

## Chapter-I

### INTRODUCTION

#### Background of the Study

If the notion of the terminology “education” is defined as the most significant factor in terms of development for any nation then adamantly there will be no injustice in any belief and regard . In this concern, ‘the path’ which we adopt for the process of transformation, i.e. ‘System’, plays vital role not merely in the absolute growth of education but promotes as a whole directory structure of nation . “Different nations have brought various system in the academic field, where the mainstream systems (Annual or Semester) exist to address the contemporary and impending needs of society.

On the other hand , Private tutoring has stood as the auxiliary form of main stream system .The features of the private tutoring are much or less distinct than those of the mainstream system, since the volume of Private tutoring is based on the mainstream education system, which is simply defined as activities outside of school that mimic activities performed in school (Bray,1999). Private tutoring such as tuition classes, coaching classes, entrance preparation classes, job placement training etc are the major instances of our experience.

Private tutoring has enlarged its massive phenomena in every nook and corner of the world and is now recognized to have far-reaching significance. As far as the question is concerned with the history of private tutoring in the context of Nepal, It has long history since Gurukul , Gumba and mothersa education system ( Yadav & Thapa, 2016).

Private tutoring has grown significantly throughout the region and shows every sign of further growth. so private tutoring has surrounded a wide range of organized forms out of authentic regulation. But our attention is drawn towards some probing concentration; what is the major driving factor of the growing demand for private tutoring? Does it really justify the failure of mainstream education system of our practice ? if so then, in which extent of shadow, the private tutoring can drive its enlargement in changing academic system i.e. in semester system.

There exists no doubt that the quality of the education system plays a key role in the formulation of every well developed and civilized society. Universities should aim not only to young minds but have to create the phenomenon of encouragement for every creative and innovative efforts of every domain of academic section. Private tutoring is found to be having many additive respects which are lacked in the mainstream educating system. In this sense, it is very important to make some effective policies in this concern, but we do not find any kind of notable attempt taken in this concern which is the infirmity of our responsible organizations, though it contains such drawbacks which can totally deteriorate the existence of the whole academic trend and practice of the nation. Yadav and Thapa(2016) have stated some of the policies found in the practice, in terms of addressing the private tutoring in Nepal are shown as follows:

- Tuition and coaching center should be registered in D.E.O. i.e. District Education Office.
- Some shadow educational institutions are conducted by NGOs and INGOs and they must be registered in district administration office and PAN number must be taken from related administrative office.
- Some private tutorial institutions are registered in company registrar office as private company.
- It is necessary to renew the shadow education system institutions as per the rules of concerned act.
- Others many more institutions are running under the registration of VDC, Municipality and Metropolitan city.

The major attention to be paid in this study is that private tutoring holds the phenomenon of the supplementary and supportive education system, However In long run, it may create a huge difference in the socio-economic and cultural measure, So for balancing the structure of private tutoring the changing academic system focused on performance based learning can enroll PT in desired stanza . Since the private tutoring reduces the goodwill of mainstream and hampers the devotion and professionalism of teachers, it must be brought under the law and order, so that it could play the role to fulfill required need of society.

## **Private Tutoring in the context of Mathematics**

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The prime concern of Private tutoring is to provide guidance and support to the student in their subject of interest in which they are in need. Most of our real experience easily shows us that mathematics is one of those subject for which whole student ground always longs for. In most of the private tutoring centre, if we observe most of the students are found for the mathematics study.

But on the contrary, Darby (2009) states that “Students are twice as likely to utilize general tutors over math tutors and six times more likely to use general classes outside school compared to mathematics-specific classes outside school”. This arises various questions, is the condition of private tutoring same likely to the statement of Darby that Mathematics students are less involved in private tutoring over the general students? Or is it only in context of Nepal that mathematics students are more involved in private tutoring? If so, then this condition produces a question: is the mathematics teaching in the Nepali academic society lack any specific strategy? Because of which the phenomenon of private tutoring seems to engulf the students of mathematics in Nepali society. Though teachers who spend more time focusing on private lessons than regular classes can cause greater inefficiencies in the mainstream school system. Situations in which teachers provide extra private lessons for pupils for whom they are already responsible in the public system can lead to corruption, particularly when teachers deliberately teach less in their regular classes in order to promote the market for private lessons. When private tutoring is provided by well trained tutor however the effects can be dramatic, with pupils improving performance by two standard deviations. In this concern our attention must be directed towards the mathematics teaching and learning processes.

## **Statement of the Problem**

In the context of far-hiking speed of private tutoring , no orders and rules are found in effect, however, spontaneously private tutoring has been in its motion neglecting every norms and values of society, economics and education and in the same background higher education has always been criticized for giving less rate of return . we must realize that Nepali higher education is not functioning well especially in TU which holds more than 75% of responsibility of students in the nation. Keeping some number of technical institutes aside , the quality of higher education in TU is said to be deteriorating specifically because of its academic packages and evaluation processes.

In this context TU has launched semester system in the recent academic sessions but no transparent reason has been provided for the burning questions : why semester system instead of annual system?, does it really mean to enhance the existing poor condition of education towards well dignified status ? Here this study will be devoted to possible extent to explore the concerned facts to these probing question. If so, what extent of effectiveness is carried by semester system to enshape the private tutoring in accordance with the norms and values of society, What kind of effect is made by private tutoring upon mathematics and non-mathematics, what kind of nature is of private tutoring are the major causes that enhances the necessity of this study.

### **Objective of the Study**

The general objective of the study is to analyze the current phenomenon of private tutoring in TU. The specific objectives of the study were:

- To identify the effect of private tutoring in mean achievement score of mathematics students.

- To analyze the degree of effect of private tutoring in changing academic system of TU from annual to semester.
- To explore the major factors of existing and expanding nature of private tutoring.

### **Significance of the Study**

This study is focused on determining the impacts and position of private tutoring not merely in academic system but as whole socio-economic and academic trend in society, thus it is be very helpful and significant for educator, mathematicians, socio-economic stakeholders and as whole community of its interest. This study has the following significance

- The result of this study provides the information to the teacher and parents about the real situation and weaknesses of our academic system.
- This study attempts to explore the possible extent of the enlargement of private tutoring and the major factors of its increment.
- This study provides the information about the extent of engagement of students in the private tutoring.
- This study attempts to explore the reasons of expanding nature of private tutoring.
- As the private tutoring is blooming in rapid fire speed, this study provides the information about what extent of socio-economic differences can private tutoring build up in the society.

### **Hypothesis**

The statistical hypothesis formulated for this study is as follows:

- i)  $H_0: \mu_1 = \mu_2$  (There is no significance difference between the achievement of students involved in private tutoring and not involved in private tutoring)

$H_1 : \mu_1 \neq \mu_2$  (There is significance difference between the achievement of students involved in private tutoring and not involved in private tutoring)

Where  $\mu_1$  and  $\mu_2$  are parametric mean scores of the students of mathematics involved in private tutoring and not involved in private tutoring.

ii)  $H_0: \mu_3 = \mu_4$  (There is no significance difference between the achievement of students of semester and annual students)

$H_1 : \mu_3 \neq \mu_4$  (There is significance difference between the achievement of students of semester and annual students)

Where  $\mu_3$  and  $\mu_4$  are parametric mean scores of the students of semester and annual system.

