

Research on Learners in a Constructivist Learning Environment

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ABSTRACT

Research in common parlance refers to a search for knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific topic. In fact, research is a part of scientific investigation. The Advanced Learner's Dictionary of Current English lays down the meaning of research as "a careful investigation or inquiry especially through search for new facts in any branch of knowledge."¹ Redman and Moray define research as a "systematized effort to gain new knowledge."² Some people consider research as a movement, a movement from the known to the unknown. It is actually a voyage of discovery. The present study used experimental research design in the research. In an experimental design, the researcher actively tries to change the situation, circumstances, or experience of participants (manipulation), which may lead to a change in behavior or outcomes for the participants of the study. The researcher randomly assigns participants to different conditions, measures the variables of interest and tries to control for variables. Therefore, experiments are often highly fixed even before the data collection starts. First of all, it is necessary to think of the best way to operationalize the variables that will be measured, as well as which statistical methods would be most appropriate to answer the research question. The accuracy and precision of the generalization depends upon the representativeness of the sample. Therefore, in order to select sample from the population, the schools were selected on the basis of their accessibility, infra-structural facilities, type of students and similar background of the teachers i.e., socio-economic status of the teachers was also comparable. Homogeneity of the sample was established by taking all PGTs who have similar salary structure and workload and only government senior secondary schools were considered which are regulated and controlled by central authority.

1. Research Methodology

The methodology is the general research strategy that outlines the way in which research is to be undertaken and among other things, identifies the methods to be used in it. These methods, described in the methodology, define the means or modes of data collection or, sometimes, how a specific result is to be calculated. Methodology does not define specific methods, even though much attention is given to the nature and kinds of processes to be followed in a particular procedure or to attain an objective.

Research in common parlance refers to a search for knowledge. One can also define research as a scientific and systematic search for pertinent information on a specific topic. In fact, research is a part of scientific investigation. The Advanced Learner's Dictionary of Current English lays down the meaning of research as "a careful investigation or inquiry especially through search for new facts in any branch of knowledge."¹ Redman and Moray define research as a "systematized effort to gain new knowledge."²

2. Approaches of conducting research

There are two approaches to conduct a research:

- **Qualitative Approach-** In Qualitative approach, the researcher analyzes the objective and study it on the basis of a previous case study or a grounded theory.

- **Quantitative Approach-** On the other hand, this approach adopts experimental and computational methods.

3. Types of research

(i) Descriptive vs. Analytical: Descriptive research includes surveys and fact-finding enquiries of different kinds. The major purpose of descriptive research is description of the state of affairs as it exists at present. In social science and business research we quite often use the term Ex post facto research for descriptive research studies. The main characteristic of this method is that the researcher has no control over the variables; he can only report what has happened or what is happening. Most ex post facto research projects are used for descriptive studies in which the researcher seeks to measure such items as, for example, frequency of shopping, preferences of people, or similar data. Ex post facto studies also include attempts by researchers to discover causes even when they cannot control the variables. The methods of research utilized in descriptive research are survey methods of all kinds, including comparative and correlational methods. In analytical research, on the other hand, the researcher has to use facts or information already available, and analyze these to make a critical evaluation of the material.

(ii) Applied vs. Fundamental: Research can either be applied (or action) research or fundamental (to basic or pure) research. Applied research aims at finding a solution for an

immediate problem facing a society or an industrial/business organization, whereas fundamental research is mainly concerned with generalizations and with the formulation of a theory. "Gathering knowledge for knowledge's sake is termed 'pure' or 'basic' research."⁴ Research concerning some natural phenomenon or relating to pure mathematics are examples of fundamental research. Similarly, research studies, concerning human behavior carried on with a view to make generalizations about human behavior, are also examples of fundamental research, but research aimed at certain conclusions (say, a solution) facing a concrete social or business problem is an example of applied research. Research to identify social, economic or political trends that may affect a particular institution or the copy research (research to find out whether certain communications will be read and understood) or the marketing research or evaluation research are examples of applied research. Thus, the central aim of applied research is to discover a solution for some pressing practical problem, whereas basic research is directed towards finding information that has a broad base of applications and thus, adds to the already existing organized body of scientific knowledge.

(iii) Quantitative vs. Qualitative: Quantitative research is based on the measurement of quantity or amount. It is applicable to phenomena that can be expressed in terms of quantity. Qualitative research, on the other hand, is concerned with qualitative phenomenon, i.e., phenomena relating to or involving quality or kind. For instance, when we are interested in investigating the reasons for human behavior (i.e., why people think or do certain things), we quite often talk of 'Motivation Research', an important type of qualitative research. This type of research aims at discovering the underlying motives and desires, using in depth interviews for the purpose. Other techniques of such research are word association tests, sentence completion tests, story completion tests and similar other projective techniques. Attitude or opinion research i.e., research designed to find out how people feel or what they think about a particular subject or institution is also qualitative research. Qualitative research is especially important in the behavioral sciences where the aim is to discover the underlying motives of human behavior. Through such research we can analyse the various factors which motivate people to behave in a particular manner or which make people like or dislike a particular thing. It may be stated, however, that to apply qualitative research in practice is relatively a difficult job and therefore, while doing such research, one should seek guidance from experimental psychologists.

(iv) Conceptual vs. Empirical: Conceptual research is that related to some abstract idea(s) or theory. It is generally used by philosophers and thinkers to develop new concepts or to reinterpret existing ones. On the other hand, empirical research relies on experience or observation alone, often without due regard for system and theory. It is data-based research, coming up with conclusions which are capable of being verified by observation or experiment. We can also call it as experimental type of research. In such a research it is necessary to get at facts first hand, at their source, and actively to go about doing certain things to stimulate the production of desired information. In such a research, the researcher must

first provide himself with a working hypothesis or guess as to the probable results. He then works to get enough facts (data) to prove or disprove his hypothesis. He then sets up experimental designs which he thinks will manipulate the persons or the materials concerned so as to bring forth the desired information. Empirical research is appropriate when proof is sought that certain variables affect other variables in some way. Evidence gathered through experiments or empirical studies is today considered to be the most powerful support possible for a given hypothesis.

Some Other Types of Research: All other types of research are variations of one or more of the above stated approaches, based on either the purpose of research, or the time required to accomplish research, on the environment in which research is done, or on the basis of some other similar factor. From the point of view of time; we can think have research either as one-time research or longitudinal research. In the former case the research is confined to a single time-period, whereas in the latter case the research is carried on over several time-periods. Research can be field-setting research or laboratory research or simulation research, depending upon the environment in which it is to be carried out. Research can as well be understood as clinical or diagnostic research. Such research follows case-study methods or in-depth approaches to reach the basic causal relations. Such studies usually go deep into the causes of things or events that interest us, using very small samples and very deep probing data gathering devices. The research may be exploratory or it may be formalized. The objective of exploratory research is the development of hypotheses rather than their testing, whereas formalized research studies are those with substantial structure and with specific hypotheses to be tested.

4. Sources of data for research

(A) PRIMARY DATA

Primary data are information collected by a researcher specifically for a research assignment. In other words, primary data are information that a company must gather because no one has compiled and published the information in a forum accessible to the public.

(B) SECONDARY DATA

Secondary data are the data collected by a party not related to the research study but collected these data for some other purpose and at different time in the past. If the researcher uses these data then these become secondary data for the current users. These may be available in written, typed or in electronic forms.

5. Research method used

The present study considers normative survey method for the present study.

6. Research design used

The present study used experimental research design in the research. In an experimental design, the researcher actively tries to change the situation, circumstances, or experience of participants (manipulation), which may lead to a

change in behavior or outcomes for the participants of the study.

Sample of the study

Sampling Procedure

The accuracy and precision of the generalization depends upon the representativeness of the sample. Therefore, in order to select sample from the population, the schools were selected on the basis of their accessibility, infra-structural facilities, type of students and similar background of the teachers.

Five secondary schools were selected randomly. 25 students will be picked up randomly from each of these schools. The 200 students selected not to undergo any communication skill classes whereas 100 students use to undergone these classes. A total of 500 students will select for the study.

7. Delimitations of the study

- The study is delimited to constructivist learning environment.
- The study is delimited to assessment of learner.
- The study is delimited to government as well as private schools.

