



# A STUDY ON PROBLEMS FACED BY THE STUDENTS ON LEARNING STATISTICS IN HIGHER SECONDARY SCHOOL AT ANAND

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## Abstract

It is the rapid changes in the education system and teaching methods that affect students. This situation requires students to learn more effectively and learn more independently (Winters, Greene, & Costich, 2008). To achieve this goal, students need to be trained to improve their skills to select the most appropriate learning strategy (Azevedo and Cornley, 2004). If this is not done correctly, it will affect students' motivation to learn and may eventually cause them to lose interest in the subjects they are learning. The motivation of students to be open-minded is also an important aspect in statistics teaching. Therefore, motivation is essential to successfully master the challenges of the learning environment. Could behaviors important for academic motivation be key to students' ability to complete difficult tasks and remain in difficult situations for extended periods of time? The ability to face the challenges of everyday school life. The purpose of this article is to highlight the actual statistical problems faced by the students of Secondary School, Anand Town, so that the students' problems can be solved systematically for the benefit of the teacher, students and parents. This study provides a logical explanation to identify the real problems and challenges faced by students related to learning statistics and how teachers and parents have a great impact on a child's learning. Keywords: statistics, high school, student, teacher.

**Keywords:** statistics, Secondary School, Students, Teachers.

## INTRODUCTION

Student academic performance is an important issue in upper secondary education, and monitoring student performance is also important in many ways for schools, their teachers and students, and can be effective in designing curriculum-related policies for student intake and changes in teaching style be. Teaching and learning statistics, like any other subject, requires effective communication between teacher and student. Statistics has always received particular attention in schools because the subject is naturally linked to many

other areas and disciplines. In addition, statistics often focus on student achievement, which is considered a key global issue in many countries. Self-regulation of learning is linked to 21st century learning skills, so students who are not regulated will have difficulty overcoming any obstacles or challenges they encounter while learning. However, most Anand High School students still consider this subject as one of the most difficult core subjects. **PROBLEM DESCRIPTION:** This study is titled “Issues faced by students in learning statistics in Anand Higher Secondary School”.

### **STATEMENT OF THE PROBLEM:**

The present study is entitled as “A Study On Problems Faced By The Students On Learning Statistics In Higher Secondary School at Anand”

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### **Operational Definition Of The Terms:**

Operational definitions for the present study is given below –

**Statistics Problem:-** In this study, the problem may come from students, teachers and parents. The student's problem is lack of interest, sleepiness and boredom, lack of concentration, forgetfulness, inattention, laziness and poor time management. Students' problems with teachers include scolding students, inconsistent and boring teachers, language barriers, fast-paced teaching, and poor explanation of the topic. The problem between students and their parents is often related to a lack of financial support and high expectations.

### **Learning:-**

In the present study ‘learning’, means students of class XI gaining knowledge, skill and behavioral changes in statistics through the learning.

### **Students:**

In the present study, students refer to students studying class XI and XII at higher secondary school.

### **OBJECTIVES OF THE STUDY:-**

1. To identify the main problem of the students learning statistics subject in Higher Secondary School in Anand.
2. To understand which characters of the students hinders the learning of statistics the most.
3. To investigate the influence of a teacher on a students in learning statistics
4. To compare parental participation and support towards the students in learning of statistics subject in Higher Secondary School in Anand in relation to their educational level.

### **HYPOTHESIS OF THE STUDY :-**

1. There exists a different self-regulation factor that hinders the learning of statistics among the students in Higher Secondary school in Anand in relation to their gender.
2. There exists significant difference on parental support and expectations towards the students learning statistics in Higher Secondary School in Anand in relation to their educational level.

### **DELIMITATION OF THE STUDY:**

Due to time limitation, the present study is confined to two (2) higher secondary schools in Anand city only.