### **Delimitation of the Study**

The study is focused on the students of the specific area as described in the data collection mode on the basis of required direction of research topic. The limitation of the study are as follows:

- 1) The data was limited in the central Education department of TU, kirtipur only.
- 2) This study made the participation of semester students and annually enriched/developed students [to represent the view of annual students] in the course of query.

### **Definition of the Related Terms**

**Shadow education:** activities outside of school that mimic activities performed in school. Private tutoring such as tuition classes, coaching classes, entrance preparation classes, job placement training etc are the major instances of our experience

**Position:** Degree of effect or impact, in the context, "Position of private tutoring"-it states the influence level of private tutoring in academic and social aspect.

**Private Tutoring:** teaching learning activities outside of school that mimic activities performed in schools or colleges. such as Private tuition classes, coaching etc

**Incentives:** salary provided to teachers

**Banking Education:** Traditional approach in educational pedagogy as defined in Pedagogy of oppressed

**NGO and INGO:** Non-Governmental organization and International Non-Governmental Organization which works for public welfare

## **Chapter-II**

### **REVIEW OF THE RELATED LITERATURE**

A review of the related literature is the source of the previous studied research. The main purpose of review of related literature is to develop some expertise in one's area to see what new contribution can be made, receive some idea for developing research design in a systematic manner by providing the general outline of the research study, and

avoid the necessary duplication. The literatures were reviewed from previous thesis, books, journals and internet resources.

### **Empirical Review**

“Empirical review is a way of gaining knowledge by means of direct and indirect observation or experience” (Mangwea,2008). An empirical review in research methodology is done when the writer reviews the information and theories currently available concerning the topic and the historical background of the topic. Two fundamental tasks are accomplished in the empirical review. First, it is to demonstrate thorough understanding of the field in which the researcher is conducting research. Second, it is to show that the problem being studied has not been done before or has not been done before in the way proposed by the researcher. Here some previously accomplished task and journals are reviewed which are in the concern of private tutoring.

### **BRAY,(1999)SHADOW EDUCATION SYSTEM: PRIVATE TUTORING AND ITS IMPLICATION FOR PLANNERS**

Private tutoring is a phenomenon that has escaped the attention of researchers, educational planners and decision maker. Very little extent of knowledge is known about its scope, scale and effects on pupil’s achievement and equality of opportunities. Because of its size in a number of countries and due to its nature that of a private service oriented at improving academic performance. Private tutoring has important implication for the educational system as a whole that cannot be ignored by educational policies. Mark bray has made an important contribution to the debate on the angle of addressing the private tutoring through his systematization of available information and his analysis of this phenomenon. The probing questions “ what is private tutoring and what are its manifestations?” who supplies and demands this service?” what effects does it have on the formal education system?” and what are the policy options available?

Bray(1999) states that “Expanding number of researchers are focusing on the study of scale and position of private tutoring. Such tutoring is widely called shadow (private) tutoring, since much of its curriculum mimic that of regular schooling”. In the present increasingly knowledge based and globalized societies, where countries and firms



complete on the basis of quality of their workforce, higher and higher levels of education are necessary in order to be considered for a full time job. Having finished secondary education or having a higher degree is not a guarantee against unemployment, but it is the best investment a family can make to prepare their children for the future for an innovative, highly profiled and secured learning environment in today's distracted and stressed. Students who are under increasing pressure for performing well examinations, securing best positions and driving their future in desired directions are found to be fueling demand for private tutoring as a complement to the courses in formal education. But on the other hand people of some economic classes are not even capable to bear the normal spending on education which make sure of not being able to be involved in such private tutoring: this has led to and may continue to lead to the deterioration of the quality of education and may create a huge gap of relational and economical border in between the educational people and organizations.

The booklet has shown that the shadow system of private supplementary tutoring is very wide-spread and that in some parts of world is growing in rapid speed. Supplementary tutoring has major social and economic implications it can have a far reaching impact on mainstream education systems. The central message of this booklet is that the shadow education system deserves much greater attentions by planners, policy makers and researchers that it has so far received.

### **Roger & Dang(2008), The Growing phenomenon of Private Tutoring:**

This report is focused on examining how the opening of a free market for private tutoring has affected education, including the study of nature , causes and consequences of private tutoring in Azerbaiizan, Bosnia and Hergovina, Croatia, Georgia, Lithuania, Mongolia, Poland, Slovakia and Ukraine. This report consists of an in-depth international comparative overview of the study's findings as well as country reports on private prepared by each of the education policy centers and their partners. In this report, "Private tutoring" supplementary education system to the mainstream education system is

considered beneficial in some aspects and extent that it helps students to increase their competitiveness in the educational market. It is also avenue for private investment in human capital, provides incomes for underpaid educators, and can be constructive out-of-school activity for under supervised youth.

Apart from this, Report has pointed that Private tutoring has had, or may have had, a number of negative consequences. These include exacerbating social inequalities, distorting curricula and teacher performance in mainstream schools, fostering corruption, skewing the university admissions process, and depriving the state of tax revenues. The growth in the new, market-driven environment in these formerly socialist countries are explained to be indicating inadequacies in their education system. Report states that the four participating countries with the largest scope of private tutoring(Azerbaijan, Georgia, Mongolia and Ukraine) have the lowest per capita Gross National Income(GNI). Almost 60% of respondents in Azerbaijan and over 50% in Georgia indicated that private tutoring is “the only way to get high quality education.” According to report, Most respondents in Azerbaijan(66.5%), Mongolia(63.7), and Ukraine(58.7) indicated that they believed that teachers treat students who take private tutoring better than they treat students who do not. On the basis of finding, Report states, “teachers must receive sufficient salaries. When economic hardship drives teachers to seek supplementary income by tutoring, it jeopardizes the fabric of society, including the commitment to free education & Ministers of education should ensure that all topics conducted on university entrance examination are part of respective course curricula.

### **Market Research Firm(2012), Global industry Organization-GIA**

According to the market research firm, “Global Industry Analysts (GIA)” has released a study in the date of 2012 stating that the global private tutoring market is projected to surpass \$102.8 billion by 2018. According to the GIA, the burgeoning private tutoring market is being driven by the failure of mainstream education systems to cater to the unique needs of students, combined with growing parental desire to secure the best possible education for their children in a highly competitive world. The research based on GIA, more than 90% of the global private tutoring market is highly responded by the Asia. By this statistics, Asia has clearly lead the global tutoring boom.

Based on GIA figures, the United States, Europe, and Asia-Pacific (notably Hong Kong, Japan, Singapore, South Korea, and China) are responsible for more than 90% of the global private tutoring market. As noted in the GIA report, the private tutoring market in tutoring-crazed South Korea alone is projected to reach \$13.9 billion — roughly 15% of the entire market — by the end of 2012.

In addition, India is leading the way in online tutoring by offering professional linguistic and academic coaching capabilities at an affordable cost. While Asia has clearly driven the global tutoring boom, the U.S. is catching up. In 2011, the U.S. federal government invested \$134 million into private enrichment programs for low-income students under the auspices of the “No child left behind Act”. However, according to the sacramento trade (business) journal, as budget cuts lead to “fewer at-school tutoring programs, more private businesses have opened to fill the gap.”