8. Data Collection

Like any other experimental research, in single-subject experimental research two types of behavior are commonly studied-overt behavior and covert behavior. The major data collection procedure is the observation of an overt behavior. In single-subject research there are a number of ways to measure overt-behavior. Some of them are as follows:

1. Frequency measure: In single-subject research frequency measure is the popular method of data collection. In this measurement a simple counting of the number of occurrences of the behavior that is observed during a given period of time, is made.
2. Duration: It is a time-based method of data collection in which actual amount of time during which the individual completes a behavior, is determined.
3. Method of interval recording: This is also a time-based measure of data collection. It is also known as time-sampling method. In this method of data collection, the total observation period is divided into, say, two intervals-observational interval and non-observational interval.
4. Real-time observation method: This is an excellent method of data collection in single-subject experimental research. In this method the target behaviors of the study are recorded in their actual frequency, duration and order.

9. Evaluating data in single-subject experimental research

The data in single-subject experimental research are commonly evaluated through visual inspection. Statistical analysis is rarely used for analyzing the effects of experimental intervention. Through visual inspection the experimenter or

researcher examines such factors as changes in the magnitude and rate of behaviors being studied (Kazdin, 1982). According to Kazdin, for assessing the magnitude of the change, the average rate of-performance and the level at the change point should be examined. The average rate of performance is simply the number of occurrences divided by the number of sessions.

10. Strengths And Weaknesses Of Single-Subject Experimental Research

There are some advantages or strengths of single-subject experimental research. As such, this research is commonly conducted in psychology. Some of the main advantages are as follows:

- (i) The biggest advantage of single-subject experimental research is its ability to carry out a scientific investigation with only one subject (or sometimes two).
- (ii) Single-subject research allows the researcher to control the experimental situation more effectively by establishing a good, obvious and continuous measure of the dependent variable (DV) throughout the experimental situation.
- (iii) Such researches rarely require statistical tests to be performed for evaluation of data. Only through visual inspection the experimenter examines such factors as changes in the magnitude and rate of behaviors being studied (Kazdin, 1982). This point is a big advantage for those who dislike carrying out statistical computations.
- (iv) Both exploratory and descriptive researches can easily be carried out with single-subject design.
- (v) Single-subject research allows the researcher to eliminate and hold constant extraneous variables that don't show up until after the investigation is under way.

In fact, intra-subject comparison in case of single-subject research provides better control of extraneous variables than the inter-subject comparison, which is the case with large N experimental researches. Despite these advantages, single-subject research has some disadvantages or limitations. Some of these disadvantages are as follows:

- (i) Inappropriateness: Single-subject research is not appropriate for certain types of psychological research such as survey or ex post facto situation.
- (ii) Practical limitations: Single-subject research is time-consuming research. It generally takes several fortnights or months to complete whereas many large N research designs can be carried out in only one session. In fact, single-subject research is feasible only when the subject remains willing to co-operate by giving sufficient time for fortnights or months.
- (iii) Order effects: In single-subject research there are obvious order effects which result in confounding and limiting the quality of generalization. Since there is only one subject over whom treatments are applied, it may be that practice of one treatment may be carried over to the later treatment and may improve performance under later treatment or the first treatment may introduce fatigue to the second treatment.
- (iv) Baseline problems: Barlow & Hersen (1984) have discussed many problems related to baselines in single-subject research. One of the basic assumptions of single-subject

research is that a stable baseline has been established. If baseline varies, it is difficult for the researcher to conclude a reliable change in behavior following treatment or intervention. Not only this, sometimes in A-B-A-B design which has two baselines (A), the second baseline becomes markedly different from the first. In such a situation the researcher would not be able to assess the effects of intervention with certainty.

(v) Irreversible effects: Another disadvantage of the single-subject research is that some treatments given to the subjects are not reversible. For example, in drug evaluation research the impact of some of the drugs may linger up to the return-to-the baseline phase because of its profound effect. In such a situation the effect of intervention is difficult to be isolated. Not only this, sometimes the effect is reversible; however, such reversal is not done because that may be unethical and/or practically difficult. Suppose the researcher is giving therapy to a phobic patient following A-B-A design.

(vi) Lack of effectiveness of treatment: In single-subject research a doubt regarding the effectiveness of treatment or intervention introduced often occurs in mind. Are changes in the behaviour of the subject due to the introduction of IV (or a treatment)? Or, is it merely because something different from baseline is done? Nothing definite can be postulated.

(vii) Researcher's bias: Some biases on the part of a researcher are often seen in introducing the intervention or treatment. Generally, the researcher waits for some cues indicating change in subjects' behaviour and then he introduces a withdrawal of the treatment. Such practices by the researcher are not scientific.

(viii) Dependent behaviours: In single-subject research design, particularly, in multiple-baseline design across behaviour, the researcher assumes that different responses or behaviours being studied are independent.

(ix) Lack of external validity: Single-subject research in comparison to the 'between groups research' or large N research has poor degree of external validity or generalizability. Since such an experiment is conducted only on one subject, the conclusions obtained are difficult to be generalized to other participants.

(x) Magnitude of effects: In single-subject research design where repeated measurements are taken to the same subject, it is very difficult to determine whether the treatment is effective for naive individuals who have not experienced those previous treatments.

II SINGLE-SUBJECT RESEARCH AND LARGE IN RESEARCH

Single-subject research and large N research are both experimental researches where IVs are manipulated and its effect upon DV is examined. However, the following are the major points on which the two differ.

1. Control techniques: Large N research generally employs randomization, making an extraneous variable an independent variable, and various statistical controls whereas single-subject research does not. Single-subject research does use randomization as a means of subject-selection but not as a technique of controlling extraneous variables in the experiment. Although both large N and single Nor, small N experiments employ elimination and constancy as control techniques, the ways they use them differ. In large N experiments extraneous

variables are eliminated or held constant at the beginning of the investigation. In single N experiments elimination and constancy are employed as the investigation is carried out, as also at the outset. In such experiments the experimenter not only tries to hold the extraneous variables constant but also increases his control over the experimental situation by setting continuous measures of dependent variables. We also find that large N experiments control chance fluctuations by using a large number of subjects whereas single N experiments control them by using an increased number of responses of the subject.

2. Manipulation of dependent variables: In large N experiments the experimenter generally sets up his experimental design, controls the extraneous variables as far as possible, applies an independent variable and takes a one-shot measure of the dependent variable (or DV). Here little is done about DV except this one-shot measure. But with single N research the experimenter can actually change the DV by varying the extraneous variables. In fact, this procedure is carried out in an effort to develop a stable DV measure prior to applying the independent variable.

3. Monitoring the experimental data: In large N experiments the experimenter does little effort to monitor and analyze the data until the experiment is over. But in single experiment the experimenter continually monitors his data so that a watch can be kept on changes in extraneous variables that may occur during the experiment itself.

4. Data analysis: In large N experiments the experimenter variously uses statistical tests like test, F test, Pearson r for determining the significance of the data. Frequently in single nor small N experiment no statistical test is used for evaluating the data.

5. External validity of the results: External validity refers to the generality of the results. In large N experiments the experimenter tends to increase the generality of the results by increasing the number of subjects in the investigation. Many researchers believe that simply by increasing the number of subjects, the generality of results can be increased because the obtained mean and variance of the sample will closely approach the true mean and variance of the population. But this, in fact, is not the correct assumption.

There are only three methods of data collection in behavioral science research: one can ask people questions; one can observe the behaviors of individuals, groups or organizations or their products or outcomes; and one can utilize existing records or data already collected for purposes other than one's own research.

Thus, the methods of data collection include:

- (a) questionnaires and interviews;
- (b) observation; and
- (c) available material.

11. Methodology used for collecting data

The first, being the descriptive part of the study. For this part of the study, secondary information has been obtained from current literature of education, research journals and the news-papers

Statistical Technique Used

The statistics used for the analysis of data is 2*2 matrix and using chi square test.

Scoring of the test

Out of the 108 items 73 were positive items and 35 negatives. The responses of JSMS have been categorised in five groups: strongly agrees, agree, undecided, disagree and strongly disagree. For favourable (positive items), a weight of 5 is assigned to "strongly agree", a weight of 4 to "agree", a weight of 3 to "undercided", a weight of 2 to "disagree", and weight of 1 to 'strongly disagree". The scoring is reversed for negative items namely - items numbers, 2, 3, 8, 9, 15, 22, 29, 34, 35, 40, 46, 54, 60, 61, 62, 65, 68, 70, 73, 74, 75, 79, 80, 81, 82, 83, 84, 85, 86, 90, 91, 92, 94, 105 and 106 i.e. 35 items.