## REVIEW OF RELATED LITERATURE

Singh and Srivastava (1983): investigated the impact of parents' literacy on the academic achievement on a sample of 85 first grade and 80 fifth grade students of Punjab in India. Students' scores on an achievement test were taken as measures of academic achievement of the students. The findings indicated that parent's literacy had a positive relationship with the younger students' academic achievement.

**Dickson, Brown and Gibson** (1984) assert that many specialized terms have an essential and rightful place in statistics and it is necessary that they are incorporated into the learning of the subject.

**Tui, (1987), Yee, (1987):** Study report the psychological aspect of female students with special reference to statistics subject has been matter of investigation in the past reporting that high statistics anxiety is associated with low statistics achievement. Teacher's quality supported by training and experience plays important role in success of education.

## METHODOLOGY OF THE STUDY

**Method of Study:** Descriptive method of research was adopted in the present study.

**Population of the study:** The population includes all the commerce students making statistics as a core subject in higher secondary schools in Anand.

**Sample of the study:** The sample consisted of two Higher Secondary Schools in Anand – Anand High School, Anand and D.N.Patel high school, Anand which had around 200 students taking statistics subject. Stratified random sampling method was employed. 100 students were taken from each of the schools.

### Tools and techniques used for data collection:

Close-ended Questionnaire were used for data collection.

### Procedures of data collection:

The investigator took permission from the Principal of both Higher Secondary Schools. The data was collected under the peaceful classroom situation. Questionnaires were explained before distribution among the students and the same was collected after the students responded so that it would be analyzed accordingly.

### Procedures of data analysis:

The investigator used appropriate Statistical techniques for present study. The data collected for the study was examined carefully. Data collected was tabulated taking overall frequency and according to gender too. Figures and tables were drawn for better understanding.

## MAJOR FINDINGS:

The major findings of the present study in relation to the objectives of the study are as given as follows:

1. In relation to objective No. 1: to identify the main problem of the students learning statistics subject in Higher Secondary School in Anand.
  - i) It is found out that majority of the students are just lazy to do statistics exercises/task. Students do not revise their lessons regularly which lead to having problems in learning statistics.
  - ii) There are many students who perceived statistics as too difficult even before attempting first. This means that many students even before they started studying, they already made up their mind about

the subject and this made them eager to concentrate and lose their interest in the subject at an early stage.

- iii) The students also have difficulty in the nature of statistics as majority of them finds too many formulas and topics to cover hinder their learning statistics.
  - 2. In relation to objective No.2: To understand which characters of the students hinders the learning of statistics the most.
    - i) In the present study, the students find difficulty in doing statistics without the help of others. There cannot be friends or teacher to help them all the time so majority of the students has problems in learning statistics.
    - ii) It has also been found that students have assessment pressure especially during year end examination.
  - 3. In relation to objective No.3: To investigate the influence of a teacher on a students in learning statistics.
    - i) In the present study, teachers were found to be too serious while teaching and very fierce showing even a statistics. Teacher need to crack jokes and be funny for the students to be interested in the said subject.
    - ii) In the present study, it has been found that teachers do not explain clearly the difficult questions which hamper the students in their learning. So the teachers need to take more time and repeat their explanation especially on difficult questions.
  - 4. In relation to objective No.5: To compare parental participation and support towards the students in learning of statistics subject in Higher Secondary School in Anand in relation to their educational level.
    - i) The students in higher secondary school need extra knowledge in every subject as this stage is an important ladder for their future. Our present studies show many parents/family do not give their children financial support to buy reference book.
    - ii) It was found that many students were not given enough time to study statistics which can hinder their learning to a great extend as topic in statistics in higher secondary school is very vast.