According to Rebecca Fochek, the Omaha-based founder of Academic Coaching Academy- private tutoring offers an innovative, highly personalized and secure learning environment for today’s stressed and distracted students, who are under increasing pressure to perform well in competitive entrance and academic examinations for their leading future with highly ranged certificate.

### **Open Society Institutes(2006), Newyork, USA Education in a hidden market place: Monitoring of private tutoring**

This report is focused on examining how the opening of a free market for private tutoring has affected education, including the study of nature , causes and consequences of private tutoring in Azerbaiizan, Bosnia and Hergovina, Croatia, Georgia, Lithuania, Mongolia, Poland, Slovakia and Ukrane. This report consists of an in-depth international comparative overview of the study’s findings as well as country reports on private prepared by each of the education policy centers and their partners.

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private investment in human capital, provides incomes for underpaid educators, and can be constructive out-of-school activity for under supervised youth. Examination are part of respective course curricula. But apart from this, Report has pointed that, -Private tutoring has had, or may have had, a number of negative consequences. These include exacerbating social inequalities, distorting curricula and teacher performance in mainstream schools, fostering corruption, skewing the university admissions process, and depriving the state of tax revenues. The growth in the new, market-driven environment in these formerly socialist countries are explained to be indicating inadequacies in their education system.

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### **Jayachandran(2012), Incentives to teach badly: after school tutoring in developing countries**

According to the jayachandran, students in developing countries receive private tutoring in addition to their regular school instruction. In Bangladesh, over 40% of primary school students attend private tutoring sessions. In Kenya, the figure is 65% and Sri Lanka 80% of lower secondary students do so.

In the context of Nepal, it is stated that over 50% students of secondary school students take tutoring classes. High-stakes end of year exams that determine whether a student can continue the study or not is stated as one likely reason for the prevalence of

private tutoring in developing countries. This study has presented the driving factors of private tutoring in classified form: Micro & Macro. To understand the equity and productivity of private tutoring some social, economical and cultural values are explained to be the primary elements and the very elements are stated to have been effecting in growing nature of private tutoring sector. It is essential to understand the micro and macro factors that create demand for tutoring factors at the micro level may include the characteristics of individuals, households, schools and communities. Macro level factor may include the share of public spending allocated to public education, the characteristics of the education system and labor market and national cultural values. Together these factors are presented as the determining factors for the level and slope of the tutoring demand curve for society as a whole.

Jayaachandran states, “the anecdotal evidence suggests that teachers incentives are worse than better when they offer for profit tutoring. However, it is important to note that the incentives effect theoretically could go either way. If school instruction and tutoring are substitutes, then teachers who teach less during the school day are rewarded with higher profits. But, conversely, if the demand for tutoring is higher when students learn more during the regular day, then being able to offer tutoring could give teachers the incentives to do a better job during the regular school day”. This way, Jayachandran is found to be standing in favor of private tutoring in some aspects.

**Yadav, Lama & Thapa-2016, central department of education, TU: Shadow education as burning issue in contemporary education**

The volume of Private tutoring is found to be standing on the base of infirmity of mainstream educating system and increasing rapidly day by day , though The Government and the Responsible academic organizations seem to be keeping silent in the concern of balancing the unsystematic and irrational situation about this properly undefined academic society, “private tutoring”. We cannot find any fixed fee structure in any institutions engaged in this tutoring system. Some of the major reasoning factor because of which private tutoring is in this hugely enlarged extent are mentioned as follows in the journal writing:

- Weak management in academic activities
- The Concept of parents that formal schooling is inadequate
- Intense competition to compete with other students
- More sensitive nature of parents about the future of children

From the above literature review, some possible extent of studies are found to be conducted around the world but very few and inadequate steps are found in our national context. Though shadow education is found to have become a primary strategy to enhance the achievement of students in all nations. Why so many families in diverse cultures engaged in structured forms of education of outside of schools. Despite the lack of accountability and transparency, parents around the world continue paying huge amount of money for their children to be tutored. Generally we believe this is because parents feel inadequate, they feel like they are a bad parent if they do not help their child succeed in every way. Shadow education is growing around the world but reliable data is difficult to come across. Students hesitate to reveal how much tutoring they receive, partly because they feel shy about seeking extra help and the private tutoring is not found to be brought under certain rule and regulation due to the passive concentration of concerned administration. To enlighten the shadow of shadow education, it is very important to conduct some studies and research. Therefore, on this ground, researcher is motivated to carry out this study.

### **Theoretical Construction**

This section deals with the theoretical supports of the study. There are many theories developed by different educators and scholars in terms of addressing the learning in the various contextual society. Out of several theories, some are developed by cognitive theme, some are by behaviorist, some are by constructivist. All theories have their own significant and vital rhythm in learning but this study is based on learning in society & socio-economic aspect, so the researcher will synchronize the approach of oppression, i.e. pedagogy of oppressed.

Pedagogy of the Oppressed

Pedagogy of the Oppressed introduced by Paulo Freire, proposes a pedagogy with a new relationship between teacher, student, and socio-economic aspects. It was first published in 1968. This approach is considered one of the foundational attempt of critical pedagogy. Dedicated to the oppressed and based on his own experience helping Brazilian adults to read and write, Freire includes a detailed Marxist class analysis in his exploration of the relationship between the colonizer and the colonized (Levana, 2011).

In this approach, Freire calls traditional pedagogy the "banking model" because it treats the student as an empty vessel to be filled with knowledge, like a piggy bank. However, he argues for pedagogy to treat the learner as a co-creator of knowledge. Pedagogy of the Oppressed is an education as a practice of freedom, which Freire contrasts with education as a practice of domination. Freire wanted them to be constantly recreated and adapted to fit different realities, struggles, and generations. Some common practices guided by a Pedagogy of the Oppressed are found as follows:

- **Dialogue:** In the context of dialogue, Freire explains that what most people think of as dialogue is really a debate, where people compete to deposit ideas into the other or name the world on behalf of the other as an end in itself. However "true dialogue" is means for deeper understanding, in which the world is named through both lived experience and theory and explores common patterns among the participants as an act of creation and re-creation of knowledge in order to generate action.
- **Participatory Action Research:** People explore the problems they face in their community, and then find solutions through gathering data from their peers, analyzing the data and then taking informed action. It's a model of community organizing that builds the capacity and expertise of people on the front-line of a problem.
- **Coding:** The idea of Freire begins with generating "codes" or images that speak a thousand words about the world of the participants. These codes become the subject of subsequent dialogues and through a "decoding" of the group's life circumstances, the student-teachers recognize their right to a worldview.