The score is the sum of item scores. A high score indicates a favourable attitude towards the leadership styles. Thus a cumulative perception from two factors on 108 items were obtained from each of the 80 teachers.

Reliability & validity of the tool

The test was split into 2 reasonably equivalent halves. Scores on the odd numbered items were then correlated with the scores on the even numbered items. Statistically, the validity of JSMS was established on the basis of the index of reliability. Accordingly, to Gaerett. H.E., the index of reliability is sometimes taken as a measure of validity.

The correlation coefficient gives the relationship between the obtained scores and their theoretical true counterparts. There reliability coefficient of the test is 0.96, 0.98. This means that hence by formula a validity worked out is 0.96 the test measures true ability to the extent expressed by 0.98.

Accordingly, to Garrett, H.E., emphasis the reliability coefficient of their tests to meet at least 00.90 criterion to be taken as a satisfactory reliability coefficient. Reliability coefficient of the present test is 0.96, therefore, the JSMS may be considered as a reliable tool for measuring communication skill of teachers.

12. Data Analysis

Assessment may be defined as "any method used to better understand the current knowledge that a learner possesses. From a terminological perspective, different expressions of test, assessment, or evaluation are used in our scope of discussion. Test comes from the Latin word testum meaning an earthen vessel for measuring the purity of metals. To "measure the purity" of a student's knowledge fits well with a teacher's role.

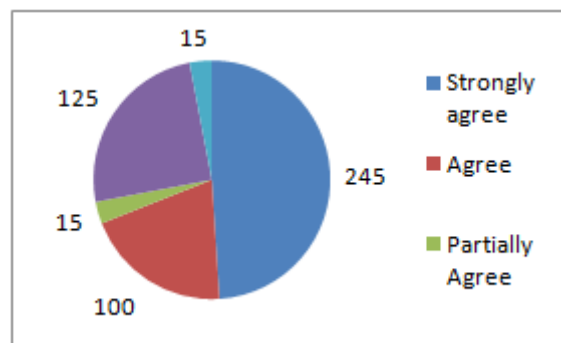
Testing has long been a part of teacher's role. Assessment is a formative process meaning that the process forms over time. Examples of assessment include portfolios, interviews, open-ended tests, and traditional tests like spelling tests. To "sit beside" changes the perspective of the teacher. When teachers "sit beside" students to assess their progress, they transcend the traditional role of the instructional deliverer toward becoming a guide, a coach, or a mentor. (From the "sage on the stage" to the "guide on the side"). The role of the student changes too. They are not passive receivers of information and "right answer" responders.

Hypothesis I: -There is no significant constructivist learning environment and learners. For proving this hypothesis, the researcher developed the questionnaire to void the null hypothesis.

• So as far as our first point i.e. present education system is really helpful in learning process is concerned, it was asked to the 500 students of secondary school students. The responses given by students were given differently and these are summarized in table-1 as follows:

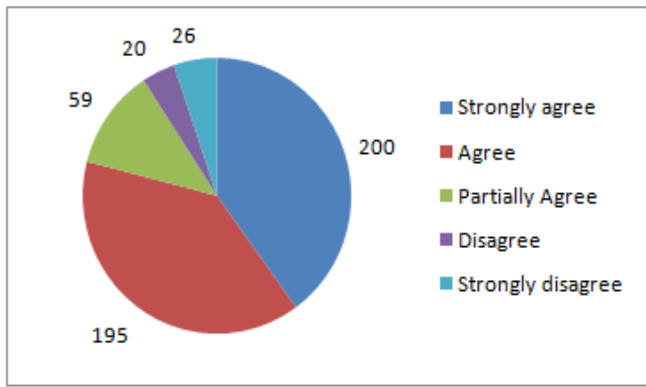
S. No.	Parameters	Response given by the students
1	Strongly agree	245
2	Agree	100
3	Partially Agree	15
4	Disagree	125
5	Strongly disagree	15

According to the above table response was measure for total five different parameters. The data can be showed by the pie chart 1:



• For the second point of consideration when students were asked about the current session of academics, whether they have done sufficient reading and writing related with their course. The answers obtained in return of this point are summarized as follows in the table 2:

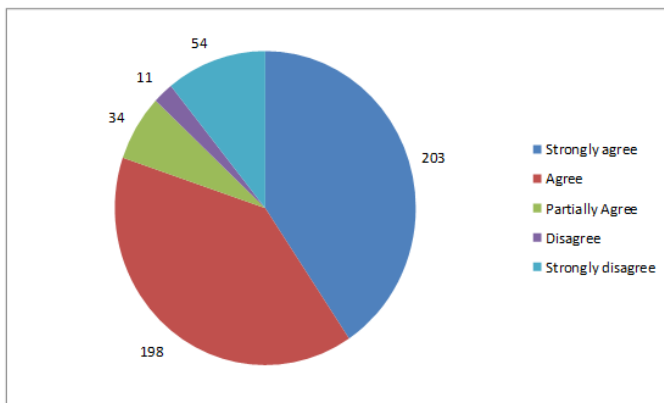
S. No.	Parameters	Response given by the students
1	Strongly agree	200
2	Agree	195
3	Partially Agree	59
4	Disagree	20
5	Strongly disagree	26



From the above table pie chart can be drawn which shows that most of the students are satisfied with the reading and writing material provided by the school.

As far as the reliability of the academic material was assessed by asking the question to the students, their responses were tabulated as follows:

S. No.	Parameters	Response given by the students
1	Strongly agree	203
2	Agree	198
3	Partially Agree	34
4	Disagree	11
5	Strongly disagree	54

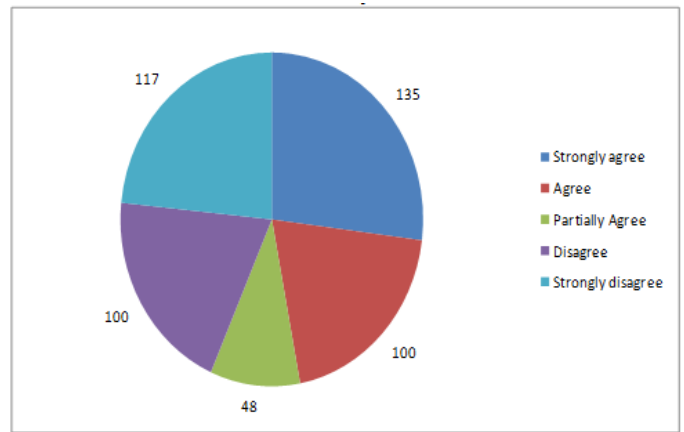


From the above table pie chart can be constructed which shows that almost three-fourth of all students says that they are getting the right education material.

The students were asked that whether their institution is using effective learning strategies for assessment that help in effective learning and their response is as follows in the table 3:

S. No.	Parameters	Response given by the students
1	Strongly agree	135
2	Agree	100
3	Partially Agree	48
4	Disagree	100
5	Strongly disagree	117

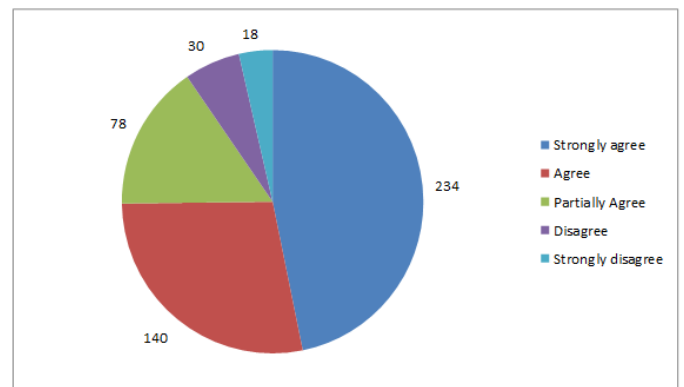
For the information obtained as per the above table following pie chart is made which highlights that most of the students says that their school uses effective learning strategies but on the other the number of students who are strongly disagree with this point are almost similar.



Following table 5 shows that how many students assume that private school have better learning environment than the government schools.

