPLINED

- Beat procrastination (do not put off work that you are supposed to do right now).
- Do not wait for the right mood and right time
- Don't be scared of failures
- Do not feel overwhelmed by the tasks
- Do not keep any work pending
- Be in work spot before time

4. TAKE OWNERSHIP OF YOUR WORK

- Completely understand the nature of your work
- Learnt to work for yourself
- Be answerable for your work
- Accept your work
- Dedication to work must be from within

5. BE DIPLOMATIC

- Don't accept everything which comes your way
- Learnt to say a polite 'NO'
- Complete the given responsibility well in time

6. BE FOCUSED

- Concentrate on work
- Don't waste time by loitering and gossiping around
- Develop the habit of setting remainders [in phones]
- Schedule time for relaxation.
- Remember Time once gone never comes back."Hence be productive with time and Invest rightly so that it reaps you more.

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ISSN : 2249-2437 RESEARCH

GROUP COHESIVENESS AND GENERAL MENTAL ABILITY OF SECONDARY SCHOOL STUDENTS

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ABSTRACT

The study investigated the relationship between Group Cohesiveness (GC) and General Mental Ability (GMA) by studying 60 secondary school students in Mysore city, India. Survey method was adopted for data collection, Pearson product moment correlation technique was used for analysis of data. The results showed that there was a significant positive correlation between total Group Cohesiveness and overall General Mental Ability of secondary school students.

Key words : Group Cohesiveness, General Mental Ability, Secondary school students.

1. INTRODUCTION

Group work could be more productive if there exist high cohesion among its group members. Individuals are no longer the key units in an organization; rather teams are. Functional teams perform at a greater level than the sum of their individual parts because they share skills, knowledge, and experiences that exceed the general ability of any individual. Teams are important to organizations because "the leader and the team are able to achieve something together that neither could achieve alone". Because teams have become the vital component of organizations, school and colleges have a responsibility to engage their students in collaborative learning experiences and equip them with the competencies to become effective team members. Skills in communication, analytical general ability, and teamwork are the most important skills that companies look for in job candidates, yet executives rarely find school and college students with these skills.

The concept of cohesion has been an important factor in the study of group behavior and its significance is often a source of motivation for group leaders. Group Cohesiveness is (GC) "a dynamic process which is reflected in the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives and for the satisfaction of member affective needs". Historically, group cohesion has been considered to be the most important small group variable that directly contributes to group members' exercise behaviors and cognitions, such as adherence, intention and effort. Task cohesion represented the strongest source of social influence for adherence behaviors. A conceptual model for group cohesion includes two cohesion-related issues: (a) the need to distinguish between the individual and the group, and (b) the need to distinguish between task and social concerns of the group and its members.

Research demonstrates that collaborative learning experiences increase student general mental ability and learning. While cooperative group learning may be effective, the problem is that some teams fail to collaborate. The challenge of managing collaborative work extends beyond the confines of the classroom. Whether in the classroom or in corporate boardrooms, new knowledge is needed to help teams become more cohesive so that dysfunction is minimized, performance, general mental ability and cohesion are increased.

The idea of General Mental Ability (GMA) or intelligence was first conceptualized by Spearman in 1904. He reflected on the popularly held notion that some people are more academically able than others, noting that students who tend to perform well in one intellectual domain (e.g. science) also tend to perform well in other domains (e.g. mathematics, geography etc.). He concluded that an underlying factor which he termed general intelligence, accounted for this tendency for student to perform well across a wide range of areas, while differences in a person's specific abilities or aptitudes accounted for their tendency to perform marginally better in one area than in another. Crystallized general intelligence or ability, on the other hand, consists of fluid intelligence as it is evidenced in culturally valued activities. High levels of crystallized intelligence are evidenced in a person's good level of general knowledge and, their extensive vocabulary and their ability to reason using words and numbers. In short, crystallized intelligence is the product of a person's cultural and educational experience in interaction with their fluid intelligence.

General intelligences/ability that identified the importance of evaluating more than cognitive signs of intelligence suggesting that emotional and interpersonal areas must also be recognized. Examining the relationship

between General Mental Ability and Group Cohesion may shed some light on why some groups fail to collaborate whereas others are more cohesive. Thus, the purpose of the study was to examine the relationship between General Mental Ability and Group Cohesiveness among secondary school students.

2. STATEMENT OF THE PROBLEM

The study has been entitled,

- Group Cohesiveness and General Mental Ability of secondary school students.

3. OBJECTIVES OF THE STUDY

The following are the objectives of the study :

- To examine whether there is a significant relationship between Group Cohesiveness and General Mental Ability of secondary school students

4. HYPOTHESES OF THE STUDY

The following are the hypotheses of the study :

- There is no significant correlation between Group Cohesiveness and General Mental Ability of secondary school students

5. VARIABLES OF THE STUDY

Main variable

- Group Cohesiveness

Criterion variable

- General mental ability

6. OPERATIONAL DEFINITION OF THE TERMS

Group Cohesiveness : The extent to which cooperative group members like each other, desire to continue to be part of the group, being satisfied with their group membership, attitude towards other members of the group, willingness to cooperate with other group members, willingness to work with others on the assigned tasks, provide more elaborate help and assistance to each other to achieve on- task, stronger perception of group cohesion, and social responsibility for each other's learning. Group Cohesiveness in secondary school students in the present study is the total score obtained by the students in Group Cohesiveness scale constructed by the researcher.

General Mental Ability : General mental ability (GMA) is a term used to describe the level at which an individual learns, understands instructions, and solves problems. Tests of general mental ability include scales that measure specific constructs such as verbal, mechanical, numerical, social, and spatial ability. The overall score is considered the most important factor, explaining more variation in individual performance than specific abilities. The Raven's progressive Matrices (RPM) is a non-verbal test for measuring the intelligence of persons above the age of eleven. In this RPM booklet, there are five sets of problems. They are sets A, B, C, D and E. Each one set has 12 problems. Every problem requires the user to select the design that completes the pattern.

7. METHODOLOGY

Survey method was adopted for this study.

8. SAMPLE OF THE STUDY

The sample of the study comprised 60 secondary school students in Mysore city. The students were selected by using simple random sampling technique.

9. T OOLS USED FOR DATA COLLECTION

Group Cohesiveness scale: constructed by investigator was used. The Group Cohesiveness scale comprised 50 statements which cover seven areas of Group Cohesiveness namely Members' Similarity, Group Success, Nature of the Group, Communication, Leadership Style, Competition and Autonomy. The scale included both positive and negative items. Each item was given four preferences - Strongly agree (SA), Agree (A), Disagree (D) and Strongly disagree (SD). Positive items were given a score of 4, 3, 2 and 1 respectively. The negative items were given a score of 1, 2, 3, and 4 respectively. Scores of each item were summed up to get total scores of each individual student.

General Mental Ability test : Raven's Standard Progressive Matrices was used in the study. This tool is standardized and was constructed by J.C. Raven (1960). The intelligence level of all the students selected was measured using this tool. The Raven's progressive Matrices (RPM) is a non-verbal test for measuring the intelligence of persons above the age of eleven. In this RPM booklet, there are five sets of problems. They are sets A, B, C, D and E. Each one set has 12 problems. Every problem requires the user to select the design that completes the pattern. From the Raven's report, the reliability coefficients of the test vary from 0.80 to 0.90.

10. COLLECTION OF DATA

Two schools were selected as the sources of the sample. The investigator approached the heads of schools and got permission for data collection. The investigator personally administered the two scales to the students. Before administering the scales on the students, investigators informed the students about the need and purpose of the data collection.

11. STATISTICAL ANALYSIS OF DATA

Pearson Product moment Correlation technique was

used to find out the correlation between Group Cohesiveness and General mental ability.

12. ANALYSIS AND INTERPRETATION OF DATA

HO 1 : There is no significant correlation between Group Cohesiveness and General mental ability of secondary school students

Table 1 : Table showing summary table of Pearson Product Moment Correlation for Group Cohesiveness and General mental ability

Variables	N	'r' value
Group Cohesiveness	60	0.43
General Mental Ability		

Table 1 reveals that the obtained 'r' value of 0.43 is positive and significant. Therefore, the null hypothesis stating that there is no significant correlation between Group Cohesiveness and General Mental Ability of secondary school students is rejected and alternative hypothesis is accepted. Hence it is concluded that there is a significant positive correlation between Group Cohesiveness and General mental Ability of secondary school students.

FINDINGS OF THE STUDY

There is a significant positive correlation between Group Cohesiveness and General mental Ability of secondary school students.

CONCLUSION

General Mental Ability is positively correlated to Group Cohesiveness. There is a need to realize and create awareness of Group Cohesiveness in the classroom and especially among teachers. The results of this study offers new perspectives for cooperative group learning where students' strong relationship can further contribute to the growth of the student's performance and ability. The degree of cohesiveness among students determines the success of cooperative groups' performance in moving towards its future direction. The cooperative group learning needs to strengthen its degree of relationship or cohesiveness among students as its performance or ability depends largely on it.

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AN ESTIMATION OF PRIVATE MEDICAL MANPOWER : A CASE STUDY OF HAVERI DISTRICT IN KARNATAKA

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- **Subhas Karlawad,** Asst. Professor in Geography, BAJSS College, Ranebennur.
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ABSTRACT

Health is a "State of physical mental and social well being and the absence of disease or other abnormal condition" perfect health may alternatively be called a state in which individuals capacities for taste and role performance are optimized. A comprehensive analysis of health care infrastructure, which consists of hospitals, dispensaries, practitioners, doctors, Para medical staff health workers. Health assistance ANM's number of beds and medical stores. The present study is based on both primary and secondary data. Primary data is collected from private doctors in the district with oral discussion.

The main objectives of the study are the health status and the levels of development of private medical care infrastructure for service delivery in the district, to estimate and analyze the distribution pattern of private medical man power. There will be a lot of difference between number of public and private doctors. It is almost found that 1:5 and one more note worthy finding here is that no. of public MMP per 1000 population is just 0.057 and no. of private MMP per 1000 population is almost 110.5. So it is totally incomparable. By observing the studied on health care, majority of the studies have focused on public health services both at the national and state level. So it is keenly observed that there will be a great dearth on the study of private medical man power at all levels (i.e. national state and even at regional level) .These gaps in the above studies made to take up the present study The investigator will surely attempt to estimate the quantum of private medical manpower in order to recognize the present health scenario of the district. Despite the impressive public health infrastructure, it is cause of the concern that only about 20% services are being provided by the public sector, while the private sector provides almost 80% of the medical care services.