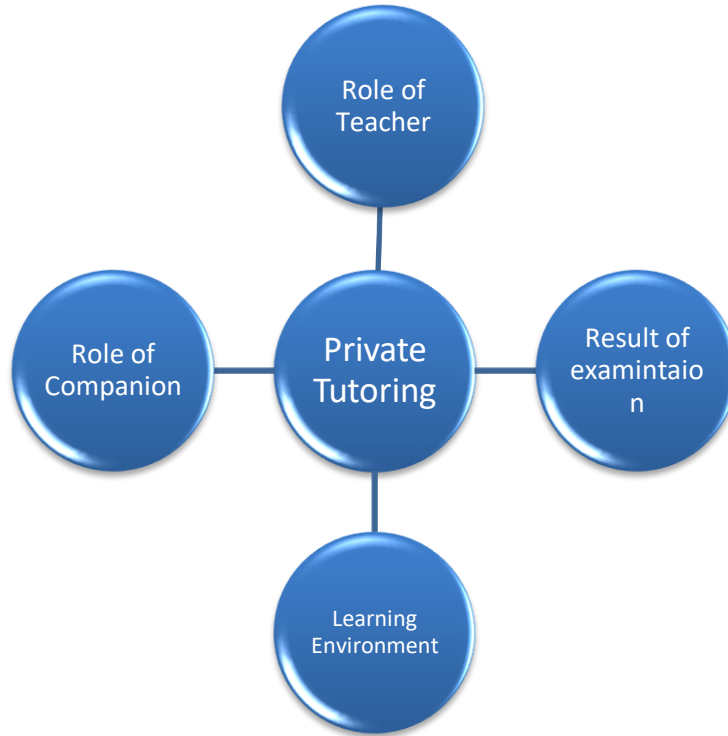
Many of our movements today are fueled by non-profit organizations that strategize behind closed doors and advance their campaigns through “organizing” people to support their agendas. Imagine movements led by people on the frontlines of the crisis’s we face. Imagine popular education, creative dialogue and participatory action research generating the solutions that the people are supported and funded to implement themselves. This, according to the Pedagogy of the Oppressed, can transform our world.

On the contrary, Private tutoring and its drives are standing exactly in the opposite pole of socio-economic aspect enlarging the education sector as a money-centered market in the wave of Banking mode as Friere describes. Since the approach of friere proposes the Marxist view on socio-economic base for every academic steps, genuinely the theme of the study is found to be supported by the pedagogy of oppressed in the realistic context of Private tutoring.

### **Conceptual Framework**

Conceptual framework itself is a road map of study through which the researcher provides the convenience to himself and determines the dedicated zone of the study. Review of related literature and objective of the study concurred the different factors interrelated with the theme of study which were developed as the component of conceptual frame work. On the basis of above components, researcher prepared the questionnaire and attempted to explore how the above components played role in the participation of students in private tutoring. In the light of the above reviewed literature and from the interest of study, the following conceptual framework was purposed for the research:





The above diagram relates the study of concern, i.e. private tutoring to its reasoning factors in between the annual and semester students varying on the basis of subjects and academic aspects of the students. The main objective of this study was to find the way how private tutoring is reasoned and interrelated with the academic phenomenon. On the basis of above conceptual framework, the most affecting and directly interrelated factors were brought in light and tried to find how the teachers, companions, results and learning environment could be reasoning factors of private tutoring.

### **Chapter – III**

#### **METHODS AND PROCEDURES**

Research method is a process under which the research task is accomplished. In other words, all the process conducted by the researcher to solve the research problem is the research method. Research methodology is a science which determines how the research should be completed systematically so this chapter dealt with various aspects regarding research method. This study focused on identifying mathematics learning

through the impacts of private tutoring, learning environment, contextual phenomena and changing academic system.

### **Design of the Study**

This is a survey type study related to impacts of private tutoring in mathematics learning. The researcher followed the quantitative technique in the research in which the numerical data was analyzed by using statistical technique and the descriptive ways to analyze the qualitative natured data and records. The researcher tried to recognize and isolate specific variables contained within the study framework, relationships and causality, and attempted to control the environment in which the data was collected minimizing the risk of variables.

Quantitative methods emphasize objective measurements and the statistical, mathematical, or numerical analysis of data collected through polls, questionnaires, and surveys, or by manipulating pre-existing statistical data using computational techniques. Quantitative research focuses on gathering numerical data and generalizing it across groups of people or to explain a particular phenomenon (Stanely,2016). Quantitative methods presume to have an objective approach to studying research problems, where data is controlled and measured, to address the accumulation of facts, and to determine the causes of behavior. As a consequence, the results of quantitative research may be statistically significant but are found often humanly insignificant in our real life. Its main characteristics are: In current period of our practice, following methods are used in the quantitative research which was applied here in this study:

### **Survey**

Survey research is one of the most important area of measurement in applied social research. The broad area of survey research encompasses any measurement procedures that involve asking questions of respondents. A "survey" can be anything form a short paper-and-pencil feedback form to an intensive one-on-one in-depth interview. Surveys are divided into two broad categories: the questionnaire and the interview.

Questionnaires: Questionnaires are usually paper-and-pencil instruments that the respondent completes. Interviews are completed by the interviewer based on the

respondent says. Sometimes, it's hard to tell the difference between a questionnaire and an interview. For instance, some people think that questionnaires always ask short closed-ended questions while interviews always ask broad open-ended ones.

**Interviews:** Interviews are a far more personal form of research than questionnaires. In the personal interview, the interviewer works directly with the respondent. Unlike with mail surveys, the interviewer has the opportunity to probe or ask follow-up questions. And, interviews are generally easier for the respondent, especially if what is sought is opinions or impressions. Interviews can be very time consuming and they are resource intensive. The interviewer is considered as a part of the measurement instrument and interviewers have to be well trained in how to respond to any contingency.

### **Population of the Study**

As the major concern was to conduct the study upon the effects of private tutoring in the Mathematics and non-mathematics student, semester and annual Mathematics students, Central college of TU where mathematics is taught and where the students up-brought from the annual system were being enrolled was taken from different subject(Departments) for the study. All the students i.e. around 600 students of Mathematics, English and Nepali depart was taken as the population of the study.

### **Sample of the Study**

The students of the mathematics and non-mathematics were engaged by stratifying them into required strata according to the respective specified subjects, i.e. Mathematics group, Nepali group, English group for the comparative study and since homogeneity within the stratum is the smooth way to study, programs(semester and annual) as more than  $\frac{3}{4}$  (general assumption) students have their previous academic experience in annual and are here engaged in semester system. Each stratum was made up of in accordance with requirements of study and the size of respondents population of atleast 40 students in each stratum and as a whole 120 students which is around 20% of the population was taken as respondents in this study.

### **Tools for data collection**

Tools and instruments are very important for the research. The main tool for this study were

## **Questionnaire**

“A questionnaire is a research instrument consisting of a series of questions and other prompts for the purpose of gathering information from respondents. Although they are often designed for statistical analysis of the responses, this is not always the case”- Statistical Society of London, (1838).

Questionnaire is the major tool for this study. The investigator developed the set of questionnaire to know the selected for the required information. Some questionnaires were open-ended and some are closed-ended. To go in-depth of the information, researcher carried out the information from questionnaire. On the basis of the objectives the researcher developed the questionnaire which was used to see the variable like student’s educational status, gender, academic subjects.

## **Academic results**

The outcome obtained by the students in their final academic examinations. On the basis of the result conducted by the board was taken as the major tool in this research for the comparative study in students of semester and annual system.

## **Reliability and Validity of the Instrument**

Pilot testing was the first measure to ensure the reliability of the tools of this study. The reliability of questionnaires was established according to the result-observation which was done for two times as test re-test method and calculating correlation coefficient between the result obtained by the observation. for reliability by using the questionnaire form and consistent result was found by using the correlation between the both result. To obtain the reliability of study, standardized practice of

questionnaire production was adopted for the study by the help of guide and teachers. This interpretation was done in the implementation of the framework as the researcher developed and was matched up with the standard approach of recent trend.