S. No.	Parameters	Response given by the students
1	Strongly agree	234
2	Agree	140
3	Partially Agree	78
4	Disagree	30
5	Strongly disagree	18

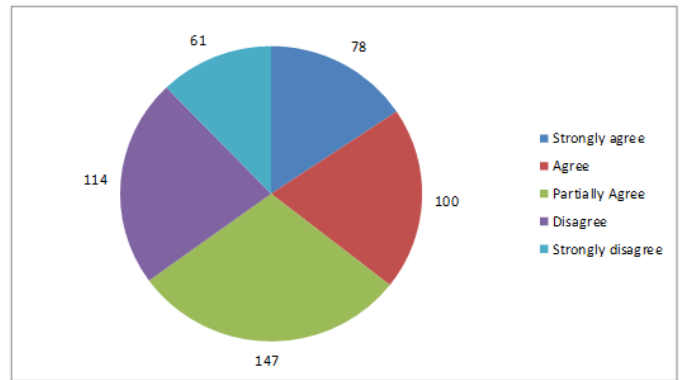
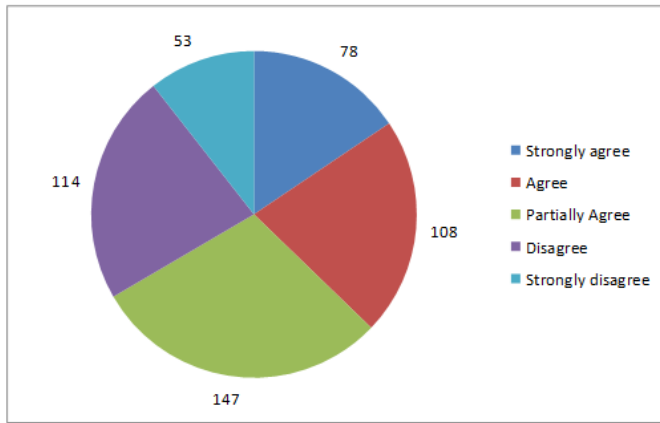
From the above table following pie chart is made which shows that almost half of the total student assume that private schools are imparting better education to their students.



As far as the point 6 is concerned the students were asked whether they assume their school as the best school of the city. The responses are summarized in the following table:

S. No.	Parameters	Response given by the students
1	Strongly agree	78
2	Agree	108
3	Partially Agree	147
4	Disagree	114
5	Strongly disagree	53

The data obtained in above table can be presented in the following pie chart. It shows that number of students who are partially agree with the point is more as compared to the other parameters.



In the next attempt the students were asked about the working of their teaching staff and the responses are summarized as follows

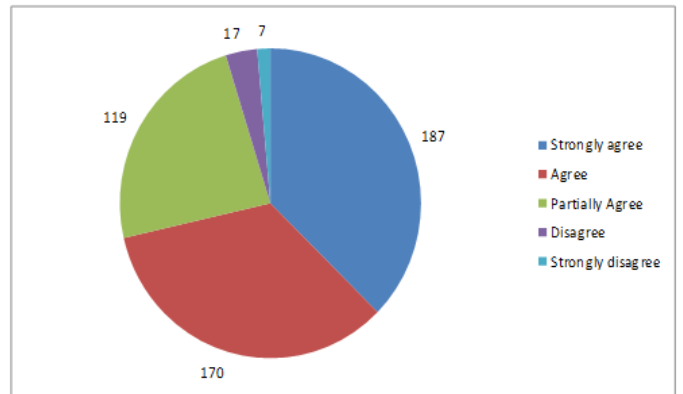
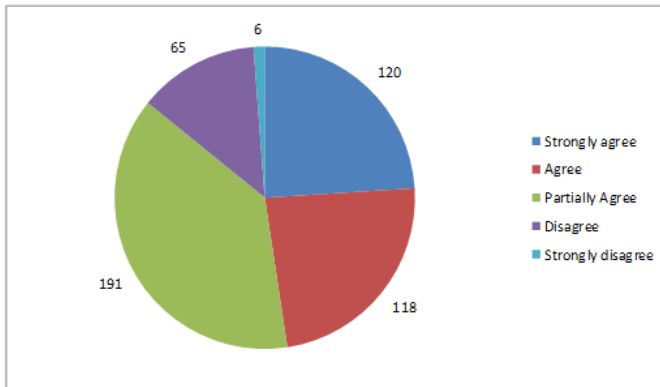
So as far as point 9 is concerned i.e. library system and management of the school are responsible for better educational environment. The table 9 is as follows:

S. No.	Parameters	Response given by the students
1	Strongly agree	120
2	Agree	118
3	Partially Agree	191
4	Disagree	65
5	Strongly disagree	06

S. No.	Parameters	Response given by the students
1	Strongly agree	187
2	Agree	170
3	Partially Agree	119
4	Disagree	17
5	Strongly disagree	7

The pie chart was made with the help of the data shown in the above table. It shows that there are very few students who are not satisfied with the staff performance.

The above table implies that for achieving better and effective education a school must have well established library and good management system. For this analysis following pie chart was made.



In the session the students were asked about the surety of their bright and safe future because of constructivist learning environment. The results were amazing. The overall response of students are tabulated as follows:

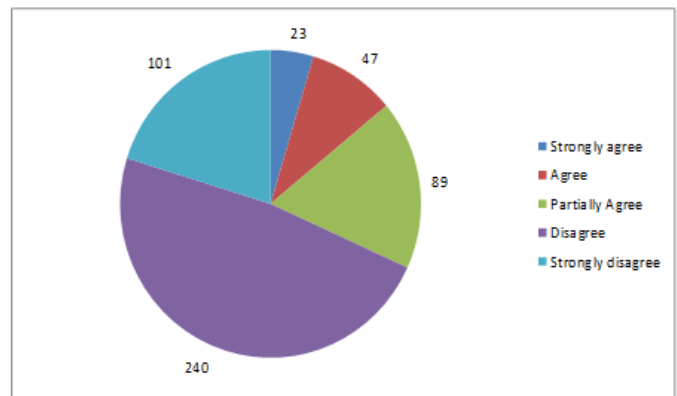
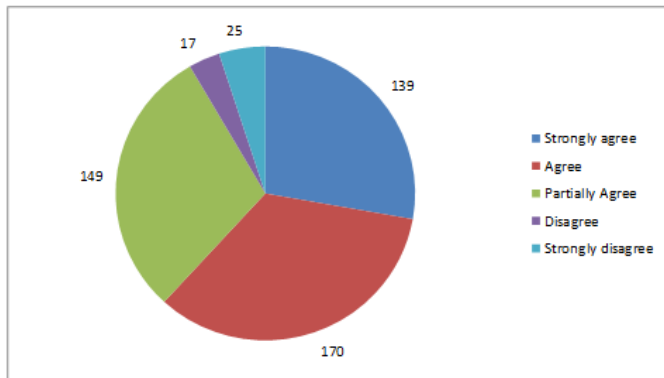
When students were asked whether the Specific assessment tools are used to assess learning outcomes at your institution is it true, they give following response

S. No.	Parameters	Response given by the students
1	Strongly agree	78
2	Agree	100
3	Partially Agree	147
4	Disagree	114
5	Strongly disagree	61

S. No.	Parameters	Response given by the students
1	Strongly agree	139
2	Agree	170
3	Partially Agree	149
4	Disagree	17
5	Strongly disagree	25

When we draw a pie chart from the above table we get the following chart. It clearly shows that students are not very much sure about their future.

From the data of above table following pie chart is made from it is quite clear that most of the students are agreed with that their institution is using specific tools for assessing learning outcomes.