The findings regarding private medical man power and infrastructure in turns of beds etc. it is clear that there will be a lot of difference between the figures of public & private doctors. It is almost 1:5 & one more note worthy point here is that number of public medical man power per 000 populations is just 0.057 and number of private MMP per 1000 population is almost 110 so it is totally incomparable. These results confirm that there exists close nexus between private medical amenities & need of the people of study area. So it also proves that the access to private medical amenities for the people of the study area is quite adequate. It is eagerly suggested that a cordial relation & co-ordination should be maintained in between public & private medical care not only for the implementation of public health programmes but even for the betterment of health status of the people. Efforts should be made to involve non government practitioner's (private medical service providers), local leaders & voluntary agenesis in health care programmes.

INTRODUCTION

Health is a "State of physical mental and social well being and the absence of disease or other abnormal condition" perfect health may alternatively be called a state in which individuals capacities for taste and role performance (which is more important from the point of view of human productivity or the eco prospective) are optimized. Karnataka is motivated to reach the goal of health for all (HFA) by 2000 AD. This requires primary health care in the form of Promotive, Preventive, Curative and Rehabilitative health facilities at family and community levels in a village. The district health and family welfare officer at the district level is responsible for performing promotional, preventive and curative health services in rural areas. The district surgeon is held responsible for rendering medical services (Curative) in urban areas. The norms, which have guided the health care delivery system in the state as well as the nation, are same even in the district level so Haveri district is not an exception to this care.

A comprehensive analysis of health care infrastructure, which consists of hospitals, dispensaries, practitioners, doctors, Para medical staff health workers. So and so forth, in the district of health assistance ANM's no. of beds and medical stores. Haveri is undertaken in this study. Hence the present study has attempted to provide data on different constituents of health care infrastructure available in the study area.

METHODOLOGY

The present study is primarily a micro analysis of an estimation of medical manpower in Haveri district. As for as analysis of growth of health care is concerned however for the study of an estimation of private medical manpower, the year 2009 has been the reference year of the study.

The present study is based on both primary and secondary data. Primary data is collected from private doctors in the district with oral discussion. Secondary data has been procured from published and unpublished documents of the directorate of Economics and statistics. GOI, department of health and family welfare, GOI, district health and family welfare office Haveri, district statistical office Haveri, (phone directorate of telecommunication department of Haveri district), BSNL old Dharwad telecom, district Dooravani Darshike 2007-08, BAMS Doctors Association of Haveri district 2008-09, Z-P Haveri, Haveri district surveillance unit IMA of Haveri district (Alopathic doctors association of Haveri district) so and so forth. Discussions were also held with private senior medical personnels of the concerned district. Statistical devices like percentage, ratio, are applied to given data.

OBJECTIVES

The main objective of the study is as follows.

1. To study the health status of people of Haveri district.
2. To study the level of development of private medical care infrastructure for service delivery in the district of Haveri
3. To estimate and analyze the distribution pattern of private medical man power in Haveri District.
4. To examine the growth of private medical man power.

DISTRIBUTION OF PRIVATE HEALTH INSTITUTIONS IN THE STUDY AREA

The details in table no. 1 show that there were 533 private medical institutions in all talukas of Haveri district, as per the year 2009-10. Taluka wise distribution is concerned; there were 235 institutions that is maximum in the Ranebennur taluka. But number of institutions per thousand population in the same taluka was just 0.77. It is the highest rate per 1000 population in the entire district followed by Haveri (0.45), Shiggaon (0.37).

Byadagi (0.22), Savanur (0.17) and the least number. of institutions per 1000 population was found in Hangal taluka (0.13) But even in the entire district average no. of institutions per 1000 population was found to the extent of 0.37

Table No.1. : Private medical institutions per 1000 population in the study area-2010

S.No.	Talukas	No.of Hospitals	No.of institutions/ 1000 population	Population as per 2007-08
1.	Byadagi	29	0.22	127944
2.	Hangal	31	0.13	230750
3.	Haveri	115	0.45	252347
4.	Hirekerur	35	0.16	212458
5.	Ranebennur	236	0.77	304990
6.	Savanur	25	0.17	143885
7.	Shiggaon	62	0.37	166742
	Total	533	0.37	1439116

Source : (1) DSO Haveri (2) D.H.F.W.Office Haveri 2009-10

i. Private medical institutions per 1000 sq. kms in the district- 2010

It is made clear in table 2 which in fact discloses the number of private medical institutions per thousand sq.kms in Haveri district out of 533 private hospitals in both Allopathic and Ayurvedic in the district, maximum number of private medical institutions were located in Ranebennur taluka. As shown in the below table.

TableNo.2 : Private Health institutions per thousand sq.kms in the study area- 2009-10

S.No.	Talukas	No. of private medical institution	Area in Sq.kms	Medical institutions per 1000 sq.km
1.	Byadagi	29	436.5	66.5
2.	Hangal	31	767.8	40.4
3.	Haveri	115	799.5	143.9
4.	Hirekerur	35	806.9	43.4
5.	Ranebennur	236	904.5	21.0
6.	Savanur	25	538.9	4.3
7.	Shiggaon	62	589.2	105.2
	Total	533	4823.0	110.5

Source : (1) DSO Haveri (2) Haveri district at glance 2007-08

It is recorded to the tune of 261 hospitals per thousand sq.km in Ranebennur taluka. Then it is followed by Haveri (143.9), Shiggaon (105.2), Byadgi (66.5) and the least number of Private institutions per thousand sq.km is found in Hangal (40.4) followed by Hirekerur (43.4), Savanur (46.3) on an average 110.5 institutions per thousand sq.km were found in the entire district.

ii. Beds in private medical institutions per 1000 sq.kms in the study area

It is clearly mentioned in table 3. The total number of beds in the entire district of Haveri, according to 2009-10 is recorded to the tune of 765. It means 158.6 beds per thousand sq.kms in the district maximum number of beds per thousand sq.km is found

TableNo.3 : Bed of private medical institutions per 1000 sq.kms - 2010

S.No.	Talukas	No. of beds	No. of beds/ 1000 sq.kms	Area in sq.kms
1.	Byadagi	80	183.4	436.5
2.	Hangal	110	143.4	767.8
3.	Haveri	340	425.5	799.5
4.	Hirekerur	60	74.44	80.9
5.	Ranebennur	127	140.4	904.5
6.	Savanur	20	37.17	538.9
7.	Shiggaon	28	47.5	589.2
	Total	75	158.	4823.0

Source : (1) DSO Haveri (2) Haveri district at glance 2007-08

In the Haveri taluka i.e. to the extent of 425.5 beds per thousand sq.k.m. It is infact 3 times greater than the district figure (158.6). Then it is followed by Byadgi (183.4 beds), Hanagal (143.4). Ranebennur (140.4 beds per 1000 sq.kms) minimum number of beds per thousand sq.km is appeared in Savanur taluka (37.17) followed by Shiggaon (47.5) Hirekerur (74.44).

DISTRIBUTION OF PRIVATE MEDICAL MAN POWER IN THE STUDY AREA

It is rather interesting to mention that there were totally 533 private medical practitioners in the entire district of Haveri during the year 2009-10 which is clearly shown in table 4 out of 533, Allopathic doctors were 155 and remaining (378) are Aurvedic doctors. The maximum number of private doctors (Private medical man power) in the district were found in Renebennur taluka, which is recorded to the extent of 236 doctors. Out of which 148 were Ayurvedic & 88 were Allopathic. It is followed by Haveri (115), Shiggaon (62), Hirekerur (35). The least number of MMP is located in Savanur taluka to the tune of 25 followed by Byadgi (29), Hangal (31).

Table No.4 : Private Medical man power and Para medical manpower- 2009-10.

S.No.	Talukas	No. of MMP		Total	Pvt. para medical man power	Radio-logist
		Allopathic	Aurvedic			
1.	Byadagi	08	21	29	27	-
2.	Hangal	07	24	31	51	-
3.	Haveri	34	81	115	78	01
4.	Hirekerur	06	29	35	48	01
5.	Ranebennur	88	148	23	106	01
6.	Savanur	04	21	25	27	-
7.	Shiggaon	08	54	662	43	-
	Total	155	378	533	380	03

Source : (1) DHFW office Haveri 2009-10 (2) Drug controller and Authority Haveri Circle, Haveri 2009-10(3) BAMS Doctors Association of Haveri district 2008-09

Similarly there was 380 para medical manpower in the entire district of Haveri. Out of which, maximum number of them were appeared in Ranebennur taluka (106) followed by Haveri (78), Hangal (51) Hirekerur (48). The least number of para medical manpower is found in Byadgi and Savanur (27 each). It is also followed by Shiggaon (43). It would not be wrong if observer mentioned that para medical man power is some what parallel to private medical manpower in the district. 3 Radiologist were found in the district viz Haveri, Ranebennur & Hirekerur each one.

i. Private medical and Para medical man power Study Area-2009-10.

Table No.5. : Para medical man power and private MMP/1000 population

S.No.	Talukas	No. of Para medical man power/1000 population	No. of private MMP /1000 population
1.	Byadagi	0.21	0.22
2.	Hangal	0.22	0.13
3.	Haveri	0.30	0.45
4.	Hirekerur	0.22	0.16
5.	Ranebennur	0.34	0.77
6.	Savanur	0.18	0.17
7.	Shiggaon	0.25	0.37
	Total	0.26	0.37

Source : Extracted from table 4

It is evident from the table no. 5, It was note worthy to mention that highest number of private medical man power & para MMP was found in Ranebennur taluka per 1000 population. It was recorded to the extent of 0.77 and 0.34 respectively. It is followed by Haveri 0.45 in respect of number of private MMP per 1000 population and 0.30 in case of para medical man power. Similarly lowest number of private MMP was found in Hangal (0.13) and para medical man power was 0.18 in Savanur taluka respectively. It is followed by Hirekerur (0.16) and Byadgi (0.21) in case of private medical M.P & para MMP respectively on an average in the entire district it was 0.37 per 1000 population in respect of number of private MMP and 0.26 in respect of Para medical man power.

ii. Private medical man power per 1000 sq.km area-2009-10

It is so evident from the table no 6 that the total number of private doctors per 1000 sq.km in the entire district is recorded to the extent of 110. But the highest number of private MMP per 1000 sq.km in the district is found in Ranebennur to the extent. of 261 persons per 1000 sq.km followed by Haveri (143.9 persons), Shiggaon (105.2), Byadgi (66.5).