*In general, validity of instrument* is the extent to which an instrument measures what it is supposed to measure and performs as it is designed to perform (Stanely,2016).

The researcher was focused on content based application and sample based activity centered tools including final academic results and questionnaires. Since the research was conducted on the basis of academic results, then it must be valid and authentic. So for the validity of the study, researcher adopted the contextual references for the content validity and population representative sample for external validity.

### **Data Collection Procedure**

One of the most important and essential step to answer the research purpose was the data collection procedure. For the data collection, the investigator visited central college of Tribhuvan University. At first , as per the requirement of research, the researcher asked for the permission of HOD of Education for the study, afterwards, the researcher will take administrative section in the first line help for collecting the academic result history. After that, researcher selected the certain academic departments on the basis of research query and conduct the study casting questionnaire form in the different classes as much as the study requires by the help of teachers.

### **Data Analysis Procedure**

As per the requirement of the study, Data collection and analysis procedure was followed in a multi-pronged approach involving the collection & analysis of primary and secondary data from the selected sample and available journals, previously accomplished reviews and records. The collected data was analyzed by the method of statistical techniques in quantitative form And qualitatively collected information will be presented in descriptive manner. The researcher analyzed the data by calculating the mean, standard deviation of the sampled students. The statistical tool of t-test was used to

compare the opposite poled phenomena as defined in the study to find out the significant difference between the impacts of private tutoring in previous academic system(annual) and current academic system(semester). The t-test was used to compare the effect of private tutoring in the mathematics students and non-mathematics students. The first and second objective of the study were analyzed on the basis of t-test (Two tailed & 0.05 level of significance) and third was analyzed by interpreting the different level of majority in different views in numerical scale of percentage.

## **Chapter – IV**

### **ANALYSIS AND INTERPRETATION OF DATA**

This chapter reflects the analysis of the collected data with their interpretation. The data were collected to fulfill the objectives of the study. In the process of analyzing the collected data and their interpretation, several descriptive manner and statistical techniques have been used in this study. To make the presentation more comprehensive and coherent, the subdivisions with the suitable themes are constructed to make the interpretation. The data are organized and tabulated in the academic fashion as far as possible.

#### **Results of questionnaire (Part-I)**

To accelerate the survey, 40 students from Mathematics, 40 students from English and 40 students from Nepali group were selected randomly. Among them 12 students from Math group, 7 students from English group and none of the students from nepalai group were involved in private tuition classes when the survey was conducted and the students were

engaged in semester system. But on the basis of discussion conducted by the researcher it was found that 28 students from Math group, 25 students from English group had participated in private tutoring when they were in Bachelor level with annual academic system. In the concern of students of nepali group, None of the students were found to have taken any tuition classes in 2<sup>nd</sup> & 3<sup>rd</sup> year of Bachelor but 25 students stated that they had taken private tuition classes in 1<sup>st</sup> year of Bachelor for compulsory English.

The mean, standard deviation and corresponding t-value of score obtained by the students involved and not involved in private tutoring groups are presented in the table 1. On the other hand, table 2 contains the comparative mean achievement scores of same group of students in annual academic system with private tutoring classes and in semester academic system without any tuition classes.

**Table 1**

**Comparison of achievement scores of students involved and not involved in private tutoring classes :**

| Group                        | Sample size (N) | Mean ( $\bar{X}$ ) | Standard Deviation(S) | t-value      |
|------------------------------|-----------------|--------------------|-----------------------|--------------|
| Private tuition students     | <b>12</b>       | <b>71.33</b>       | <b>3.72</b>           | <b>2.042</b> |
| Non Private tuition students | <b>18</b>       | <b>74.78</b>       | <b>4.99</b>           |              |

$t_{0.025,28} = 2.048$ , Significance at 0.05 level with  $df = 28$ .

The above table 1 shows that mean scores of Private tutoring students and non private tutoring students are 71.33 and 74.78 respectively which gives the mean difference of these two groups is 2.45, that means the mean score of non private tutoring is higher than the mean score of private tutoring. The standard deviation of Private tutoring students and non private tutoring students are 3.72 and 4.99. the obtained t-value is 2.042 which falls in the acceptance region, i.e.  $-2.048 \leq t \leq 2.048$ . Thus the null hypothesis, “ there is no significance difference in the mean achievement of students involved in private tutoring and

not involved in private tutoring students” is accepted. And the alternative hypothesis is rejected.

**Table 2**

**Comparison of mean achievement scores of same group of students secured in annual system and semester system :**

| Group          | Sample size (N) | Mean ( $\bar{X}$ ) | Standard Deviation(S) | t-value |
|----------------|-----------------|--------------------|-----------------------|---------|
| Annual Group   | 15              | 57.53              | 4.84                  | 7.267   |
| Semester Group | 15              | 71.53              | 5.69                  |         |

$t_{0.025,28} = 2.048$ , Significance at 0.05 level with df = 28.

The above table 2 shows that mean scores of same group of students in different academic system i.e. annual academic system having private tutoring classes and semester academic system without any tuition classes, where the mean scores of annual and semester group are 57.53 and 71.53 respectively, which gives the mean difference of these two groups is 14, which shows that the mean score is higher when the students were engaged in semester system even without any private tutoring classes than in annual academic system with private tutoring classes. The standard deviation of annual group students and non semester students are 4.84 and 5.69. the obtained t-value is 7.267 which falls out of the acceptance region, i.e.  $-2.048 \leq t \leq 2.048$ . Thus the null hypotheses, “There is no significance difference between the achievement of students of semester and annual students ” is rejected. And the alternative hypothesis, “there is significance difference between the achievement of students of semester system and annual system” is accepted.

### **Results of questionnaire (Part-II)**

The tables given below shows the students’ response to different statements on private tutoring and school teachers’ teaching as displayed in the conceptual frame work which was analysed on the basis of modified Likert scale (see appendix-1). Each of the questions had the following points against each of the statements on the scale: 5=Strongly Agree, 4= Agree, 3= Neutral, 2=Disagree, 1= Strongly Disagree



If the highest percentage of students circles 5 or 4 then it is considered that majority of them have supported the statement. If the percentage is low, it means that only few students' have supported the statement. On the other hand, if highest percentage of the students circles 2 or 1, it is considered that most of the students have disagreed with the statement. If percentage is low, it means that only few students have disagreed with the statement.

**Effect of role of teacher**

Teacher is the main key character of teaching learning activities. As the teachers' direction and guidelines are vital in each and every academic activities of students, some queries concerned with private tutoring are placed in front of the students through the questionnaire and obtained results are also explained below.

**Table 3**

| Students always understands what teacher explains in class at college |                |       |         |          |                   |
|---|----------------|-------|---------|----------|-------------------|
|   | Strongly agree | agree | neutral | disagree | Strongly disagree |
| No. of students   | 0              | 36    | 33      | 51       | 0                 |
| Percentage  | 0%             | 30%   | 27.5%   | 42.5%    | 0%                |

According to table 3, it can be seen that 51 students (42.5%) disagreed that they always understood what teachers explained to them in class at college. And it also can be seen that 33 learners (27.5%) are neutral which means sometimes they understand and sometimes they do not understand teacher's lecture in class. Only 36 learners (30%) agree with the statement. So the researcher found that most of the students not supporting the statement.