Although specific assessment tools are used in the school, the students were again asked about any unique or program-specific assessment tools being used to assess learning outcomes and their response is as follows:

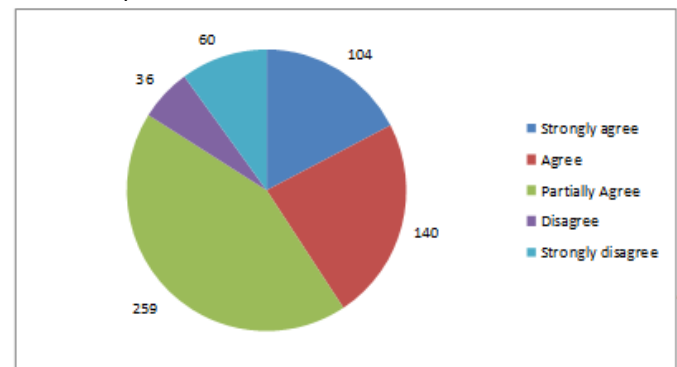
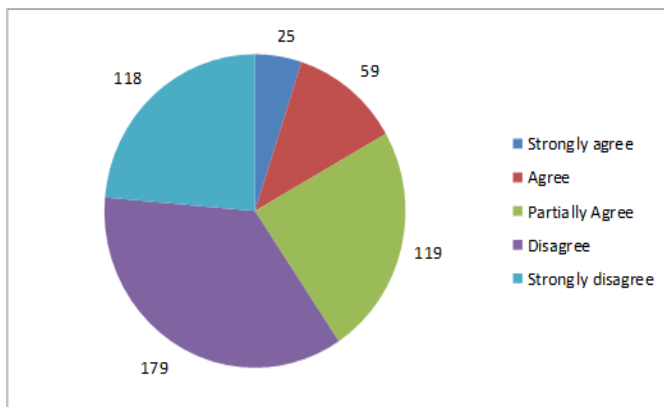
An interesting question was asked to the students whether they would recommend this school to their friends for further study. The responses are given as below in the table:

S. No.	Parameters	Response given by the students
1	Strongly agree	25
2	Agree	59
3	Partially Agree	119
4	Disagree	179
5	Strongly disagree	118

S. No.	Parameters	Response given by the students
1	Strongly agree	104
2	Agree	140
3	Partially Agree	259
4	Disagree	36
5	Strongly disagree	60

As far as the specific or unique tool is concerned the result shows that majority of students say that school is devoid of such implementation and it is presented in the form of pie chart as follows:

The response was quite safe that majority of the students will recommend the school to their friends and it is presented in the form of pie chart as follows:



When students were asked about use of information technology for giving them better education their following response was obtained:

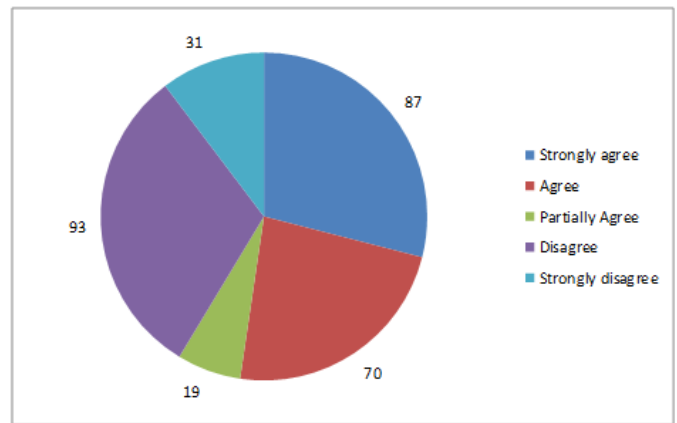
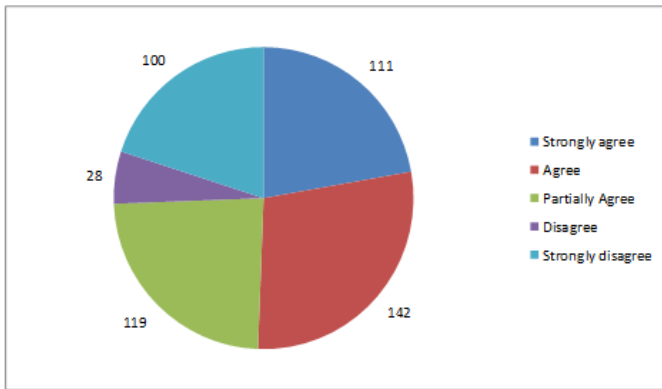
Table given below shows the response of the students for the teaching and assessment methods used by the school staff:

S. No.	Parameters	Response given by the students
1	Strongly agree	23
2	Agree	47
3	Partially Agree	89
4	Disagree	240
5	Strongly disagree	101

S. No.	Parameters	Response given by the students
1	Strongly agree	111
2	Agree	142
3	Partially Agree	119
4	Disagree	28
5	Strongly disagree	100

Use of IT in the schools is almost negligible which is indicated by the above table and result is presented in the following pie chart:

While studying above table, following pie chart was prepared:



When students were asked about the education system of other school they give positive response for their school and their responses are summarized as follows:

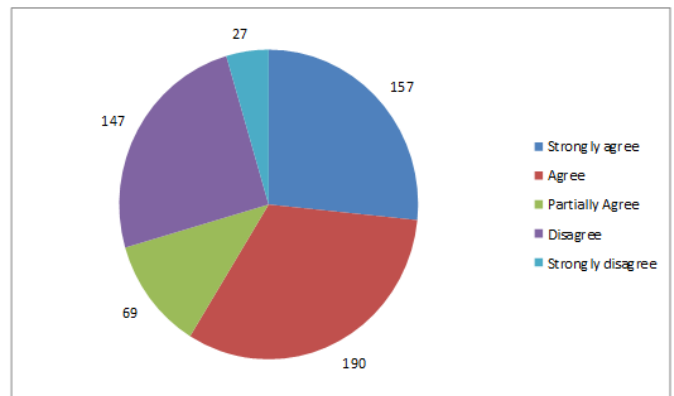
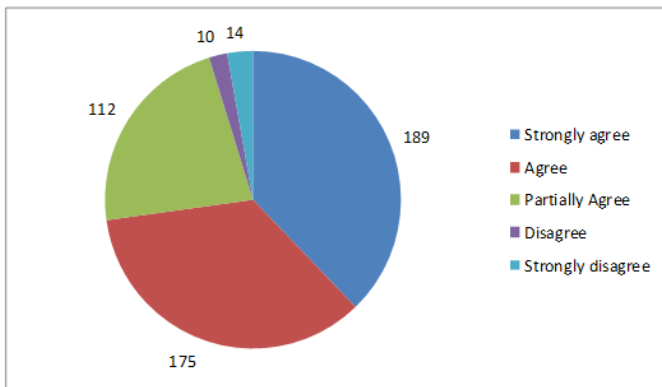
The table given below was made for summarizing the response of students for that their school is not dependent on the old traditional methods for assessment;

S. No.	Parameters	Response given by the students
1	Strongly agree	189
2	Agree	175
3	Partially Agree	112
4	Disagree	10
5	Strongly disagree	14

S. No.	Parameters	Response given by the students
1	Strongly agree	157
2	Agree	190
3	Partially Agree	69
4	Disagree	147
5	Strongly disagree	27

For the above table data following pie chart is made

The pie chart obtained from the above table is as follows:



As far as the present education system is concerned for shaping the career of the students, students assume that it still lack behind somewhere while fulfilling the needs of the present world:

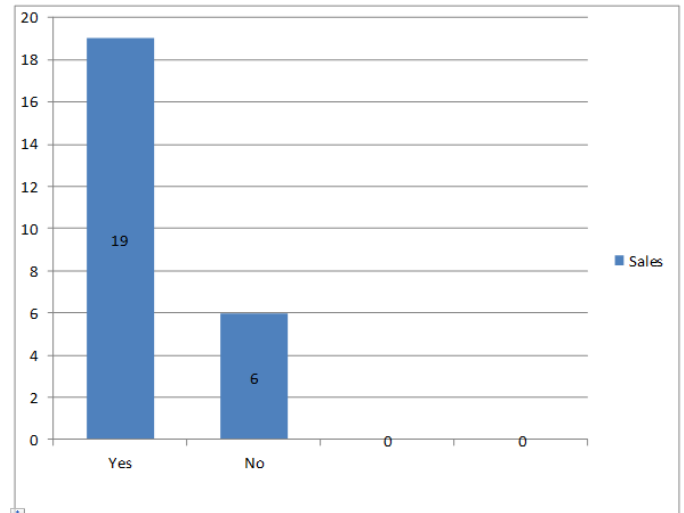
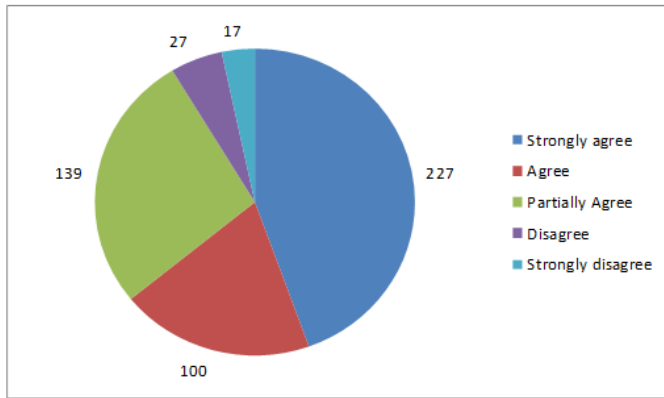
Present constructivist learning environment is the right path for assessing the students, when student was asked they gave following responses:

No.	Parameters	Response given by the students
1	Strongly agree	87
2	Agree	70
3	Partially Agree	19
4	Disagree	93
5	Strongly disagree	31

S. No.	Parameters	Response given by the students
1	Strongly agree	227
2	Agree	100
3	Partially Agree	139
4	Disagree	27
5	Strongly disagree	17

From the above table following pie chart was made:

The following pie chart was made for the data given in above table which shows that most of the students assume that present education system with constructivist learning environment is better.