Table No. 6. : Private Medical Doctors per thousand sq.kms-2009-10.

S.No.	Talukas	No. of private Doctors/1000sq.kms	No. of private Doctors
1.	Byadagi	66.5	29
2.	Hangal	40.4	31
3.	Haveri	143.9	115
4.	Hirekerur	43.4	35
5.	Ranebennur	261.0	236
6.	Savanur	4.3	25
7.	Shiggaon	105.2	62
	Total	110.5	533

Source : (1) D.H. F.W-office Haveri 2009-10 (2) Haveri district at glance 2007-08

Similarly the lowest number of private medical man power per 1000 sq.km in the entire district is available in Hangal (40.4 persons) followed by Hirekerur (43.4 persons), Savanur (46.3 persons).

Table No. 7. : Comparison between Public & Private MMP in Haveri district

S.No.	Talukas	Public MMP		Private MMP	
		Total No. of public MMP	No. of public MMP per1000 population	Total No. of Private MMP	No. of private MMP per1000 population
1.	Byadagi	13	0.007	29	66.5
2.	Hangal	09	0.006	31	40.4
3.	Haveri	12	0.007	115	143.9
4.	Hirekerur	20	0.013	35	43.4
5.	Ranebennur	07	0.00	236	261.0
6.	Savanur	16	0.009	25	46.3
7.	Shiggaon	15	0.009	62	105.2
	Total	92	0.057	533	110.5

Source : (1) Derived from table 6 (2) D.H.F.W office. Haveri 2009-10

The comparative position of both public & private MMP in the district of Haveri in recent years is shown in above table, which is clearly backed up by only number. of public & private MMP (doctors) in connection with number of them per thousand population.

It is clearly shown in the table 7 that there will be a lot of difference between public and private doctors. It is almost 1:5 and one more note worthy point here is that number of private MMP per thousand populations is just 0.057 and number of private MMP per 000 population is almost 110.5 it is totally on comparable. The highest number of public doctors were found in Hirekerur taluka and the number of doctors per thousand population is lowest in Hangal and Ranebennur (i.e 0.006) Similarly the maximum number of private doctors were existed in Ranebennur taluka but the number of private doctors per thousand population is too highest in the same taluka i.e.261per thousand population. But lowest number of doctors was seen in Byadgi taluka (29) and least number of doctors per thousand populations is recorded in Hangal taluka (40.4 per thousand populations).

FINDINGS

1 Developing manpower through education, health and medical care etc. will bring about a change in skills, attitudes, knowledge, resourcefulness, work motivation, physical ability etc, which in turn leads to the aggregate enrichment of the human society.

2. It is observed by the review of literature that majority of the studies have focused on public health services both at the national and state level. So it is keenly observed that there will be a great dearth on the study of private medical manpower at all levels i.e., in national level, state level, at regional level. These gaps in the above studies made to take up the present study.

3. As per the socio-economic profile of the study area, it was found that the district had a total area of 4823 sq.kms and its share in terms of geographical area is 2.5% of total state area. The district had 19 hobalies, 208 GPs (3.69% of the state) 691 in habited villages, 7 un-inhabited villages, 9 town / municipalities as per the year 2007-08.

4. There were totally 533 private medical institutions which incorporate allopathic, ayurvedic & other registrated private medical practioners in 7 talukas of Haveri district, out of which 108 are general hospitals, 45 nursing homes and 380 are other clinics. The maximum no. of clinics are existed in Ranebennur taluka to the extent of 148 its share in the district is 38.9%.

5. On an average 110.5 private institutions per thousand sq.km area were found in the entire district of Haveri. Similarly there has been substantial enhancement in the number of beds in all 7 talukas of Haveri district on an average number of beds per 1000 population in the district is recorded to the tune of 0.53. But the highest number of beds per 1000 population was found in Haveri taluka to the extent of 1.34 on the contrary the lowest number of beds per 1000 population was found in Savanur taluka to the tune of 0.13, It is also found that 158.6 beds were recorded per thousand sq.km in the entire district.

6. It is too found that 533 private medical practitioners were existed in the district of Haveri during 2009-

10. Out of which allopathic doctors were 155 and remaining (378) were ayurvedic doctors.

7. There were 380 private para medical manpower in the entire district of Haveri. It was noteworthy to mention that highest number of private medical manpower and para medical manpower was found in Ranebennur taluka per 1000 population. It was recorded to the extent of 0.77 & 0.34 respectively. But in the entire district on average number of private MMP per 1000 population and para medical manpower 1000 population were recorded in the district to the tune of 0.37 & 0.26 respectively.
8. There will be a lot of difference between number of public and private doctors. It is almost found that 1:5 and one more note worthy finding here is that number of public MMP per 1000 population is just 0.057 and number of private MMP per 1000 population is almost 110.5. So it is totally incomparable. The number of public doctors (92) less than number of private doctors (533) which works out to 1:5.

CONCLUSION

By observing the studied on health care, majority of the studies have focused on public health services both at the national and state level. So it is keenly observed that there will be a great dearth on the study of private medical man power at all levels (i.e. national state and even at regional level) .These gaps in the above studies made to attempt the present study.

The comprehensive picture of the various aspects in the district of Haveri will certainly help to determine the status of health in general and medical manpower in particular per thousand population in the districts. Moreover with the above socio-economic and demographic profile of the district, the investigator will surely attempt to estimate the quantum of private medical manpower in order to recognize the present health scenario of the district. Despite the impressive public health infrastructure, it is cause of the concern that only about 20% services are being provided by the public sector, while the private sector provides almost 80% of the medical care services.

The findings regarding private medical man power and infrastructure in turns of beds etc. it is clear that there will be a lot of difference between the figures of public & private doctors. It is almost 1:5 & one more note worthy point here is that number of public medical man power per thousands populations is just 0.057 and number of private MMP per 1000 population is almost 110 so it is totally incomparable. These results confirm that there exists close nexus between private medical amenities & need of the people of study area. So it also proves that the access to private medical amenities for the people of the study area is quite adequate.

SUGGESTIONS

1. Health & family welfare programmes in our country are mainly meant for public health sector, it means these programmes segregate the private health services, so in this connection it is worthwhile to suggest that H.F.W.P. should be implemented by involving even private medical personnel without making any discrimination.
2. Now a day's public health [services] sector is in keen Competition with private medical sector, but it is surely & certainly recommended that those two sectors must go hand in hand for the smooth functioning of the over all welfare of the people.
3. It is strictly suggested that entire private medical man power should be controlled & regulated by the state from the health point of view.
4. It is eagerly suggested that a cordial relation & co-ordination should be maintained in between public & private medical care not only for the implementation of public health programmes but even for the betterment of health status of the people.
5. Efforts should be made to involve non government practitioner's (private medical service providers), local leaders & voluntary agenesis in health care programmes.

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ISSN : 2249-2437 RESEARCH

A STUDY OF RELATIONSHIP BETWEEN LEADERSHIP BEHAVIOUR AND MOTIVATIONAL BEHAVIOUR OF HEADS OF PRIMARY SCHOOLS

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ABSTRACT

The present study is based on the assumption that the leadership behaviour and motivational behaviour of Heads of primary schools has an effect on the behaviour of organisation, which will influence the climate and culture of the institution. A growing body of evidence confirms that quality teaching is the single most influential determinant of academic success of an organization. Indeed, the quality and efficacy of Heads is very much influenced by effective leadership behaviour and motivational behaviour. Motivational behaviour in a limited sense is Heads personal sense of responsibility. The extent and dimensions of motivational behaviour are determined by the leadership behaviour style of the Heads of primary schools.

INTRODUCTION

The relevance of leadership behaviour and motivational behaviour are very crucial to the long-term growth of any educational system around the world. They probably rank alongside professional knowledge and skills, center competencies, educational resources and strategies as the veritable determinants of educational success and performance. Professional knowledge, skills and center competencies occur when one feels effective in one's behavior. In other words, professional knowledge, skills and competencies can be seen when one is taking on and mastering challenging tasks directed at educational success and performance (Filak and Sheldon, 2003). The above factors are closely similar to efficacy, and, of course, it is well known that many Heads lose or fail to develop self-efficacy within educational settings (Dweck, 2010). In addition, leadership behaviour and motivation to work are very essential in the lives of Heads because they form the fundamental reason for working in life. While almost every Head works in order to satisfy their needs in life, he or she constantly agitates for need satisfaction.

LEADERSHIP BEHAVIOUR

Heads of the institution must be the principal-learner and the principal-teacher of all things leadership. Becoming an effective school teacher-leader is not achieved simply by sharing in decision-making. In fact, shared decision-making, where the decisions focus on work conditions rather than organizational growth and improvement, will not increase motivation at all. And should the decision-making process have an element of disingenuousness, then one can expect job dissatisfaction to increase. If Heads of the institution are to participate in meaningful organizational improvement, leadership skill development is critical, and the school principal is the appropriate person of leadership skills.

MOTIVATIONAL BEHAVIOUR

It is necessary for a school Head to establish by means of honest self evaluation what the true nature is of his or her attitude towards staff. It is important that this introspection is honest and open, because experience has shown that it will determine the way a Head leads and motivates the staff. It is indubitably true that the way in which Heads treat their staff will, to a great extent, be determined by their outlook on life, their attitudes to motivation as the basis of human behaviour, and the judgement they make of people's behaviour in a specific working situation.