**Table 4**

|  |
|--|
| Students are always satisfied with the lesson given by teacher at college. |
|--|

|                 | Strongly agree | agree | Neutral | disagree | Strongly disagree |
|-----------------|----------------|-------|---------|----------|-------------------|
| No. of students | 0              | 33    | 62      | 25       | 0                 |
| Percentage      | 0%             | 27.5% | 51.67%  | 20.83%   | 0%                |

In above table 4, 62 students (51.67%) stay neutral with the statement that they are satisfied with the lesson given by teacher at school. They may be some time getting and some time not getting their teacher. Total 25 students (20.83%) disagree and total 33 students (27.5%) respond from the range of “agree” . Many learners always cannot be satisfied with the lesson at college because college teachers do not get enough time to explain properly the whole lesson. So some sharp students can understand the lesson within short duration of class time but some students cannot understand.

**Table 5**

| Students are always satisfied with the lesson given by private tutor. |                |       |         |          |                   |
|---|----------------|-------|---------|----------|-------------------|
|   | Strongly agree | agree | neutral | disagree | Strongly disagree |
| No. of students   | 42             | 60    | 18      | 0        | 0                 |
| Percentage  | 35%            | 50%   | 15%     | 0%       | 0%                |

Here in table 5, many students are satisfied with the lesson provided by private tutor. Most of the students select good and efficient teacher as their private tutor and learners become also motivated to learn from his or her private tutor. So naturally they become satisfied with the private tutors teaching. 15% (18 students) are found to be remaining neutral.

And 42 students (35%) and 60 students (50%) become ‘Strongly agree’ and ‘agree’ which reveal that majority of the learners supported this statement.

### Effect of result of Examination

Every effort every character is directed by some expectations, in the same way it is true by virtue that students also expect something what they do, so result of examinations is taken as the issue of involvement of students in private tutoring, data was collected and analyzed as follows:

**Table 6**

| Result can be improved after taking private tuition. |                |        |         |          |                   |
|--|----------------|--------|---------|----------|-------------------|
|  | Strongly agree | agree  | Neutral | disagree | Strongly disagree |
| No. of students                                      | 43             | 55     | 22      | 0        | 0                 |
| Percentage   | 35.83%         | 45.83% | 18.33%  | 0%       | 0%                |

In table 6, 43 students (35.83%) and 55 students (45.83%) of the student participants “Strongly agree” and “Agree” respectively that result can be improved after receiving private tutoring. 22 students (18.33%) remains neutral. Private tutor take extra care about their subject matter and ask them to practice more and more so as a result, improvement in result is obvious after receiving private tutoring. Here, highest percentage reveals that most respondents support this statement.

### Effect of learning environment

Here in this study, the term “Environment refers to the overall surrounding, activities, activities cooperation, number of students of the classroom. Environment consists of multi-

dimensional aspects though the major factor which directly can affect the learning psychology is taken as the environment in the study. Some aspects related in this context is stated as query in front of students through questionnaire and analyzed as shown below:

**Table 7**

| Students always can ask problems to college tutor in class. |                |        |         |          |                   |
|---|----------------|--------|---------|----------|-------------------|
|   | Strongly agree | agree  | neutral | disagree | Strongly disagree |
| No. of students   | 0              | 28     | 26      | 66       | 0                 |
| Percentage  | 0%             | 23.33% | 21.67%  | 55%      | 0%                |

In table 7, 66 students (55%) disagree with the statement which means they do not always get chance to ask their college teachers about their problems. These students cannot get chance to discuss their problems with school teacher in class time. 26 learners (21.67%) are neutral which means sometimes they get chance to ask their school teachers about their problems. And 28 learners (23.33%) agree with the statement. They may be very active students in their class and they actively make their own way to ask about their problems to the teacher in a short duration of class. The highest percentage represents that majority of students disagree with the statement.

**Table 8**

| Students always can ask problems to teacher in private tutoring. |                |       |         |          |                   |
|--|----------------|-------|---------|----------|-------------------|
|  | Strongly agree | Agree | neutral | disagree | Strongly disagree |
| No. of students  | 73             | 45    | 0       | 2        | 0                 |
| Percentage   | 60.83%         | 37.5% | 0%      | 1.67%    | 0%                |

In table 7, 73 students (60.83%) strongly agree and 45 students (37.5%) agree that they can ask their private tutor about their problems. Students receive private tutoring to get extra help for their study. A private tutor has enough time to solve his students' problems. So students always get chance to ask and discuss about their problems with the private tutor. And only 2 students (1.67%) cannot always discuss or ask his or her problems to the private tutor because learner may be less motivated about his study. So highest percentage is 60.83% which show that majority of the students strongly agreed with the statement.

### **Effect of Role of Companion**

Companion or friends are the most significant factor in student life, which directly affects the learning activities of students. Hence role of companion was taken as the part of study in this context of involvement of students in private tutoring. The responses from sample students were taken and viewed in analysis as follows:

**Table 9**

| Students goes to private tuition because most of the friends go to private tutor. |                |       |         |          |                   |
|---|----------------|-------|---------|----------|-------------------|
|   | Strongly agree | agree | neutral | disagree | Strongly disagree |
| No. of students   | 0              | 6     | 20      | 31       | 63                |
| Percentage  | 0%             | 5%    | 16.67%  | 25.83%   | 52.5%             |

The results of table 9 revealed that 31 students (25.83%) disagreed and 63 students (52.5%) strongly disagree to the statement that students go to private tutor because all their friends go to private tutor. Only 6 students (5%) agreed with this statement which means they are not actually interested in studying. They go to private tuition because they get to meet their friends in the tutors place. But we can see from the table, most students do not support

this statement. By this, it can be said that majority of students go to private tutoring not due to the effect of companion but rather than because of their need.

### **Qualitative Interpretation of Questionnaire Result**

In most of the part of academic domain, private tutoring is a found to be covering all stage of schooling with far reaching economic, social and educational implications. Even though private tutoring is acting as supplementary mode of mainstream education it is taken as the controversial issue in educational and socio-economic perspective. Private tutoring is supposed to be a shadowy phenomenon on exacerbating social inequalities and interfering into educational process. Therefore, having a huge impact on education, private tutoring was analyzed and taken into account of analysis with certain aspect. On the other hand, along with the change in the practice of academic system, private tutoring seems to be having passive influence in this newly developed trend of semester system in education. There are certain characteristics of a semester compared to annual system , it involves focused attention of runners (students) and teachers on teaching- learning curricula; the more interactive and organized classroom and shuffles as a whole mode of methodology of academic activities to be pedagogical processes and students are kept busy at the concerned level of burden throughout the sessions. The causes of involvement of students in private tutoring were found as below from the study:

- Traditional teaching learning methodology.
- Lack of real life teaching learning practice in class room.
- Poor management of learning environment and large number of students .
- Poor result in examinations.
- Irresponsible nature of academic system and tutors.

