

“Investigating Factors That Influence On Students Learning Of Mathematics At Catholic Board Of Education Secondary Level Schools In Saddar Karachi”

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Abstract

This study examined students’ perception of factors influencing teaching and learning of mathematics in Catholic Board of Education secondary schools in Saddar Karachi. The objectives of the study were to determine the extent to which students perceived: method of teaching, instructional materials and attitude of students influence the teaching and learning of mathematics in Catholic Board of Education secondary schools in Saddar Karachi. The study used a sample of 150 males and 150 female students from five selected Catholic Board of Education secondary schools in Saddar Karachi. The instrument used for data collection was a adapted questionnaire measuring students' perception of factors influencing learning of mathematics. To analyze the data collected, the research questions were answered using descriptive statistics such as simple frequency and mean. The results indicated that teaching method, and instructional materials were highly perceived by students as important determinants of their success in learning. Also, students’ attitude towards mathematics learning was an important factor in the performance of students. Based on the results of this study, it was recommended that: There is need to improve the quality of mathematics teachers. The Catholic Board of Education Karachi should embark on serious in-service training of mathematics teachers to equip them with skills for teaching mathematics in secondary schools. Also there is need for mathematics teachers to try and understand the perceptions of their students and try to adopt instructional strategies that whatever student perceived as easy would really turn out to be easy and whatever is difficult may be properly addressed to motivate and encourage students to see the need in learning mathematics and improve their performance.

Introduction

Students’ judge their teachers by the knowledge of subject content and by the teachers’ teaching skills or methods that they use. It is then that the teachers gain admiration and respect from his or her students. The success or failure in a subject depends on the way the students’ take interest or liking in that subject. When considering Mathematics Education, Brown et al. (2008) observed that the majority of students is of the opinion that mathematics is challenging, with

students opting out of it whenever possible. In a country like Scotland, mathematics is a very popular subject not only in school but in college as well as in the universities (the Scottish Qualifications Authority, undated). This clearly indicates that, while mathematics is observed as challenging and unattractive in some countries, but not so in many other countries. It is very unfortunate that there is a lack of research when it comes to observing the difference in interest to the subject of Mathematics based on different

countries. The success in mathematic test is dependent on memorizing skill and the broad picture applied to all other subjects (Almadani et al. 2012). The fact remains that rote memory does apply in other subject areas, whereas in mathematics it was the methodology or procedure that was being memorized.

For most students, mathematics is a difficult subject. This is perhaps due to their bad experience with unqualified and inexperienced mathematics teachers. The general impression given is that mathematics is not meant for all. Some students are born to do mathematics unlike others. This attitude creates fear for the subject of Math in other words “math phobia” which leads to low achievement in Math.

It was considered in length that the study of mathematics and the student’s characteristics is important to understand the various types of mathematics problems solved in (Onwumere & Reid, 2009). The math subject is an essential part of the curricula in most of the countries around the globe. In our country, Pakistan; mathematics is considered as the queen of all sciences and a key subject in almost all fields of learning. The mathematic subject is not as popularize and it avoided by many learners. This is when the learner faces more problems, with many opting out if and when students are allowed (Khan, 2012). It is not very well taught in Pakistan. On the other hand, instructor may just teach what is necessary and important for them. Mostly, teachers are enforced to follow the method five in the textbooks (Ali, 2011). According to Mohammad(2002) Amir Ali and Halai (2010) that method and procedure of solving mathematical problems are memorized, practiced and then tested in summative assessment when conducting the examinations formally credit is specified for the right procedure leading to the correct answer.

This research is based on a study where students investigate the teachers’ methodology of teaching

mathematics, the instructional resources used as well as the attitude of students to the subject as variables that influence the learning in mathematics at the secondary level in private schools in the Karachi district.

Objective of the Study

The objective of the study will be determined according to the student’s understandings:

- i. To, determine the influence of instructional materials on students’ learning of mathematics in the Catholic Board of Education schools at the secondary level, Saddar Karachi.
- ii. To, investigate the influence of the teaching methods that are used on students’ learning mathematics in the Catholic Board of Education schools at the secondary level Saddar Karachi.
- iii. To, determine the influence of students’ attitude of learning mathematics in Catholic Board of Education schools at secondary level Saddar Karachi.

Research Questions

The following research questions are included in this study:

- i. To which extent Instructional materials influence on students’ learning of mathematics in Catholic Board of Education schools at secondary level, Saddar Karachi?
- ii. How the teaching methods influence the students’ learning mathematics in the Catholic Board of Education schools at the secondary level, Saddar Karachi??
- iii. What is the influence of students’ attitude on learning mathematics in the Catholic Board of Education schools at the secondary level, Saddar Karachi?