When considering motivation, one should think firstly of their own needs and try to put oneself "in the shoes" of the other. If members of staff are behaving badly, are poorly motivated, under performing or even showing antagonism towards them, there will be a reason why. It may be that ones attitude towards them or leadership style creates resentment in them. One should always consider this possibility. This does not mean to say, however, that all demotivating factors are solvable. Issues such as pay, class sizes, working in schools where the children are mainly of lower ability may negatively impact on teacher motivation and there may be little you can do about it.

OBJECTIVES OF THE STUDY

1. To study the significant difference between male and female Heads of primary schools with respect to motivational behaviour and its dimensions that is

1. Achievement
2. Influence
3. Extension
4. Control
5. Affiliation
6. Dependence

2. To study the significant difference between male and female Heads of primary schools with respect to leadership behaviour and its dimensions

1. Consideration
2. Initiating structure

3. To study the significant difference between graduate and post graduate Heads of primary schools with respect to motivational behaviour and its dimensions that is

1. Achievement
2. Influence
3. Extension
4. Control
5. Affiliation
6. Dependence

4. To study the significant difference between graduate and post graduate Heads of primary schools with respect to leadership behaviour and its dimensions

1. Consideration
2. Initiating structure

5. To study the significant difference between Heads of primary schools belonging to different types of management (government, aided and unaided) with respect to motivational behaviour and its dimensions that is

1. Achievement
2. Influence
3. Extension
4. Control
5. Affiliation
6. Dependence

6. To study the significant difference between Heads of primary schools belonging to different types of management (government, aided and unaided) with respect to leadership behaviour and its dimensions that is

1. Consideration
2. Initiating structure

VARIABLES CONSIDERED IN THE STUDY

The variables used for the study were,

I. Leadership behaviour : The two dimensions of Leadership behaviour are:

1. Consideration and
2. Initiating Structure

II. Motivational behaviour : The six dimensions of Motivational behaviour are:

1. Achievement
2. Influence
3. Extension
4. Control
5. Affiliation
6. Dependence

Moderator Variables

- Gender (male and female),
- Educational qualification (graduate and postgraduate),
- Types of management (Government, aided and unaided) and

SAMPLE

In this research random sampling will be used as it was taught to be the most convenient in to find out the opinion of Heads of primary schools. A study of relationship between leadership behaviour and motivational behaviour of primary school Heads for this purpose the random sampling technique will be used for selection of population from different schools. For the present study, a total number of 100 primary school Heads of Dharwad District were selected by using random sampling technique.

TOOLS USED

For the present study the following tools are used

- Leadership Behaviour Description Questionnaire by E.A. Fleishman (1973)
- Motivational Analysis of Organisational Behaviour Questionnaire (MAO-B) by Udai Pareek (2002)

STATISTICAL ANALYSIS

The mean, standard deviation and 't' value was computed for different groups on the basis of scores of secondary school teacher on their responses.

DATA ANALYSES AND INTERPRETATION

The investigator has compared different characteristics like gender (male and female), educational qualification (graduate and postgraduate), types of management (Government, aided and unaided) with respect to motivational behaviour and its dimensions (that is achievement, influence, extension, control, affiliation and dependence) and leadership behaviour and its dimensions (Consideration and Initiating structure) of Heads of primary schools by applying the unpaired t-test, one way ANOVA followed by Scheffe's multiple post hoc procedures and results are presented.

Hypothesis: There is no significant difference between male and female Heads of primary schools with respect to motivational behaviour and its dimensions i.e.

1. Achievement
2. Influence
3. Extension
4. Control
5. Affiliation
6. Dependence

To test this hypothesis, the t-test was applied and the results are presented in the following table.

Table - 1 : Results of t-test Between Male And Female Heads Of Primary Schools With Respect To Motivational Behaviour And Its Dimensions

Variable	Gender	Mean	Std. Dv.	t-value	p-value	Signi.
Motivational Behaviour	Male	182.2182	10.4273	5.0174	< 0.05	S
	Female	171.4524	10.5280			
Achievement	Male	59.5636	7.7119	4.1817	< 0.05	S
	Female	54.3571	2.6853			
Influence	Male	40.3091	3.5946	1.6988	> 0.05	NS
	Female	38.9762	4.1171			
Extension	Male	16.9818	1.7690	-0.8245	> 0.05	NS
	Female	17.2619	1.4989			
Control	Male	26.8727	3.8445	3.3352	< 0.05	S
	Female	24.2381	3.8686			
Affiliation	Male	25.9091	5.0342	2.5514	< 0.05	S
	Female	22.9762	6.2878			
Dependence	Male	12.5818	3.1605	-1.7022	> 0.05	NS
	Female	13.6429	2.8782			

From the results of above table, it can be observed that,

- The male and female Heads of primary schools differ significantly with respect to motivational behaviour ($t = 5.0174$, $p < 0.05$) at 0.05% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the male and female Heads of primary schools have different motivational behaviour. It means that male Heads of primary schools are higher on motivational behaviour compared to female Heads of primary schools.
- The male and female Heads of primary schools differ significantly with respect to dimension of motivational behaviour that is achievement ($t = 4.1817$, $p < 0.05$) at 0.05% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the male and female Heads of primary schools have different achievement. It means that male Heads of primary schools are higher on dimension of motivational behaviour that is achievement compared to female Heads of primary schools.
- The male and female Heads of primary schools do not differ significantly with respect to dimension of motivational behaviour that is influence ($t = 1.6988$, $p > 0.05$) at 0.05% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the male and female Heads of primary schools are similar on influence.
- The male and female Heads of primary schools do not differ significantly with respect to dimension of motivational behaviour that is extension ($t = -0.8245$, $p > 0.05$) at 0.05% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the male and female Heads of primary schools are similar on extension.
- The male and female Heads of primary schools differ significantly with respect to dimension of motivational behaviour that is control ($t = 3.3352$, $p < 0.05$) at 0.05% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the male and female Heads of primary schools have different control. It means that male Heads of primary schools are higher on dimension of motivational behaviour that is control compared to female Heads of primary schools.
- The male and female Heads of primary schools differ significantly with respect to dimension of motivational behaviour that is affiliation ($t = 2.5514$, $p < 0.05$) at 0.05% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the male and female Heads of primary schools have different affiliation. It means that male Heads of primary schools are higher on dimension of motivational behaviour that is affiliation compared to female Heads of primary schools.

- The male and female Heads of primary schools do not differ significantly with respect to dimension of motivational behaviour that is dependence ($t = -1.7022$, $p > 0.05$) at 0.05% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the male and female Heads of primary schools are similar on dependence.

Hypothesis : There is no significant difference between male and female Heads of primary schools with respect to leadership behaviour and its dimensions

1. Consideration
2. Initiating structure

To test this hypothesis, the t-test was applied and the results are presented in the following table.

Table - 2 : Results of t-test Between Male And Female Heads Of Primary Schools With Respect To Leadership Behaviour And Its Dimensions

Variable	Gender	Mean	Std. Dv.	t-value	p-value	Signi.
Leadership behaviour	Male	149.7273	9.5983	2.5732	< 0.05	S
	Female	145.6190	4.3949			
Consideration	Male	86.5818	6.0757	2.0646	< 0.05	S
	Female	84.4048	3.5686			
Initiating structure	Male	63.1455	5.8481	1.7987	> 0.05	NS
	Female	61.2143	4.3084			

From the results of above table, it can be observed that,

- The male and female Heads of primary schools differ significantly with respect to leadership behaviour ($t = 2.5732$, $p < 0.05$) at 0.05% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the male and female Heads of primary schools have different leadership behaviour. It means that male Heads of primary schools are higher on leadership behaviour compared to female Heads of primary schools.
- The male and female Heads of primary schools differ significantly with respect to dimension of leadership behaviour that is consideration ($t = 2.0646$, $p < 0.05$) at 0.05% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the male and female Heads of primary schools have different consideration. It means that male Heads of primary schools are higher on dimension of leadership behaviour that is consideration compared to female Heads of primary schools.
- The male and female Heads of primary schools do not differ significantly with respect to dimension of leadership behaviour that is initiating structure ($t = 1.7987$, $p > 0.05$) at 0.05% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the male and female Heads of primary schools are similar on initiating structure.

Hypothesis : There is no significant difference between graduate and post graduate Heads of primary schools with respect to motivational behaviour and its dimensions i.e.

1. Achievement
2. Influence
3. Extension
4. Control
5. Affiliation
6. Dependence

To test this hypothesis, the t-test was applied and the results are presented in the following table.

Table - 3 : Results of t-test Between Graduate And Post Graduate Heads Of Primary Schools With Respect To Motivational Behaviour And Its Dimensions

Variable	Education	Mean	Std. Dv.	t-value	p-value	Signi.
Motivational behaviour	Graduate	174.4800	11.4486	-2.7581	< 0.05	S
	Postgraduate	180.8298	11.2062			
Achievement	Graduate	56.1800	6.1135	-1.7632	> 0.05	NS
	Postgraduate	58.5106	6.8995			
Influence	Graduate	38.7000	3.4538	-2.8068	< 0.05	S
	Postgraduate	40.8298	4.0126			
Extension	Graduate	17.0800	1.5887	-0.1410	> 0.05	NS
	Postgraduate	17.1277	1.7398			
Control	Graduate	25.2800	3.9746	-1.1344	> 0.05	NS
	Postgraduate	26.2128	4.1228			
Affiliation	Graduate	24.3200	5.8360	-0.5601	> 0.05	NS
	Postgraduate	24.9787	5.7388			
Dependence	Graduate	12.9200	2.9335	-0.3992	> 0.05	NS
	Postgraduate	13.1702	3.2392			

From the results of above table, it can be observed that,

- The graduate and postgraduate Heads of primary schools differ significantly with respect to motivational behaviour ($t=-2.7581$, $p<0.05$) at 0.05% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the graduate and postgraduate Heads of primary schools have different motivational behaviour. It means that postgraduate Heads of primary schools are higher on motivational behaviour compared to graduate Heads of primary schools.
- The graduate and postgraduate Heads of primary schools do not differ significantly with respect to dimension of motivational behaviour that is achievement ($t=-1.7632$, $p>0.05$) at 0.05% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the graduate and postgraduate Heads of primary schools are similar on achievement.
- The graduate and postgraduate Heads of primary schools differ significantly with respect to dimension of motivational behaviour that is influence ($t=-2.8068$, $p<0.05$) at 0.05% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the graduate and postgraduate Heads of primary schools have different influence. It means that postgraduate Heads of primary schools are higher on dimension of motivational behaviour that is influence compared to graduate Heads of primary schools.
- The graduate and postgraduate Heads of primary schools do not differ significantly with respect to dimension of motivational behaviour that is extension ($t=-0.1410$, $p>0.05$) at 0.05% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the graduate and postgraduate Heads of primary schools are similar on extension
- The graduate and postgraduate Heads of primary schools do not differ significantly with respect to dimension of motivational behaviour that is control ($t=-1.1344$, $p>0.05$) at 0.05% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the graduate and postgraduate Heads of primary schools are similar on control.
- The graduate and postgraduate Heads of primary schools do not differ significantly with respect to dimension of motivational behaviour that is affiliation ($t=-0.5601$, $p>0.05$) at 0.05% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the graduate and postgraduate Heads of primary schools are similar on affiliation.
- The graduate and postgraduate Heads of primary schools do not differ significantly with respect to dimension of motivational behaviour that is dependence ($t=-0.3992$, $p>0.05$) at 0.05% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the graduate and postgraduate Heads of primary schools are similar on dependence.