Private tutoring is enhancing its shape in the leaking parts of poor managerial aspects of mainstream education system though along with the change in adopting the academic system from annual to semester system , the flow of private tutoring is searched

out to have been embanked in continuously. To minimize the influence of private tutoring , it is necessary to shift the performance based result system from the score based examination. Private tutoring has expanded significantly and is now recognized to have far-reaching significance Moreover due the lack of systematic policy it has transformed the whole education society into business market though if right effort is taken in this concern shadow education can be reliable auxiliary branch to support the mainstream education.

## **Chapter – V**

### **SUMMARY, FINDING, CONCLUSION AND RECOMMENDATION**

This chapter describes the major findings drawn from the analysis and interpretation and discussion result from the collected data. Conclusion is described from the result of interpretation of data. The chapter closes with implication of research. A recommendation of the study is given for the area where this study can be applied.

#### **Summary of the Study**

The title of the study is "Position of private tutoring in Mathematics learning". The main objectives were to analyze the effect of private tutoring in mathematics and non-mathematics students of TU., to analyze the degree of effect of private tutoring in changing academic system of TU from annual to semester and to explore the major factors of existing and expanding nature of private tutoring. So for this study to achieve the possible extent of objectives, the population of study was the whole students of mathematics education department, Nepali education department and English education department from where 40 students from Mathematics education, 40 students from Nepali education and 40 students from English education department were selected as sample of study in random method. Private tutoring is a growing concern for many around the globe. Its prevalence among teachers, elementary and high school students as well as college students is one the rise.

private tutoring has its positive aspects since it helps students in academic activities. By analysis of data collected from the sample students, Mathematics students were

found more involved in private tutoring in comparison to non-mathematics students in annual academic system which was found to be decreased by semester system. So it makes no confusion that semester system with new approach of academic trend and technique, small number of students and overall skilled managerial aspect of semester system can decrease the involvement of students in private tutoring.

The purpose of this study was to find the reasoning factors and extent of its effect in the contemporary academic society. Regarding the use of Private tutoring, students and parents are found to be driven by levels of economic, social and cultural capital. Comparing low- medium and high-use of private tutoring student groups reveals similarities in resource allocation processes despite great communal differences. Specifically, as family capital increases so too does the use of the private tutoring; cultural and economical capital is the best predictor of private tutoring. The social reproductive aspect of private tutoring use has implications on education inequality, particularly in light of recent efforts by governmental plans and different organizations to provide free public primary education to all children. While mass education helps to integrate children into a global economy, the use of private tutoring will maintain existing patterns of stratification. However, private tutoring has its positive aspects as well. These mixed findings point to a complex supplementary educational system that can both maintain inequality as well as it can help the students those who are in need of proper guidance. The causes of involvement of students in private tutoring were found from the study:

- Traditional teaching learning methodology.
- Lack of real life teaching learning practice in class room.
- Presence of large number of students.
- Poor result in examinations.
- Irresponsible nature of academic system.

Private tutoring itself is also an auxiliary academic system which mimics the certain academic activities of main stream education system, so it was obvious to have some extent of effects in



social and national academic cycle before the research and was found in the same form as it was hypothesized to have its effect in learning context.

### **Findings of the Study**

Like a shadow, Private tutoring generally goes unnoticed and it takes the shape of formal school in curricula and purpose, due to which somewhere private tutoring is found to be addressed by the term “shadow education” where Shadow education takes many forms. Somewhere it is found in informal way as a senior student teaching a junior student or a teacher tutoring a student or group of students; or, it can be something more formalized and complex such as organized learning centers. Some major findings studied on the base of objectives of the research are presented as follows in

- In this study, on the basis of data analysis, Not huge difference was found in the achievement score of students involved in private tutoring and students not involved in private tutoring. Due to the poor preliminary knowledge, expectation for good result students were found to be involved in private tutoring.
- In the case of analysis of data of students of semester system without private tutoring and students of annual system with private tutoring. Not any better result has been found, created by private tutoring but rather than students of semester system were found doing well in examinations in comparison to the annual students with private tutoring. So it is certain that due to poor management of classroom activities, teaching environment, poor basic knowledge of students about course of study Students go for private tutoring and students become familiar with content in certain extent which just

makes them pass in examination, but it does not assure that students achieves the Excellency in examination

- The reasoning factor of private tutoring found from the study: Traditional teaching learning methodology, Lack of real life teaching learning practice in class room, Presence of large number of students, Poor result in examinations.

### **Conclusion of the Study**

This research is all about the study upon nature of private tutoring and effects of private tutoring in mathematics learning. It is definite that private tutoring does not consist only negative side, it has good side too. A private tutor helps his learners to fill the gaps of what they don't learn in school. A weak learner needs help which can be provided by a private tutor successfully. Hence, It would not be a wise decision for any nations to ban private tutoring. Different countries such as, in Korea and Mauritius were tried to ban private tuition but failed and at last the governments were forced to lift the bans and regulate private tutoring.

By this study which is concerned on identifying the position conquered by the private tutoring in the changing academic system from annual to semester explored the following terms in the conclusive manner and are shown here in bullets as follows :

- Private tutoring is standing on the leakage of mainstream education system though along with the change in adopting the academic system from annual to semester system , the flow of private tutoring is searched out to have been embanked in continuously.
- To minimize the influence of private tutoring , it is necessary to shift the performance based result system from the score based examination.
- Private tutoring has expanded significantly worldwide and is now recognized to have far-reaching significance Moreover due the lack of systematic policy it has transformed the whole education society into business market though if right effort is taken in this concern shadow education can be reliable auxiliary branch to support the mainstream education.

In conclusion, The main responsibility of responsible and authorized party of academic society is to control corruption in private tutoring and should make sure that only those students will go to private tutor who needs it. A private tutor should not be hired just because friends or neighbors have private tutor and is doing well. The learner should understand why he or she needs a private tutor and how he can benefit fully from this tutor. So we all should be responsible and should raise awareness about it.

### **Recommendation**

Private tutoring has both positive and negative sides. Parents and students should not depend on private tuition. We should find good effects of private tutoring and make the best use of it. So suggestions or recommendations are given below:

At first, the teaching system of recent practice should be changed. Large number of students in a class is the core of all the problems. As there are too many students, teachers could not give emphasis on overall activities of students. Instead of having one or two sections of 50 to 60 students, it is better to make four or five sections of one class consisting of a maximum of 20 to 30 students. Another problem is while teaching, Mathematics is taken as difficult subject so teachers should attempt to teach the student using real life experience and example as far as possible. In some of the school, all the subjects are taught in mother tongue and in higher education, suddenly mathematics is taught in English medium which creates a problem. Weak students can be sent to private tuition for a selected time. Private tutor will find out his problem area and try to solve it though this task is also possible in college and school as well. From these all, it is recommended that both school teachers and private tutors should get training from the government. The government should make a rule that without the training they cannot teach any students.

### **Recommendations for Further Study**

This study cannot be said a complete study. Some recommendations for further study are as follows;

- Test whether the findings of this research are valid or not.
- Conduct this study in primary level, secondary level and higher secondary level

- Analyze the psychological aspects that are responsible for the growing nature of private tutoring in recent academic arena.
- Determine the optimum teaching approach and methodology in order to decrease the use of private tutoring.
- Study what extent of distance and socio economic stratification can be made by private tutoring if it goes on in its present motion.

**Appendix-A**

**Questionnaire**

College Name: .....

Semester: .....

Student Name: .....