LITERATURE REVIEW

The manners in which students' influence on their subjects or teachers decide achievement or disappointment in the same subject. A few learners nowadays discover mathematics while off-limit region in view of not the positive impressions passed along to them through the previous year groups who had terrible involvement in unprofessional math teachers who still discourage students in the school that math is the most difficult, it isn't intended for everyone, also not every person clears that subject and it is intended for students with uncommon ability (Audu, 1995).

As per Maslow, instructors should do all that is conceivable to assist students with fulfilling their lack on the grounds that an inward inspiration for information won't create till the fundamental desires are fulfilled. It is seen that educators are not generally ready to intercede within life of learners towards the degree important to satisfy inadequacy desires, however recommended to the educators rather the situation to give homeroom helpful for realizing and that can satisfy insufficiency desires, particularly in Math, if a subject is not cleared during credits, then students cannot be allowed in the tertiary foundation. It was thus presumed that basically parents as well as teachers; however more could be expected ought to help as well as energize their kids into the addressing inadequacy desires. Therefore, it can improve learning and instructing.

Student impact by Mathematics Instructional Materials

Adeluku (2012) stated that there is great impact of mathematics instructional material on students learning and teachers teaching styles because most the teachers do not prepare themselves. Two gathering post-test and pre-test semi trial configuration received for examination. An investigation uncovered that educated students by instructional resources or materials executed fundamentally in a way that is better than those educated students without instructional

possessions stuff. Furthermore, the use of instructional resources for improved students' comprehension of ideas, prompted high scholarly accomplishments.

Student impact by Mathematics Teaching Method

The impact of a teacher's training strategy on students and how it affects on the learning of students', (Ampadu, 2012). The consequences of investigation uncovered that activity of teachers as well as functional sway emphatically or adversely on the learning experiences of students majority of the respondents detailed those learning students encounter is a bigger degree constrained through teachers. An examination gave reasons of students for helpless scholastic execution in Ogun State auxiliary schools, Nigeria (Asikhia, 2010). Discoveries demonstrated that teachers' capability and students' current circumstance didn't impact students' exhibition yet teachers' technique for showing impact execution, likewise, a portion of the components of helpless scholarly accomplishment distinguished were persuasive direction, self – regard, enthusiastic issue, study propensities, teacher conference and poor relationship.

Influence of students' attitude towards mathematics learning.

Various literatures has been reviewed on students' attitudes towards mathematics' learning. One of the most important studies by Kibrislioglu (2016) describes the attitude towards mathematics as simply preferring or not preferring the subject. Teachers' always try to engage the students by providing effective material so that they can take keen interest in the subject mathematics. Furthermore, it is also found that students have simply good or bad experience in mathematics which shows the interest of students. Students believe that mathematics is good subject if we will learn it

will be useful or useless of us. A straightforward definition provides a more understanding that Students attitude towards mathematics is a natural and emotional disposition. Moreover, it can be positive or negative because majority of students face problem in topics like geometry, algebra and matrix (Adnan et al., 2010). They define the attitude towards mathematics as an emotional disposition; it can be a positive or a negative disposition but we must take in consideration. When defining the attitude towards mathematics, we must take both aspect emotions beliefs into consideration.

The literature reveals that the students' attitude is affected by various factors. It includes; the school, peers, students, home environment and society (Yang, 2013). Researchers; Yılmaz, Altun, and Olkun (2010) have discovered factors such as connecting mathematics with real life, using instructional materials, a teachers' personality and content knowledge, ineffective teaching methods, instructional practices contribute to a lack of commitment by students' and teachers' classroom management. Additional factors are teachers' emotional and impactful support (Blazar & Kraft, 2017). Students always try to find teachers easy way of teaching for the subject mathematics because it increases their interest and emotional feelings (Hoy et al., 2012). In addition, teaching resources, subjects' content development and teachers' methodology of teaching have substitute role in the mathematics (Joseph, 2013; Enu et al., 2015). This is in line with the findings of Simmers (2011) that revealed teachers' failure and ability to cash in his subjects create troubles for students because mathematics needs conceptual learning.

According to Yılmaz et al. (2010) revealed that students competency, course enjoyment and teachers teachings styles are the essential elements that decide whether students like mathematics or dislike it. Moreover, it also found that when students find themselves to

comprehend the topic and teachers distractions during the teaching mathematics then they receive weak results and lose their inerties and contribute bad attitudes towards mathematics.

Reviewed studies show various factors that influence students into positive or negative attitudes. Various factors have been found that depends on students learning such as classroom environment, peers relationship, and school culture. Furthermore, study uses a theoretical establishment to make understanding that influence on students' attitudes towards mathematics. The current study utilizes theoretical foundations to build an understanding of the factors that influence the students' attitude towards and away from learning mathematics. It does so, with the, experiential research revealed that there are different factors that influence on students learning attitudes in mathematics.