Hypothesis : There is no significant difference between graduate and post graduate Heads of primary schools with respect to leadership behaviour and its dimensions

1. Consideration
2. Initiating structure

To test this hypothesis, the t-test was applied and the results are presented in the following table.

Table - 4 : Results of t-test Between Graduate And Post Graduate Heads Of Primary Schools With Respect To Motivational Behaviour And Its Dimensions

Variable	Education	Mean	Std. Dv.	t-value	p-value	Signi.
Leadership behaviour	Graduate	145.9400	6.4188	-2.6219	<0.05	S
	Postgraduate	150.0851	9.0092			
Consideration	Graduate	84.3200	4.4696	-2.6394	<0.05	S
	Postgraduate	87.0426	5.6528			
Initiating structure	Graduate	61.6200	5.0301	-1.3263	>0.05	NS
	Postgraduate	63.0426	5.5323			

From the results of above table, it can be observed that,

- The graduate and postgraduate Heads of primary schools differ significantly with respect to leadership behaviour ($t=-2.6219$, $p<0.05$) at 0.05% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the graduate and postgraduate Heads of primary schools have different leadership behaviour. It means that postgraduate Heads of primary schools are higher on leadership behaviour compared to graduate Heads of primary schools.

- The graduate and postgraduate Heads of primary schools differ significantly with respect to dimension of leadership behaviour that is consideration ($t=-2.6394$, $p<0.05$) at 0.05% level of significance. Hence, the null hypothesis is rejected and alternative hypothesis is accepted. It means that, the graduate and postgraduate Heads of primary schools have different consideration. It means that postgraduate Heads of primary schools are higher on dimension of leadership behaviour that is consideration compared to graduate Heads of primary schools.
- The graduate and postgraduate Heads of primary schools do not differ significantly with respect to dimension of leadership behaviour that is initiating structure ($t=-1.3263$, $p>0.05$) at 0.05% level of significance. Hence, the null hypothesis is accepted and alternative hypothesis is rejected. It means that, the graduate and postgraduate Heads of primary schools are similar on initiating structure.

Hypothesis : There is no significant difference between Heads of primary schools belonging to different types of management (Government, aided and unaided) with respect to motivational behaviour and its dimensions i.e.

1. Achievement
2. Influence
3. Extension
4. Control
5. Affiliation
6. Dependence

Table - 5: Pair Wise Comparisons Of Types Of Management (Government, Aided And Unaided) With Respect To Motivational Behaviour And Its Dimensions Of Heads Of Primary Schools By Scheffes Multiple Post Hoc Procedures

Variables	Management	Govt.	Aided	Unaided
Motivational Behaviour	Mean	173.8400	177.9700	184.1300
	Government	---	---	---
	Aided	0.2959	---	
	Unaided	0.0023*	0.1398	---
Achievement	Mean	55.2050	58.5330	59.7390
	Government	---		
	Aided	0.0910	---	
	Unaided	0.0244*	0.7906	---
Influence	Mean	38.1820	39.5330	42.9570
	Government	---		
	Aided	0.2502	---	
	Unaided	0.0000*	0.0021*	---
Dependence	Mean	12.7270	14.2000	12.1300
	Government	---		
	Aided	0.1211	---	
	Unaided	0.7413	0.0491*	---

From the results of above table, it can be observed that,

- The Heads of primary schools belonging to Government and unaided management schools differ significantly with respect to motivational behaviour at 0.05% level of significance. It means that, the Heads of primary schools belonging to unaided type of management are higher on motivational behaviour as compared to Government and aided management type of management schools.
- The Heads of primary schools belonging to Government and unaided management schools differ significantly with respect to achievement at 0.05% level of significance. It means that, the Heads of primary schools belonging to unaided type of management are higher on dimension of motivational behaviour that is achievement as compared to Government and aided management type of management schools.
- The Heads of primary schools belonging to Government and unaided management schools differ significantly with respect to influence at 0.05% level of significance. It means that, the Heads of primary schools belonging to unaided type of management are higher on dimension of motivational behaviour that is influence as compared to Government and aided management type of management schools.
- The Heads of primary schools belonging to aided and unaided management schools differ significantly with respect to influence at 0.05% level of significance. It means that, the Heads of primary schools belonging to unaided type of management are higher on dimension of motivational behaviour that is influence as compared to Government and aided management type of management schools.
- The Heads of primary schools belonging to aided and unaided management schools differ significantly with respect to dependence at 0.05% level of significance. It means that, the Heads of primary schools belonging to aided managements are higher on dimension of motivational behaviour that is dependence as compared to Government and unaided management schools.

Hypothesis : There is no significant difference between Heads of primary schools belonging to different types of management (Government, aided and unaided) with respect to leadership behaviour and its dimensions i.e.

- Consideration
- Initiating structure

Table - 6 : Pair Wise Comparisons Of Types Of Management (Government, Aided And Unaided) With Respect To Leadership Behaviour And Its Dimensions Of Heads Of Primary Schools By Scheffes Multiple Post Hoc Procedures

Variables	Management	Govt.	Aided	Unaided
Motivational Behaviour	Mean	145.5200	148.2300	152.2200
	Government	---	---	---
	Aided	0.3298	---	---
	Unaided	0.0042*	0.1760	---
Achievement	Mean	84.0910	85.7330	88.4780
	Government	---	---	---
	Aided	0.3837	---	
	Unaided	0.0240*	0.1448	---

From the results of above table, it can be observed that,

- The Heads of primary schools belonging to Government and unaided management schools differ significantly with respect to leadership behaviour at 0.05% level of significance. It means that, the Heads of primary schools belonging to unaided type of management are higher on leadership behaviour as compared to Government and aided management type of management schools.
- The Heads of primary schools belonging to Government and unaided management schools differ significantly with respect to consideration at 0.05% level of significance. It means that, the Heads of primary schools belonging to unaided type of management are higher on leadership behaviour and its dimension that is consideration as compared to Government and aided management type of management schools.

CONCLUSION AND IMPLICATIONS

Following recommendations were made for the improvement of the teaching-learning situation in the higher education institutions. Heads of schools should show honest, fair, polite, kind hearted and punctual. Heads of schools should assign the examination duties among his teachers justly and fairly and head should ensure evaluation of teachers' performance regularly. Heads of schools should avoid practicing the factors like apprehend for teachers transfer, stiff in their dealings and forcefully expression of his opinions for better performance of the teachers. The Heads of schools may be empowered to utilize sufficient funds for motivating teachers and students. A special training course may be arranged for educational managers, administrators and supervisors for achieving competency in motivation techniques. The heads of schools must have a broad mind. They must give importance to their leadership rather than to other things like scale of pay, gender, management, teaching medium of the school.

This study leads to the conclusion that, the prevalent system of making selection of Heads of schools need serious though and should immediately be revamped. Now the time is ripe for a switch over from old system of making selection to the well planned system.

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SUSTAINABLE DEVELOPMENT FROM THE PERSPECTIVE OF CLIMATIC CONDITION IN YAZD TOWNSHIP

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ABSTRACT

Determining the indicators of sustainable development in each area is needed exact planning and identifies the resources of limitations and potentials. Whereas climate is one of the main factors of natural environment and it has more influence on the others natural factors especially human activities, so it is one of the important factors which is determine the feasibility of develop in each area. Thus determining the climatic limitations and potentials are seems necessary to attain the permanent develop. The climatic elements, their analysis and results are useful in the majority of expansional and regional planning, that's why without paying attention to them, these planning will confront to big problems.

The paper has paid duly attention to the survey and analysis the climatic parameters which have effect on agriculture such as temperature, precipitation, relative humidity, sunshine and freezing days at al during the year's ranges from 1945 to 2005 and finally determine the area climate.

Keyword : sustainable development, climatic parameters, agriculture, Yazd

INTRODUCTION

Defining the sustainable development indexes in each area are needs accurate planning and identifies the areas limitations and potentials. Since the weather is one of the main factors in natural environment and it has so infect on the other elements and human activities. Thus it is an important factor to determine the development capacity in each area. Climate has a strong influence on agricultural production, considered as the most weather-dependent of all human activities, with socio-economical impacts whose severity varies from one region to another. The positive and negative effects of daily climate fluctuations on agriculture are known at the local or regional level. The sector has considerable ability to adapt in the short term. Developing countries are especially vulnerable to climate change because agricultural productivity depends on the climate.

Climate parameters and their analysis and results are useful in the majority of regional- development planning. Other ways these planning might be encounter with problems. Therefore among of climatic elements, temperature and precipitation can be as a facility for planner to take a logical decision.

According to the climatic- geographic situation and importance of agriculture in Yazd Township, determining the climatic limitations and potentials of the area under study and finally sustainable development seems necessary. Insomuch, separate comparing the climatic factors is not useful and explanatory the correct climatic property in different areas, thus using the statistical methods might be indicate the generally situation of climatic events in different areas.