Subject(Department): .....

Tick the best answer as per your experience:

|  |                |       |         |          |                   |
|--|----------------|-------|---------|----------|-------------------|
| 1. Always understands what teacher explains to me in class at school |                |       |         |          |                   |
|  | Strongly agree | agree | neutral | disagree | Strongly disagree |
| No. of students  |                |       |         |          |                   |
| 2. Always can ask my problems to my private tutor                    |                |       |         |          |                   |
|  | Strongly agree | agree | neutral | disagree | Strongly disagree |
| No. of students  |                |       |         |          |                   |
| 3. Satisfied with the lesson given by teacher at school              |                |       |         |          |                   |
|  | Strongly agree | agree | neutral | disagree | Strongly disagree |
| No. of students  |                |       |         |          |                   |
| 4. Satisfied with the lesson given by private tutor                  |                |       |         |          |                   |
|  | Strongly agree | agree | neutral | disagree | Strongly disagree |
| No. of students  |                |       |         |          |                   |
| 5. Result was improved after taking private tuition                  |                |       |         |          |                   |
|  | Strongly agree | agree | neutral | disagree | Strongly disagree |

|   |                |       |         |          |                   |
|---|----------------|-------|---------|----------|-------------------|
| No. of students   |                |       |         |          |                   |
| 6. Always can ask my problems to private tutor                              |                |       |         |          |                   |
|   | Strongly agree | agree | neutral | disagree | Strongly disagree |
| No. of students   |                |       |         |          |                   |
| 7. Students goes to private tuition because all friends go to private tutor |                |       |         |          |                   |
|   | Strongly agree | agree | neutral | disagree | Strongly disagree |
| No. of students   |                |       |         |          |                   |

8. What can be the major reason behind the involvement of students in private tutoring?

.....  
 .....

9. Were you involved in any tuition classes before? And what about now?

.....  
 .....

10. What is your result percentage(or grade) in 1<sup>st</sup> semester of masters degree ?

.....

11. In which academic system did you accomplish your Bachelor degree?

(i) Annual System (ii) Semester System

12. What was your result percentage in Bachelor 1<sup>st</sup> Year ?

.....

| Private Tutoring Group |                |                    | Non Private tutoring Group |                 |                     |
|------------------------|----------------|--------------------|----------------------------|-----------------|---------------------|
| S.N.                   | X              | X <sup>2</sup>     | S.N.                       | Y               | Y <sup>2</sup>      |
| 1                      | 72             | 5184               | 1                          | 75              | 5625                |
| 2                      | 75             | 5625               | 2                          | 72              | 5184                |
| 3                      | 73             | 5329               | 3                          | 80              | 6400                |
| 4                      | 77             | 5929               | 4                          | 68              | 4624                |
| 5                      | 68             | 4624               | 5                          | 75              | 5625                |
| 6                      | 70             | 4900               | 6                          | 72              | 5184                |
| 7                      | 74             | 5476               | 7                          | 70              | 4900                |
| 8                      | 71             | 5041               | 8                          | 76              | 5776                |
| 9                      | 75             | 5625               | 9                          | 75              | 5625                |
| 10                     | 65             | 4225               | 10                         | 86              | 7396                |
| 11                     | 70             | 4900               | 11                         | 82              | 6724                |
| 12                     | 66             | 4356               | 12                         | 78              | 6084                |
|                        | $\sum X = 856$ | $\sum X^2 = 61214$ | 13                         | 65              | 4225                |
|                        |                |                    | 14                         | 72              | 5184                |
|                        |                |                    | 15                         | 75              | 5625                |
|                        |                |                    | 16                         | 72              | 5184                |
|                        |                |                    | 17                         | 78              | 6084                |
|                        |                |                    | 18                         | 75              | 5625                |
|                        |                |                    |                            | $\sum Y = 1346$ | $\sum Y^2 = 101074$ |

$$\bar{X} = \frac{\sum X}{n_1} = \frac{856}{12} = 71.33$$

$$\bar{Y} = \frac{\sum Y}{n_2} = \frac{1346}{18} = 74.78$$

$$S_1 = 3.72$$

$$S_2 = 4.99$$

$$S_p = \sqrt{\frac{(n_1-1)S_1^2 + (n_2-1)S_2^2}{n_1+n_2-2}} = \sqrt{\frac{(12-1)(3.72)^2 + (18-1)(4.99)^2}{12+18-2}} = 4.53$$

$$t\text{-value} = \frac{(\bar{X}-\bar{Y}) - d_0}{S_p \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} = \frac{(71.33-74.78) - 0}{4.53 \sqrt{\frac{1}{12} + \frac{1}{18}}} = -2.042,$$

$$t_{0.025,28} = 2.048$$

| B.Ed. 1 <sup>st</sup> Year Percentage(Annual) |                |                    | M. Ed. 1 <sup>st</sup> Sem. Percentage(Semester) |                 |                    |
|---|----------------|--------------------|--|-----------------|--------------------|
| S.N.  | X              | X <sup>2</sup>     | S.N.   | Y               | Y <sup>2</sup>     |
| 1   | 58             | 3364               | 1  | 74              | 5476               |
| 2   | 61             | 3721               | 2  | 75              | 5625               |
| 3   | 55             | 3025               | 3  | 72              | 5184               |
| 4   | 51             | 2601               | 4  | 68              | 4624               |
| 5   | 64             | 4096               | 5  | 76              | 5776               |
| 6   | 56             | 3136               | 6  | 72              | 5184               |
| 7   | 49             | 2401               | 7  | 65              | 4225               |
| 8   | 52             | 2704               | 8  | 75              | 5625               |
| 9   | 57             | 3249               | 9  | 75              | 5625               |
| 10  | 66             | 4356               | 10   | 84              | 7056               |
| 11  | 61             | 3721               | 11   | 70              | 4900               |
| 12  | 63             | 3969               | 12   | 72              | 5184               |
| 13  | 56             | 3136               | 13   | 70              | 4900               |
| 14  | 56             | 3136               | 14   | 60              | 3600               |
| 15  | 58             | 3364               | 15   | 65              | 4225               |
|   | $\sum X = 863$ | $\sum X^2 = 49979$ |  | $\sum Y = 1073$ | $\sum Y^2 = 77209$ |

$\bar{X}$

$$\bar{X} = \frac{\sum X}{n_1} = \frac{863}{15} = 57.53$$

$$\bar{Y} = \frac{\sum Y}{n_2} = \frac{1073}{15} = 71.53$$

$$S_1 = 4.84$$

$$S_2 = 5.69$$

$$S_p = \sqrt{\frac{(n_1-1)S_1^2 + (n_2-1)S_2^2}{n_1+n_2-2}} = \sqrt{\frac{(15-1)(4.84)^2 + (15-1)(5.69)^2}{15+15-2}} = 5.28$$

$$t\text{-value} = \frac{(\bar{X}-\bar{Y}) - d_0}{S_p \sqrt{\frac{1}{n_1} + \frac{1}{n_2}}} = \frac{(57.53-71.53)-0}{5.28 \sqrt{\frac{1}{15} + \frac{1}{15}}} = -7.267$$

$$t_{0.025,28} = 2.048$$

Type equation here.



APPENDIX 'C'

Photos of Private Tutoring and Private Tutoring centre



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