## DISCUSSION

Studying and learning statistics help a child to learn and think creatively and critically. Science, technology and engineering are very much a necessity in this modern world which cannot thrive without having a solid statistics foundation. Students with continuously low performance in statistics may eventually lose their interest and refuse to learn further (Schraw et al. 2001). This is a severe problem. Negative attitude towards statistics seems to be a source of challenges in learning statistics. When students have such attitude towards statistics, they will start perceiving statistics as a very hard subject and very confusing to learn, they will quickly lose their interest and motivation to learn this subject. This finding is aligned with the study conducted by Gomez-Chacon (2000) which found that the emergence of negative attitudes and behaviors towards statistics are the factors that contribute to the failure in statistics. In the aspects of teacher, teachers behaviors, practices and characteristics can be the main factors that obstruct the learning of statistics and lose their motivation to study the subject. Teacher competencies relate to the quality of statistics learning and students achievement. Many students feel scared and are unwilling to learn when the teacher is too fierce and have unpleasant characteristics. As a result, many students are afraid to ask questions and have problems in learning statistics. While Blomeke and Delaney(2012) states that teachers competency consist of cognitive abilities, professional knowledge and affective motivational characteristics: professional beliefs ,motivation and self-regulation. Additionally, low self-regulation skills in dealing with the challenges mentioned by the students faced difficulties in regulating their learning

(Perry, Phillips & Dowler, 2004; Winne, 2005). The learning of statistics is also greatly influenced by parents and family as indicated by the findings of this study. Families often encounter problem-solving situations that require the instantiation of considerable mathematical knowledge and practice (Goldman & Booker, 2009). Research on statistics in the home consistently shows that families often draw on distinctive funds of knowledge that include an array of information, skills, and strategies that can be qualitatively different to, but equally effective as, the mathematical knowledge that children are taught in school ( Baker, Street & Tomlin, 2003; Gonzalez, Moll & Amanti, 2005). There is no doubt that parents or teachers set certain expectations on students' statistics achievement to motivate their children to learn statistics. But the finding of this study indicated high expectation by the parents and family create problems in learning statistics. It should also be noticed that too high expectations will lead to fear and avoidance from statistics which indicated that the expectation contributes to negative self-esteem of students ( Arem, 2003). Assessment in statistics can also make the goals for learning real to students and indicate to students what to learn. Today a wide range of different assessment formats and purposes exists. Throughout the world, various forms of assessment are employed to elicit information that can be used to inform decisions about statistics education at the individual, institutional, and national levels. Many scholars have claimed that assessment should be used primarily to improve learning (Black and William 2012: Hattie and Timperley 2007; niss 1993 : van den Heuvel- Panhuizen and Becker 2003). But assessment pressure in statistics has created problems in students learning as found in the present study. Moreover, lack of skills in understanding mathematical symbols, formulas, concepts and representations are also the problems experienced by students in mastering statistics subject. This situation consequently leads students to experience anxiety (Ho& Hyun, 2011). Negative feelings and stressful situations can also interfere to different degrees with success in mathematical tasks (Ashcraft and Kirk,2001; Maloney and Beilock, 2012; Vukovic et al., 2013).

## CONCLUSION

Based on the findings gathered from the study, the following conclusion can be made that laziness and pressure are the main problems faced by the students in learning statistics in higher secondary school in Anand. Teachers and parents/family needs to encourage and motivate the students to work harder. Pressure can come from teacher, school or parents/family members who have high expectations for students to excel in statistics. Additionally, examination pressure can also contribute to students' losing their interest in studying statistics. Therefore, all members including the student's needs to have a good combination and mechanism to control and minimize the pressure. Parents and teachers should not put too much emphasis on getting excellent results in examination such that it makes the students experiencing worry and fear. However, it should be done to some extent by using the fear appeal elements in a better way. The use of fear appeal elements on student evaluation is believed can motivate the students to learn harder especially for less hardworking students. This can be done when teachers or parents executing it together with the explanation on the significance of evaluation for the students' future education and career prospect (Putwain & Roberts, 2009). In addition, the teachers can conduct essay and fun quiz with prizes which can boost students' motivation to study statistics. Teachers need to make sure that their students see the value of each mathematical task or activity assigned to them.

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