SUSTAINABLE DEVELOPMENT

The term sustainable development means that builders, architects, designers, community planners, and real estate developers strive to create buildings and communities that will not deplete natural resources. The goal is to meet today's needs using renewable resources so that the needs of future generations will be provided for. Sustainable development attempts to minimize greenhouse gases, reduce global warming, preserve environmental resources, and provide communities that allow people to reach their fullest potentials.

The emphasis of sustainable development is on the conservation of environmental resources. However, the concept of sustainable development is often broadened to include the protection and development of human resources. Communities founded on principles of sustainable development may strive to provide abundant educational resources, career development opportunities, and social services.

Sustainable development, as defined by the Brundtland Commission (1987) is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs"

Sustainable development as defined by the World Commission on Environment and Development is development which meets the needs of the present without compromising the ability of future generations to meet their own needs.

Sustainable development is development that takes the impact on the environment into account and tries to minimize environmental damage.

The definition of sustainable development is a broad concept that implements meeting the economic, environmental, and sociopolitical needs of the present generation without endangering future generations.

STUDY AREA

Yazd city, the capital of Yazd province, is located between the latitudes 31° 40´ and 32° 18´ N. and longitudes 54° 10´ and 54° 50´ E. (Fig 1). Yazd with an area of 2462 sq. km. is situated at an oasis where the Dasht-e Kavir desert and the Dasht- e Lut desert meet in a valley between Shirkoh, the tallest mountain in the region at 4075 meters above sea- level, and Kharanagh. The city itself is at altitude of 1203 meters from the sea- level.

Fig. 1: Situation of Yazd Township in Yazd province

The city of Yazd is located in the eastern part of central Iran situated on the high, desert plateau that forms much of the country.Being located beside the central mountains, far from the sea, adjacent to the Kavir and in the shadow rainy region, Yazd has a climate which mostly resembles dry desertic climate. The climate is generally very dry, with cold winters and hot summers. The temperature tends to fluctuate dramatically, even between night and day, but spatially summer to winter. Little rain along with high water evaporation, relatively low dampness, heat and great temperature changes are among the factors making this province, one of the driest parts of Iran. The only moderating climatic factor is height and so, there is a pleasant climate dominant in Shirkoh heights.

In 2007 it had an estimated population of 5, 26,276. It is the largest and the most inhabited town in the province.

Objectives : The goals of the paper are as follows :

1- Determining the climatic limitations and potentials of the region for short and long time planning in agriculture and finally gaining to sustainable development.

2- Determining the climate of the region.

HYPOTHESIS

1. The area under study has suitable climatic condition for gaining sustainable development.

ANALYSIS AND DISCUSSION

TEMPERATURE

Temperature is one of the main climatic parameters and has a main role in the human beings life. Temperature determine the plant distribute in different site of the world, control the photosynthesis and breath of plant and effect on the flowering, distribute of photosynthesis and plants puberty. Minimum and maximum of temperature have undesirable effect on physiologic reproduces and prevent the growing plant. In the areas where has desirable thermal, increasing temperature causes grown fast of the plants.

Only if the other environmental factors such as foods, water and sunshine would not been limiter, Altitude and latitude are two factors having effect on temperature in the area. The area under study is located in latitude 31° N and is around 4° far from the Persian Golf as a moisture source, so these both are influence on annual and day and night difference degree of temperature. Because in this situation the area is following the arid zone condition of Iran Also, the role of altitude is effective in adjusting the temperature. The area is situated in 1170 meters from the sea level and situated in the arid zone of Iran, so it cause high evaporation, seasonal and day and night difference in degree of temperature and direct radiation. Therefore, mean daily temperature, minimum and maximum daily of temperature, absolute minimum and maximum of temperature were analyzed and their results are indicated in Fig. 2.

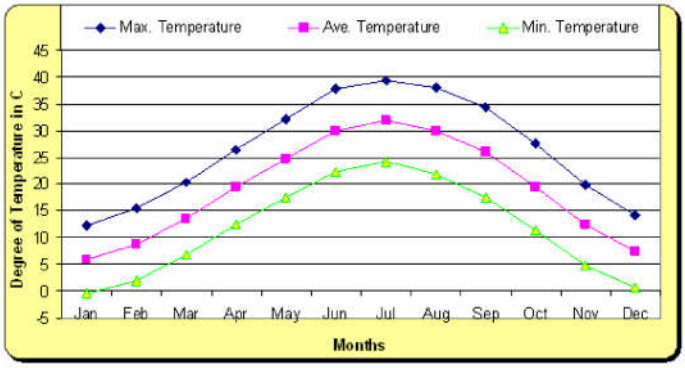

Fig. 2 : Distribution of temperature in Yazd

According to the result, mean daily temperature is 19.1°C; absolute minimum and maximum daily of temperature is happened respectedly on 28 Dec. 1963 by

-16ºC and 4 Aug. 1982 by 45.6ºC. The average of minimum temperature and maximum temperature is also respectedly 11.7ºC and 26.5ºC.

PRECIPITATION

Usually foremost, developing agriculture in each area is depends directly on precipitation, especially rainfall. Effect amount of precipitation in holding humidity and providing the plants water needs in each area is most important. Whereas one of the main ways to supply water for plants in the agriculture areas is precipitation, therefore role of precipitation is most important in agriculture and it is available such as dew, fog, neve, soft rime, mizzle, rain and snow. Also precipitation is a prevailing climatic element that influence on congeries and seating cultivational systems and choice of farmers agricultural operation. While it is along with fluctuate, it became a climatic danger for cultivation. Relative importance of water in cultivation products is changes in terms of geographic and climatic condition and also it is depended on amount and temporal distribution. Because of this, studying the particularity of precipitation and identify the humidity of each area is important for growing crops. In this study, total monthly and annually of precipitation, maximum and minimum amount of precipitation, highest and lowest amount of precipitation in terms of monthly and seasonally were analyzed and their results are shown in Fig. 3.

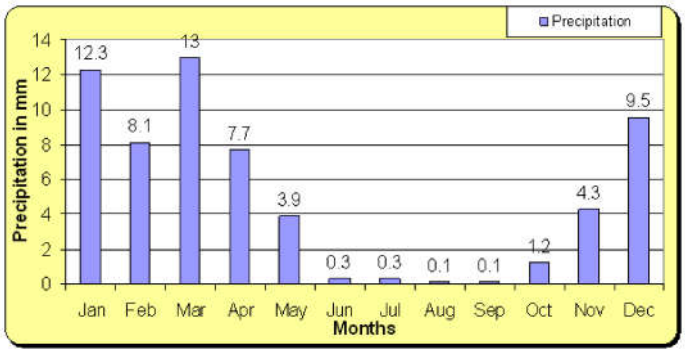

Fig.3: Distribution of precipitation in Yazd

According to the results, average amount of precipitation in the region is 60.5 mm. the maximum of precipitation is belonging to winter season whereas in this season, amount of precipitation is 33.4 mm and minimum of precipitation is belonging to summer season with amount of 0.5 mm.

Also March and August are respectedly the highest and lowest months in terms of precipitation along with 13 mm and 0.1 mm. so the precipitation is started from October to May which is last around 8 months.

RELATIVE HUMIDITY

Relative humidity is important in agriculture because whatever relative humidity increased, the evaporation will be decreased and the evaporation will be decreased so fast while saturation air of neighbor's layer replaced with the dry air by wind. Thus relative humidity between the cultivation and harvest cause loss the water arising with evapotranspiration in the region. High humidity of atmosphere has useful effects on growing plants. So that amount of water which is needs for plants are supplied from it's around saturated air. Humidity has direct effect on photosynthesis and decrease the transpiration

On the other hand, some plants are sensitive to high humidity and also might be provided a situation for growing bacteria and attack the mycosis, owing to this, low humidity decrease attaching of mycosis.

In this study, mean monthly relative humidity, minimum and maximum of relative humidity and absolute minimum and maximum relative humidity were analyzed and their results are shown in Fig. 4.

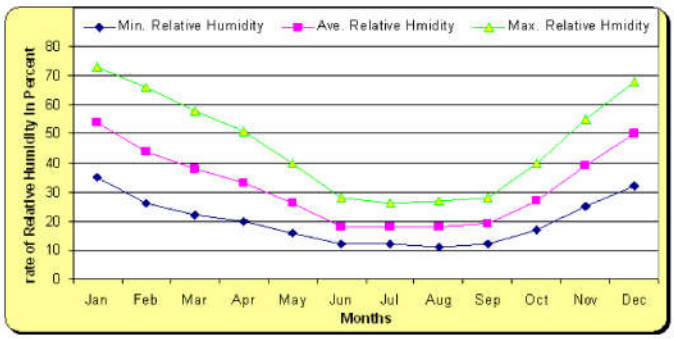

Fig.4: Distribution of relative humidity in Yazd

Referring to the results, mean of relative humidity in the region is around 32 percent which is started to increase in December and lasted to April. In the other months the range of relative humidity is lower than the annual mean. Maximum of relative humidity is happened in Jun. 1977 with the range of 95 percent and minimum of relative humidity is happened in June, 1965 with the range of 6 percent.

SUNSHINE

The sun is the main source of energy for all the creatures. Its forces, quantity and long time is depended on latitude and longitude, season and area climatic condition. Radiation is main factor to increase the transpiration. Also dye ability and pollination are depended on radiation.

Summer plants take the need radiation in the minimum time thus; they will grow sooner than the winter plants.

The harvest will be decrease if the numbers of cloudy days increase. Also radiation is as a control factor of other climatic elements such as temperature,

evapotranspiration, precipitation etc. And it has effect on human activities.

One of the methods to calculate radiation is using data of sunshine in terms of annually and monthly. Total hours of sunshine in the region is 3214.6 hours in a year and minimum and maximum of sunshine is happened respectedly in January with 190.3 hours) and July with 345.7 hours (Fig. 5).