The above tables and charts show the response of the students of few selected secondary schools of the local city. Another set of questionnaire was also conducted for surveying 25 schools of the city. Now the questions were asked to the teaching staff.

Above table and pie chart indicates that majority of the schools have computer system for the use of their students.

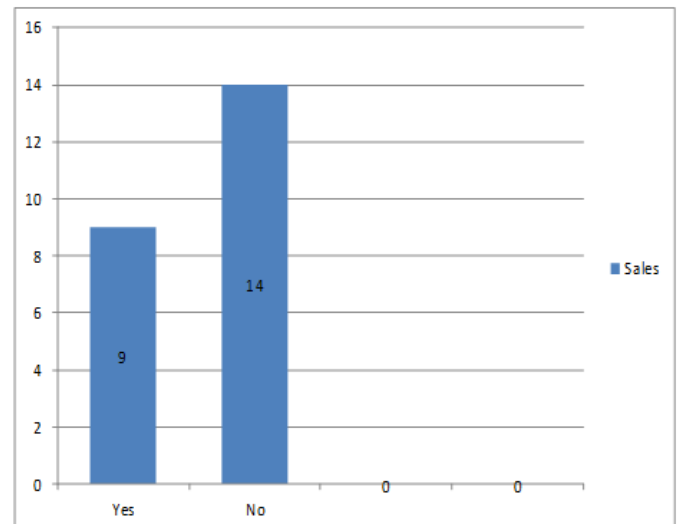
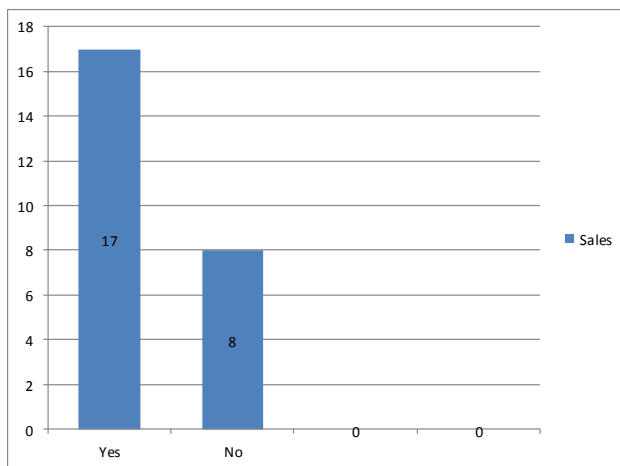
Hypothesis II: -There is no significant difference in the evaluation of students in classrooms or outside the classrooms. For proving this hypothesis, the researcher developed the questionnaire to void the null hypothesis.

When the teachers were evaluated for their own qualification as assessment methods used by them we obtained following surprising results:

As far as the school library is concerned, almost more than 50% school (out of 25) are having good library and study corner for their students. It can be summarized as follows:

S. No.	Parameter	Response by the teachers
1	Yes	9
2	No	14

S. No.	Parameter	Response by the teachers
1	Yes	17
2	No	8



Data given in above table can also be presented as follows. It shows that maximum number of schools has good library centers in their school premises itself and hence they do not need to elsewhere for availing study material.

The response regarding the qualification of the teachers was too much surprising. Because the school which ensure to give best education, even they do not have well qualified teachers then how could they give a bright future to their students.

• When schools were asked about the use of computers for the students, following results were obtained

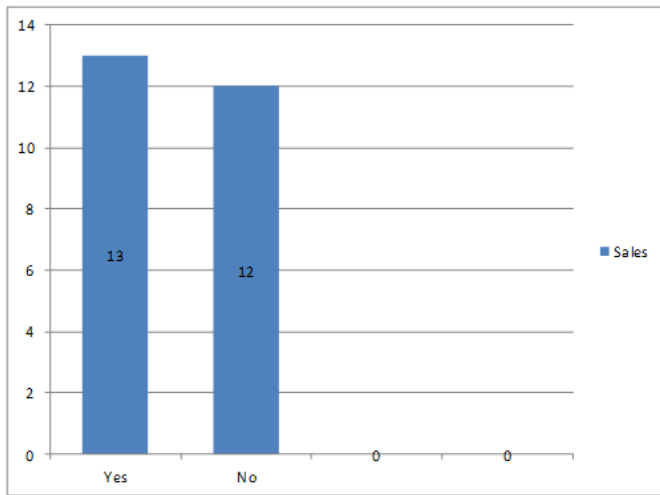
Again, when the teachers were asked about the study material prepared by themselves, the response was as follows:

S. No.	Parameter	Response by the teachers
1	Yes	19
2	No	6

S. No.	Parameter	Response by the teachers
1	Yes	13
2	No	12

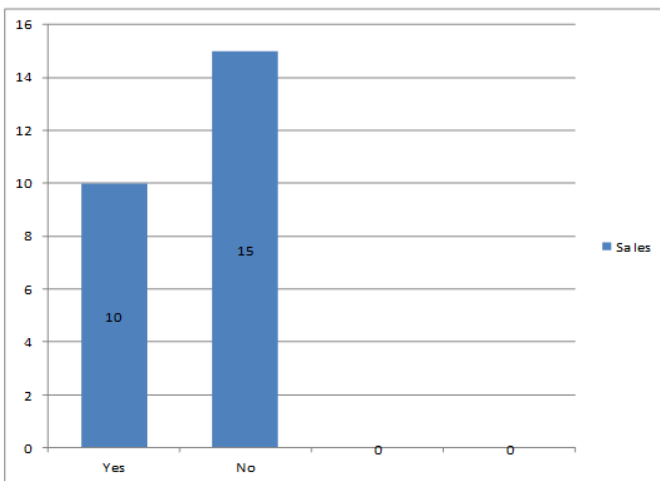
The response of all 25 schools was almost 50-50. That means almost half of the schools (considered in the study) were having their own written study material and almost half of

the institution were not having the same. The above result can also be represented in the form of following chart:



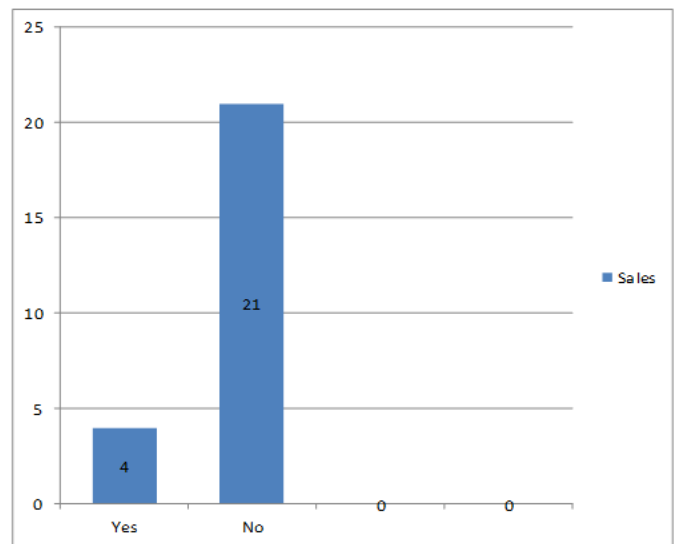
Schools have developed their instructional activities or learning material to address the curriculum to be taught, when it was assessed in the schools, following responses were obtained:

S. No.	Parameter	Response by the teachers
1	Yes	10
2	No	15



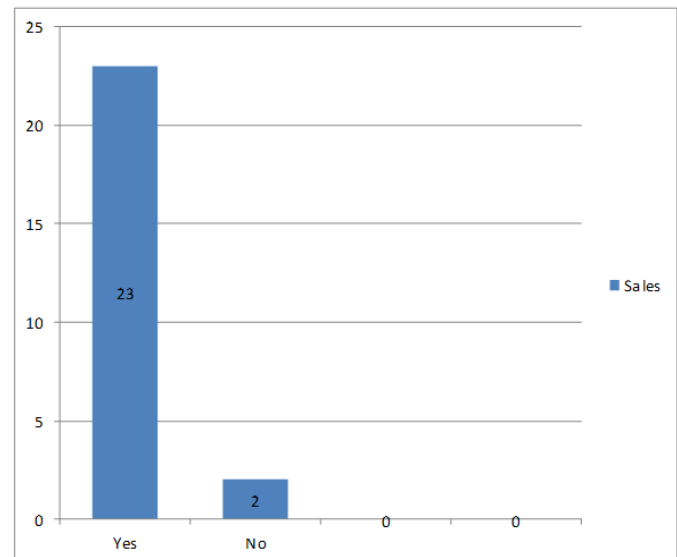
The schools were also assessed for the constructivist learning approach. It was found that most of the schools are well equipped still they avoid the use of constructivist learning approach. The result is given in the table given below and also presented in the form of chart.