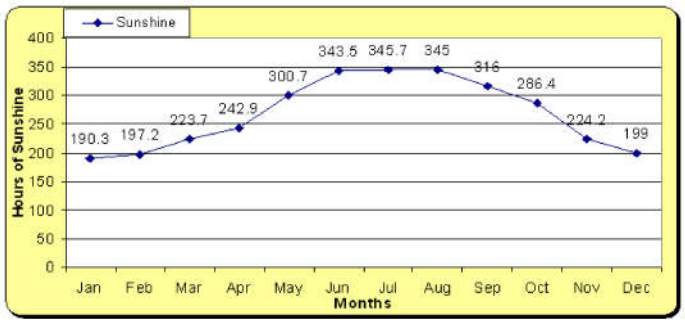

Fig. 5: Distribution of sunshine in Yazd

FROST DAYS

Frost is the main climatic indexes that study about it seem important. Frost which damage the plants identify the last of growing season which happened between the last one in spring season and the first one in autumn season. Whatever this time is short, the plant will be ripe and it's potential product ability will be decreased. Thus, having knowledge about number of frost days during the growing stage and also at the end of growing stage in autumn and winter are important. Because passing from threshold under zero degree and zero point of growing cause to decrease plants activity and stop the plants physiology's activity. But happening frost in the beginning of growing stage cause irreparable damages to crops and providing continue the frost days cause disappear al the harvest. Frost day is a day that minimum temperature gets under the zero degree. So according to the analysis and results, there are 51 frost days in the region. So, the frost day is started from October to March and the maximum day of frost is happened in January with 19.2 days (fig. 6).

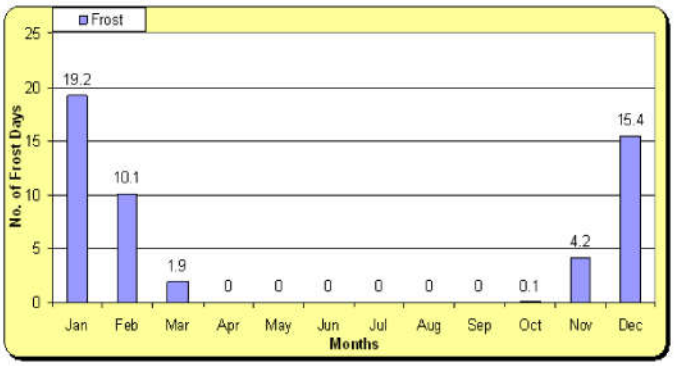

Fig. 6: Distribution of frost days in Yazd

CLIMATIC CLASSIFICATION OF THE REGION

The purpose of classification is to organize a set of data or information about something to effectively communicate it in an informative way. Classification helps synthesize information into smaller units that are more easily understood. When considering the Earth's climate, there is such an enormous amount of information that one has to break it down into areas of commonality to easily understand it. Climatologists have therefore created several ways to organize the wealth of information about Earth's climate to bring order and understanding to it. There are three fundamental types of classifications used in climatology as followes:

First there are empirical systems of classification that are based on observable features. Climates are grouped based on annual averages and seasonal extremes. The Koppen system discussed below is an empirical system based on observations of temperature and precipitation. These are two of the easiest climate characteristics that can be measured, and probably the ones with the longest historical record. It's fairly easy to collect air temperature readings with a thermometer and precipitation with some sort of collecting device that can measure the amount of precipitation.

Genetic classification systems are those based on the cause of the climate. A genetic system relies on information about the climatic elements of solar radiation, air masses, pressure systems, etc. These are inherently the most difficult classifications to create and use because of the multitude of variables needed.

Applied classification systems are those created for, or as an outgrowth of, a particular climate-associated problem. The Thornthwaite classification system is one based on potential evapotranspiration and thus groups climates based on water requirements. Research conducted by C.W. Thornthwaite and his associates attempted to formulate a water budget technique that assessed water demand under different environmental conditions. His classification system grew out of the issue of trying to predict the supply and demand for water in different climate regions.

In the paper, climate of the region has determined through Demartonne and Koppen methods as follow:

I. DEMARTONNE CLASSIFICATION SYSTEM

Among the climatic classification methods, the best and simple one to study climatic situation in each area has given by Emanuel Demartonne. Due to study of climatic characteristics of each area and present map of climatic classification, Demartonne has presented a method to determine drought. In this method there is an empirical relationship between temperature and rate of moisture as follow:

La = p/ (t + 10)

In this formula :

P : average of rainfall in mm.

T : average of annual temperature in C.

Demartonne determined 7 type of climate based on the formula (table 1). So, according to this formula, the dry coefficient in the region (2.1) is less than 4.9 (table 1), so it shows that the climate in the region is arid.

Table No. 1 : Ranges of Dry Coefficient from Demartonne

Climatic type	Ranges of Dry Coefficient
Arid	Less than 4.9
Semi - arid	5 - 14.1
Mediterranean	14.2 - 20.2
Semi- humid	20.3 - 24.1
Humid	24.2 - 30.6
Very humid (A)	30.7 - 49.1
Very humid (B)	More than 49.2

II. KOPPEN CLASSIFICATION SYSTEM

The Koppen climate classification is one of the most widely used climate classification systems. It was developed by Vladimir Koppen, a Russian climatologist, around 1900 (with several further modifications by Koppen himself, notably in 1918 and 1936). It is based on the concept that native vegetation is the best expression of climate; thus, climate zone boundaries have been selected with vegetation distribution in mind. It combines average annual and monthly temperatures and precipitation, and the seasonality of precipitation. The Koppen system recognizes five major climatic types; each type is designated by a capital letter.

A - Tropical Moist Climates: all months have average temperatures above 18° C.

B - Dry Climates: with deficient precipitation during most of the year.

C - Moist Mid-latitude Climates with Mild Winters.

D - Moist Mid-Latitude Climates with Cold Winters.

E - Polar Climates: with extremely cold winters and summers.

As regards, the degree of temperature in the warmest month is more than 10ºC, amount of precipitation is less than 100 mm, and 30 - 70 percent of annual precipitation is happened during the 6 cold months in the year. Also average of annual temperature is more than 18ºC. Thus, related to this method, the region climate is determined by BWh (dry and desert), (Fig. 7). BW - dry arid (desert) is a true desert climate. It is dominated by xerophytes vegetation. The additional letters h and k are used generally to distinguish whether the dry arid climate is found in the subtropics or in the mid-latitudes, respectively.

The region with this climate has the following climatic characteristics :

- Low relative humidity and cloud cover.
- Low frequency and amount of precipitation.
- Moderate to high annual temperature.
- Moderate to high monthly temperatures.

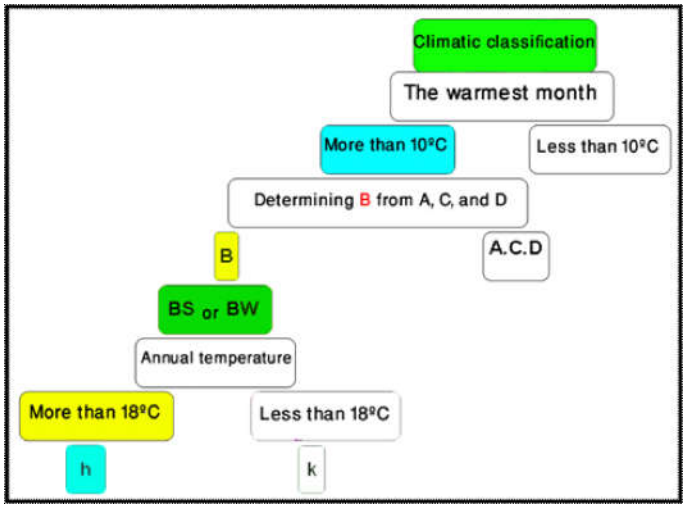

Fig. 7 : Determining the climatic classification by Koppen system in Yazd

CONCLUSION

Climate has a strong influence on agricultural production. The positive and negative effects of daily climate fluctuations on agriculture are known at the local or regional level. The majority of countries are especially vulnerable to climate change because agricultural productivity depends on the climate.

Since weather and climate can be some of the main risk factors for farming performance and management, and also gaining to sustainable development needs to know the effects of weather and climate of each region, so according to the results of the methods which have shown that the climate of the region is arid and desert, and also related to the fact that the majority of crops which available in the region are started growing from the end of March to August, so paying attention to the effects of climatic elements in the growing season is important. Referring to the results, in terms of temperature, there are some months which have high degree during the growing season, thus it might be dangerous for some high degree sensitive crops.

In terms of precipitation, because generally the amount of precipitation in the region is low and also growing season is equally happened during spring and summer season in the region and the amount of

ISSN : 2249-2437 RESEARCH

A STUDY OF ANXITY IN LEARNING ENGLISH OF SECONDARY SCHOOL STUDENTS OF HUBLI TALUK

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"Language is system and system is a complete whole it is set of connected parts or components, Language is a complete whole like the human body. The system of the body functions through different organs such as the heart, lungs, brain, ears and eyes."

- C. S. Bhandari V.A.Hinery.

These days each country needs help from other countries in political, social, economical and cultural matter. These comes English as rescue. In this connection it is apt to remember what Gatak says. "It casual search to cut, ourselves from the English language which keeps us in continuous contact with the latest thought in Europe in every field of life and culture" The international importance of the English language is clearly visible in the below.

a. It helps in international trade and industry.
b. The latest and update information in the field of science and technology Is available in English only.
c. Persion knowing English gives more opportunities for employment.
d. It leads to better understanding between the nations in the world.

OBJECTIVES OF THE STUDY

1. To know the event of language anxiety among the secondary school students.
2. To compare the difference between the government and private secondary School student's anxiety in learning English as second language.

HYPOTHESES

1. There is no significant difference between Boys and Girls students with respect to their anxiety scores in learning English.
2. There is no significant difference between Government and Private secondary Schools students with respect to their anxiety scores in learning English.

METHOD USED

Normative survey method could be the most appropriate one to study of anxiety in learning English of Secondary school students in respect of language skills like listening, speaking, reading, writing and communications so the researcher finally selected normative survey method or the present study.

SAMPLE

For the present study a total number if 250 secondary school students out of which 105 boys and 145 girls were selected by using random sampling techniques.

TOOLS USED

For the present study questionnaire was the tool which developed by the researcher. This questionnaire was included to fulfill the purpose the students't' test was applied to find wet the significant difference between different characteristics which respect to the anxiety scores and academic achievement scores.

STATISTICAL TECHNIQUE USED

The collection data were translated for the purpose of analysis for testing the hypothesis in the present study the data were subjected to a parametric statistical treatment i.e. "t" test and differential and correlation analysis were used.

DATA ANALYSIS AND RESULTS

Hypothesis : 1

There is no significant difference between boys and girls students with respect to their anxiety scores in learning English.

Table No. 1 : The result of 't' test between boys and girls students with respect to their anxiety scores in learning English.

Gender	n	mean	SD	t-Value	P-Value	Signi.
Boys	105	29.9619	8.8164	2.8127	> 0.05	S
Girls	145	26.9448	8.0336			

From the results of the above table it is observed that boys and girls students of secondary schools differ significantly with respect to their anxiety scores in learning English ($1 = 2.817, p < 0.05$) at 0.05 level of significance. Hence, the null hypothesis is rejected and alternative

hypothesis is accepted, It means that boys and girls students of secondary schools have different anxiety scores in learning English.

Hypothesis : 2

There is no significant difference between government and private secondary school students with respect to their anxiety scores in learning English.

Table No. 2 : The results of't' test between government and private secondary school students with respect to their anxiety scores in learning English.

Manage-ment	n	mean	SD	t-Value	P-Value	Signi.
Govt.	79	30.3544	8.2447	2.7487	>0.05	S
Pvt.	171	27.2222	8.4365			

From the result of the above table it is observed that the government and private secondary school students differ significantly with respect to their anxiety scores in learning English ($t = 2.7487$ $p < 0.05$) at 0.05% level of significance. Hence the null hypothesis is rejected and alternative hypothesis is accepted. It means that government and private secondary school students have different anxiety scores in learning English. In other words the students belong to government schools have higher anxiety in learning English when compared to private school students.

MAJOR FINDINGS

1. Boys and girls students of secondary school have different anxiety scores in Learning English.
2. Government and private secondary school students have different anxiety Scores in learning English.
3. Government and private secondary scores students have their similar Academic achievement scores.

SUGGESTION FOR FURTHER RESEARCH

1. The same study may be conducted for the students studying in residential Schools.
2. The same study may be conducted using large sample of + 2 stages.
3. A study may be conducted by using higher order statistical techniques.
4. A study may be conducted for the better communication purpose in all stages o f the school level.

EDUCATIONAL IMPLICATIONS

There are serious misconceptions among students towards learning English language. The students generally feel nervous while learning English as a foreign language our educational system the teachers agents and methodology we follow in our English classroom are collectively responsible for this some tiny should be done to make the teaching learning process of English without any anxiety many researcher and teachers have already find out the solution to the current problem in the field of English language education. This particular strategy of reducing anxiety in a new Endeavour and may be fruitful if used but the occasion teachers to improve the process of learning English. The study has implification for the teachers to change the classroom atmosphere from the traditional notes taking and mugging up activity to a lively, anxiety free and activity-oriented atmosphere. It implies cutting the monotony of the English language classroom. The study gives indication to employ variety f techniques like language games group works discussion self activities co-operative learning etc which give ample scope for learning without and anxiety.

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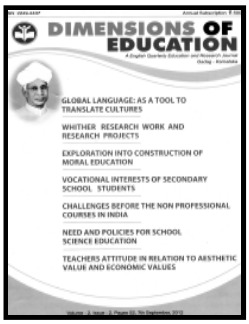

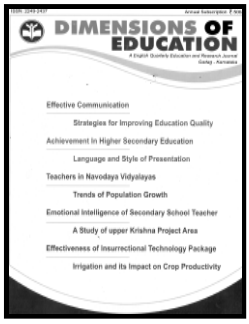

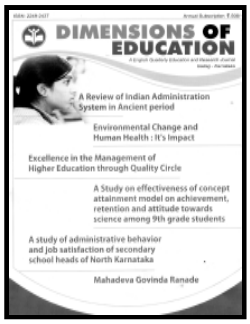

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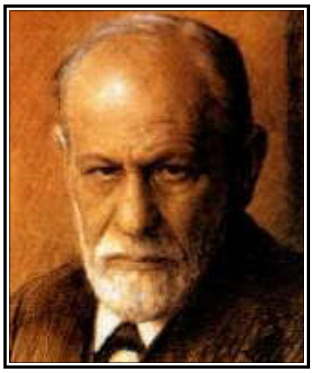
SIGMUND FREUD (1856-1989)

✍ **Dr. N. B. Kongawad,** Principal, Sana College of Education , Hubli.



"The main aim of all education is to teach the child to control its instincts. It is indeed impossible to allow it total freedom, to authorize it to follow its impulse, without constraint."

Born on May 6, 1856 in Frieberg, (Pribor, Czech Republic), Sigmund Freud studied medicine, botany, chemistry, zoology, pathological anatomy, philosophy and history. Though he did not leave any treatise specifically on education, throughout his career he scruturized therole of teachers and the authority of parents over children.

Childhood is an important topic in Freud's writings. His entire corpus is predicated on a theory of childhood and the child's development. In fact, he regarded childhood as a decisive period in the development of human being.

Freud's thinking on education begins with the confluence of two lines of enquiry, the biological and the historical. From biology, he gained an insight into the radical immaturity of the child at birth-naked and incapable of feeding itself. This vulnerability of the child compels the child to be under the protection of the adults for a much longer period as compared to other animals, and consequently comes under the influence of the adults. The child's individual history marks it for life, its traces remaining permanently etched in the man or woman.

According to Freud, the task of education has been one of dominating, or more properly repressing instincts. He adds that even in the gentlest forms of education that seek to prevent such prohibitions from degeneratin into a morbid condition, there remains a necessary minimum element of prohibition. If pleasure is replaced by reality, instinct by society and desire by rules and regulations in the process of education, then socialization is simply a process of substitution. Education, in such a case, would be the practice (techniques, procedures, methods and content) whereby adults force children to forego the immediacy of instinctual pleasure and replace it wiht a willingness to fall in line with reality. It is not the pleasure that must be foregone but the immediacy of pleasure. It is not a matter of rejecting the instincts, but rathere of adapting it and adjusting it to a natural and social reality that cannot be circumvented and in which it must find expression.

For Freud education need not secure a naive illusory substitution but should effect a sort of adaptation aiming to preserve within the context of the reality principle, all or part ofl the regulatory pleasure necessary to the psychological apparatus.

Freud asserted that desire or instinct does not necessarily lead to pleasure if it is content to act solely on immediate impulse. Infinite freedom actually tantamounts to the negation of freedom. Says Freud, "Primitive man in fact had the best of the bargain, since he experienced no restriction upon his instincts. On the other hand, his certainty of enjoying such happiness for long was minimal indeed. Civilized man has exchanged a measure of happiness for a measure of security. More precise information on the mores of present day savage peoples have taught us that there are no grounds at all for envying them the freedom of their instinctyal life. They are in fact subject to restrictins of anothe order, ones that are possibly more severe than those imposed upon themodern, civilized individual. If we quite properly tax our present day civilization with falling so short of creating a vital order calculated to make us happy-which is what we nevertheless expect of civilization - and with allowing to persist so much sufferingthat could probably be avoi8ded, and if, moreover, we endeavour, through ruthless criticism, to discover the sources of its imperfection, wesurely do not declare ourselves to be its enemies. It is also our right to expect from it gradual changes that will enabole it better to satisfy our needs and so put it beyond the reach of such criticism. Nevertheless, we may well become familiar with the idea that certain pre-existing difficulties are intimately bound up with its essence and are proof against all attempts at reform".

The essence mentioned above is the minimum amount of repression imposed by the disciplining of instincts and this is achieved by education. As such, education begins with unpleasure caused by authority.

If the ultimate goal of education is the installation of the reality principle, what does this reality principle consist of ? According to Freud it is everything that occurs to the child once it emerges from the initial state of dependence upon its mother. It is made up of all the natural or cultural factors that resist the child by introducing a hiatus between desire and its satisfaction. Reality thus seems to be foe of desire, and reality principle is yielding to unavoidable co-ercion. Thus though pleasure and reality seem to be irreconcilable, according to Freud's analysis these two principles are not contradictory but complementary.

From the above, it is evident that pleasure principlealone cannot facilitate human existence. It can succeed only when it is clubbed with the reality principle. Certain real limits are inherent in the pleasure principle. Reality, in fact, is a part of the pleasure principle, at least as an inner obstacle though not as a retgulatory principle.

The task of education is to prohibit and frustrate while discoveringa balance between the pleasure which governs physical equilibrium after socialization is completed and dthe constraints that the natural andsocial realities impose upon primitive instincs. In the words of Freud. "The main aim of all education is to teach the child to control its instincts. It is indeed impossible to allow it total freedom, to authorize it to follow its impulse, without constraint. Education musttherefore inhibit, forbid and repress, and it is to that task that it has at all times applied itself to the full. However, analysis has shown us that it is in fact such repression of instincts that causes neuroses. Education must therefore navigate its way between the Scylla of laissez-faire approach andthe charybdis of prohibition. The aim must be to strike an optimal balance, that is to work out how such education will be most beneficial andleast dangerous."

"Observation shows that to date education has been very deficient in fulfillingits mission andhas harmed children greatly. If an 'optimum' can be discovered, if itsucceeds in doing its work to thefull, then andthen only may it hope to succeed in nullifying the effect of the one of the one of the factors of disease: the action of the accidental trauma of childhood. With regard to another factor, education will never ever manage to suppress the demands of an unruly instinctual make-up."

From the above it is evident that the educator must strike a delicate balance between maintaining the child in its original brute state due to the absence of adult resistance and the neurosis that results from excessive repression.

Ego with its instinct for self-preservation and self-denial enters into conflict with those instincts whose energy is characterized by the libido, and with primitive instincts of Id. Education can manage any aspect of nature that threatend culture only when the subject finds the needed sacrifice to be in the interest of the culture.

Thus we see thegreat originality and coherence of Freud's thinking on education which is possible because there exists within the individual (psychic apparatus) tendencies requiring that indiviual to be amenable to education instead of regarding education as the training of personality to obey an external trainer.

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