S. No.	Parameter	Response by the teachers
1	Yes	4
2	No	21



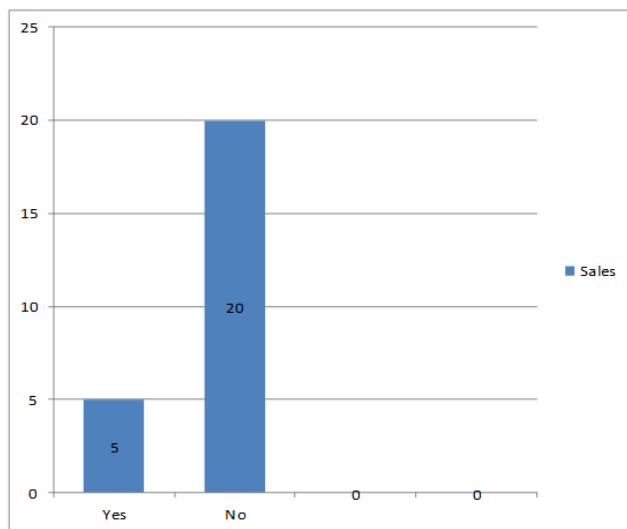
The next parameter for assessing the quality of school was about the issuing of books from school library. It was found that almost all school issue books to their students to take way books to their home but on different conditions. It means all the schools issue books and other study materials but they have their own rules and regulation.

S. No.	Parameter	Response by the teachers
1	Yes	23
2	No	2



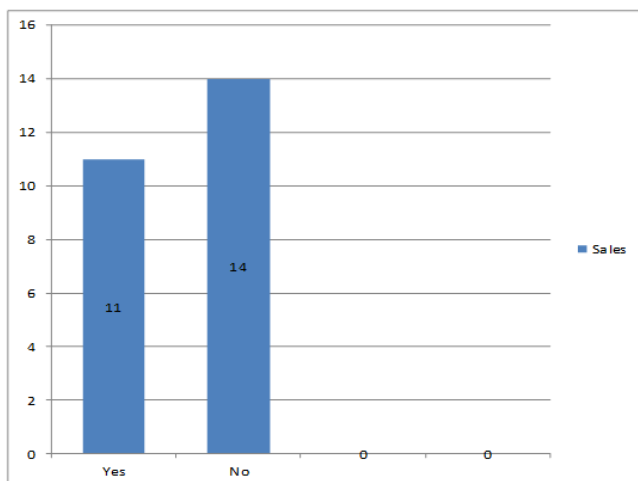
During the questionnaire assessment it was found although schools are well equipped, have their own study material still they are not able to assess the students more effectively. It can be visualized by the following table and chart:

S. No.	Parameter	Response by the teachers
1	Yes	5
2	No	20



The schools were assessed about mode of education whether it is learner centered or teacher oriented. Most of the schools follows teacher centered education system instead of using learner centered. It is a major drawback of present education system which should be taken into consideration.

S. No.	Parameter	Response by the teachers
1	Yes	11
2	No	14



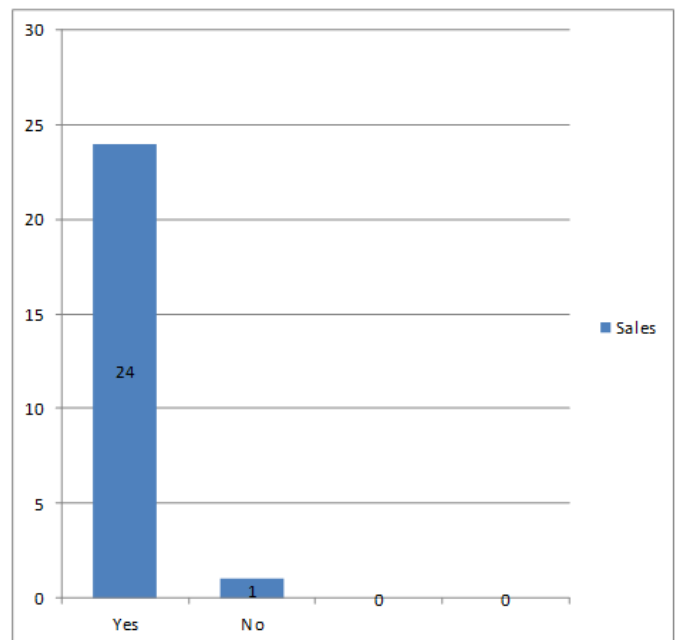
The schools were also assessed for use of more advance technology for teaching as well assessing the students. In this field results were quite satisfactory.

S. No.	Parameter	Response by the teachers
1	Yes	24

13. Result & Discussion

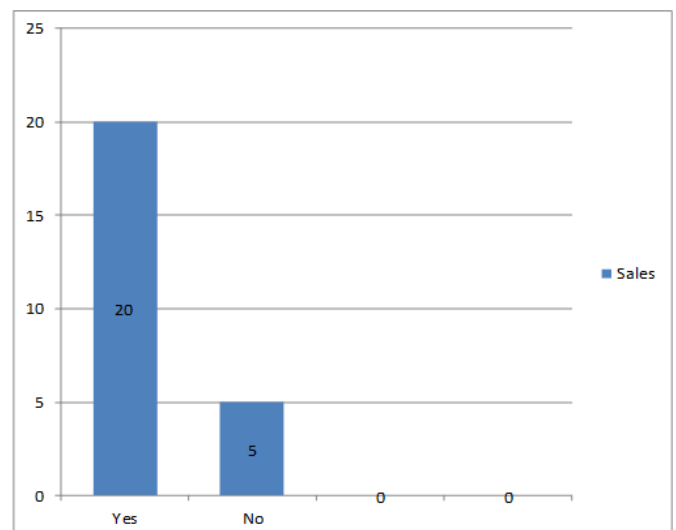
The present study concentrates on providing an alternative pedagogy based on the principles of constructivism theory given by Piaget, Vygotsky and other theoreticians including psychologists and sociologists. If we accept constructivist theory, then we have to give up platonic and all subsequent realistic views of epistemology. We have to recognize that there is no such thing as knowledge “out there”, independent of the knower but only knowledge we construct for ourselves as

2	No	1
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Last but not least assessing point was whether you can say that your school is the best educational centre for students among other schools in nearby areas and we got following response:

S. No.	Parameter	Response by the teachers
1	Yes	20
2	No	5



we learn is the true knowledge. If we believe that knowledge consists of learning about the real world “out there”, then the power of organizing and presenting the knowledge is passed on to the teacher who ultimately passes this on to the learner. In the process of disseminating knowledge to learners the teacher may use activities and opportunities to experiment but here the teacher is helping the learner to understand the world but don't ask the learner to construct his/her own world.

Table 5.1: Criteria for Valid Performance-Based Assessments

Criteria	Ask Yourself
Consequences	Does using an assessment lead to intended consequences or does it produce unintended consequences, such as teaching to the test? For example, minimum competency testing was intended to improve instruction and the quality of learning for students; however, its actual effects too often were otherwise (a shallow drill and kill curriculum for remedial students).
Fairness	Does the assessment enable students from all cultural backgrounds to demonstrate their skills, or does it unfairly disadvantage some students?
Transfer	Do the results of the assessment generalize to other generalizability problems and other situations? Do they adequately represent students' performance in a given domain?
Cognitive complexity	Do the assessments adequately assess higher levels of understanding and complex thinking? We cannot assume that performance-based assessments will test a higher level of student understanding because they appear to do so. Such assumptions require empirical evidence.
Content quality	Are the tasks selected to measure a given content area worth the time and effort of students and raters?
Content coverage	Do the assessments enable adequate content coverage?
Meaningfulness	Are the assessment tasks meaningful to students and do they motivate them to perform their best?
Cost and efficiency	Has attention been given to the efficiency of the data collection designs and scoring procedures? (Performance-based assessments are by nature labor-intensive.)

There are, of course, different viewpoints about constructivism and the debates regarding its operationalisation are still going on. To some, for example Wilson, it is not so obvious what a constructivist learning environment looks like, because one should ask in each case how construction of meaning can be facilitated in the best way. According to his viewpoint, teaching may include all kind of activities, including drill and practice, a lecture or prepared assignments. But a constructivist learning environment should always be a 'place where learners may work together, draw upon (information) resources using a variety of tools, supporting each other in their guided pursuit of learning goals and problem-solving activities' (Wilson, 1995). According to Lin et al. (1996) a constructivist learning environment should be a learning community in which students have the opportunity to plan, organize, monitor, and revise their own research and problem solving in a collaborative way. To others, for example, it is more obvious that constructivism implies specific learning activities or instructional principles, such as: (1) anchoring of all learning in large tasks or problems; (2) activating the learners; (3) challenging and supporting the learner's thinking; (4) authentic tasks or problems; (5) reflecting the complexity of the real world; (6) the learners' ownership of the problem solving process; and (7) the opportunity to reflect on the content and the learning process, as it is embedded in problem-, case- or project-based learning. In fact, according to Savery and Duffy (2001), problem-based learning is one of the best exemplars of a constructivist learning environment.

Problem-based learning has its origins in the 1950s in Canadian medical schools because of dissatisfaction with the medical learning environment. Since then it has evolved and is implemented on different levels of education in different ways in many disciplines throughout the world for a variety of reasons. Despite the fact that many variations of problem-based learning are applied, a basic definition of problem-based learning can be given by means of its core characteristics

(Barrows, 1996; Dochy, Segers, Van den Bossche & Gijbels, 2003). Problem-based learning has six core characteristics which are in line with the previous described constructivist instructional principles:

- (1) learning is student centred;
- (2) learning occurs in small groups;
- (3) a tutor guides or facilitate the learning processes;
- (4) problems are used as stimuli for learning;
- (5) authentic problems are used; and
- (6) new information is acquired through self-directed learning.

According to present analysis, students in problem-based learning environments can perform better on different levels of assessment (the analysis distinguishes three levels of assessment: the understanding of concepts; understanding of principles; and application) when compared to students in more traditional learning environments. For an optimum effect, the learning environment should pay attention to the assessment of the application of knowledge. The students also have to adopt an active learning attitude towards this problem-based learning environment. But it is also dependent on whether the teacher (the tutor) is able to activate the students in a suitable way.

Constructivism is a theory that asserts that learning is an activity that is individual to the learner. This theory hypothesizes that individuals will try to make sense of all information that they perceive, and that each individual will, therefore, "construct" their own meaning from that information. Constructivism represents one of the big ideas in education. Its implications for how teachers teach and learn to teach are enormous. If our efforts in reforming education for all students are to succeed, then we must focus on students. To date, a focus on student-centered learning may well be the most important contribution of constructivism. The principles of constructivism, increasingly influential in the organization of

classrooms and curricula in schools, can be applied to teaching and learning.

14. Findings of the study

- It was found although schools are well equipped, have their own study material still they are not able to assess the students more effectively.
- It shows that most of the students are satisfied with the reading and writing material provided by the school.
- It shows that private school have better learning environment than the government schools.
- It was found that almost all school issue books to their students to take way books to their home but on different conditions.

15. Further suggestion for the research

1. The research can be used on the tertiary level also.
2. The researcher can used to apply assessment in constructivist as well as in different environment also.
3. The researcher can be applied this for rural and urban area.

The assessment of innovation appears to be a novel, or can it be said, an innovative notion. The entire empirical enterprise includes both a product and process and a proximal-distal orientation. The notion incorporates a singular yet unique definition for the purpose of delineating both assessment and innovation. Once the definition is solidified, it will serve as the product. Further, the process must include a conceptual framework to serve as a template against which to measure curricular and programmatic outcomes.

Any skill that is useful in day to day life is considered as life skill. There are many different understandings of life skills but no one definition is universally accepted. Different organizations attach different meanings to the term which ever fits the best for them. The International Bureau of Education (IBE) originates its understanding of life skills from the four pillars of learning by Delors - learning to do, learning to know, learning to be and learning to live together and defines life skills as personal management and social skills which are necessary for adequate functioning on an independent basis.

The treatment that is the intervention program developed by the researcher is found to be effective for enhancing critical thinking of students. The literature review indicated that the roles that teachers play in the critical thinking is important in student success. This study could serve as a contribution to educational research which will help to enrich the teaching and learning practices with the help life skills education program. Making choices and taking proper decisions are a part of life. Simply put, the way life unfolds, with its twists and turns, starts and stops, requires us to make decisions at every step, the way which requires them to think critically.

The results of this themed issue can lead to the formulation of a robust mechanism to move from research to practice.

16. Recommendations and suggestions

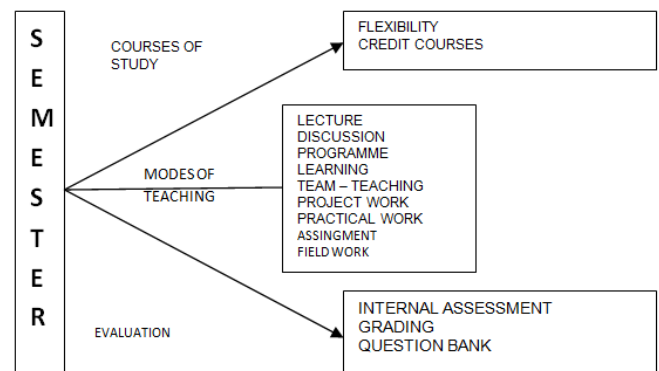
Advantages of semester system

The semester system offers numerous additional advantages.

The semester system reduces the evil efforts of a single terminal examination by having two or more examinations in each semester.

Important aspects of semester system

As per the nature and concept of the semester system, the author would like to discuss courses, teaching methods, evaluation, duration and curriculum in semester system.



Associated of semester system

Courses of semester system

It suggests that the courses in the semester system are Flexible, and courses have credit.

Flexibility of courses

Flexibility in terms of courses of semester system can be understood as under:

Teacher has scope for planning and structuring the teaching courses according to the objectives of the courses. The departments have flexibility in formulating the courses and can minimize the number of students by offering variety of courses.

Credit Courses

The semester system through semester credit hours. It says, "Student earn one credit by attending the forty-five-minute period of lecture or classroom interaction, and during two-three hours of home study, field or laboratory work – each week throughout the semester."

17. Evaluation/Assessment

Evaluation in a semester system includes three components: internal assessment, grading system and question bank.

Internal Assessment

Continuous assessment of students' performance at home study, fieldwork, project work, participation in seminars,

tutorials and in tests. It provides a scope to teachers to assess the students whom they have taught, rather than an external agency evaluating their work.

Grading System

As we see our Department of Education follows eleven point scale-grading system (i.e. A+, A, A-, B+,...,D, E) some other universities or institution may have seven point scale-grading system (O, A, B, C, D, E, F) and another scale are also available. Here A+, and O are the highest grade, whereas E and F are the lowest grade respectively.

Question Bank

"Question bank is a pool from which large number of question studies can be drawn at random; all of same standard covering each unit of syllabus and all the topics in the course concerned giving adequate importance to each."

18. Duration in Semester

Many of universities have different type of semester pattern in this duration is different. Based on duration have suggested five different types of calendars are as follow:

Traditional Semester

School year is divided into two equal semesters. The first semester starts from 10 September and ends about the 25

January; the second semester starts from January 30 and ends early in June. Semester hours are used for credits.

Early Semester

School year is divided in two semesters; usually the first semester is slightly shorter than the second. The first semester starts about August 30 and ends about December 21; the second semester starts about January 15 and ends about may 20th. Semester hours are used for credits.

Quarter

School year divided into 3 equal parts of about 12 weeks each, with a great variation about the starting and ending. Quarter hours are used for credits.

Trimester

The school year is divided into 3 equal parts of about 16 weeks. The semester hour is used for credits.

It will help in continuous evaluation of the students; this will lead to motivation and ultimately will result in a higher achievement level. The semester system will help in reducing rote memorization. Student will be able to grasp the subject matter in minimum time and with least stress.

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