Research Methodology

The research was quantitative in nature. The information was collected and analyzed using descriptive insights of frequency, mean and standard deviation. Standard deviation and mean was used to discover degrees to which the accompanying factors; student attitude towards the subject, mathematics teachers' methodology and the mathematics instructional materials impact the learning of mathematics in Catholic Board of Education secondary schools in Saddar Karachi. Mean value as well as frequencies were used to represent the normal curve's graph to find out the values of responses of every factor that effect the student learning mathematics in the Catholic Board of Education secondary level schools of Saddar Karachi.

Population

According to Creswell (2005) that a population is a set of people that has one or more than one same characteristic and they are beneficiary to the researcher, too. The population of this study was

to all students of Mathematics of catholic board of education secondary level schools in Saddar Karachi. Therefore, all students both male and female of catholic board of education secondary level schools in Saddar Karachi were included in population.

Sampling technique

Simple random sampling technique was used in this research study. Researcher recruited the students randomly. Sample is a small set of participants that selected from the whole population in which a researcher is concerned to get the information for findings as to reach at the conclusion (Kothari, 2004). Best and Kahn (2006) defines that researcher helped by the participants to generalize the results as well as their plan. The sample size was consisted for this study of one hundred and fifty (150) mathematics students of catholic board of education secondary level schools in Saddar Karachi for the purpose of to get the findings of this research and they were selected randomly. It would be virtually impossible to collecting data, evaluate each element or test in investigation of research involving thousands or many hundreds of elements.

The sample size of the study consists of one hundred and fifty (150) students. Both male and female students were included in this study.

Procedure for Data Collection

The questionnaire is the main instrument used for data collection. The questionnaire had been administered among students with the assistance of teachers in secondary schools. Researcher informed the students that no one will share their opinions with others. They were told to provide their response to the items truly and honestly. Researcher then took the questionnaire from respondents after completion for analysis the data.

Method of Data Analysis

The collected data was explored using standard deviation, frequency, and mean. Standard deviation and mean was used to find the degrees to which the accompanying factors; Math teacher's teaching method, Math instructional materials and students attitude towards math teaching, and learning in Catholic Board of Education secondary level schools in Saddar Karachi. The mean qualities were used, to draw the chart of the ordinary bend to decide the estimation of influence to every factor under the normal bend.

Research Ethics

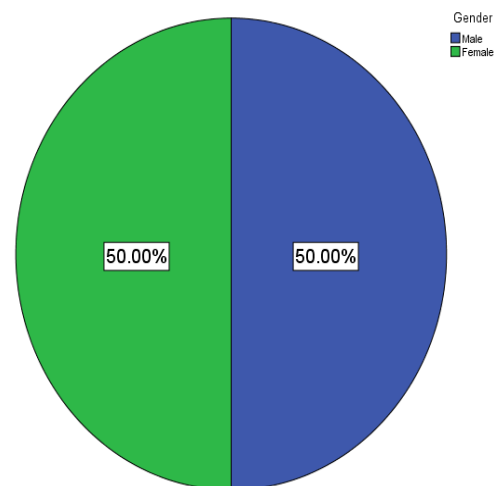
Researcher followed the ethical consideration. Research data was confidential and collected data was used only for research purpose. Researcher did not show the name of participants and also did not share the data with anyone. Participants were free to withdraw from this study at any time. Consent was taken from the higher authorities.

Data Analysis, Findings and Discussion

Background Information of Respondents

Characteristics of Participants

Respondents' Gender Participants



This figure shows that 50% of participants are male and 50% are female in this study. This research includes both genders male and female participation. Therefore, both the genders male and female participated equally in this study. There is not any gender discrimination in the schools. So, there is not any gender dominated on others in the Catholic Board of education, Saddar Karachi

Findings and Interpretations

Research Question I:

To what extent instructional materials influence on the learning of Math in the Catholic board of education schools at the secondary level in Saddar Karachi?

Table 1: Students' Perception of the Instructional Materials of Mathematics Teaching and Learning

	N	Mean	SD	Std. Error	Variance	Range
Students' Perception	300	2.3027	.66231	.03824	.439	3.00

In this study table 1 shows the total number of participants, mean, standard deviation, standard deviation of mean error, variance and range. As above table presents that the total number of participants is 300, mean value is 2.30, standard deviation is 0.66, standard deviation of mean error value is 0.04, variance is 0.44 and range is

3.00. Moreover, the value of standard deviation and mean of students' perception of math instructional material as a variable that can influence on learning as well as teaching in mathematics in the Catholic board of education schools at the secondary level in Saddar Karachi.

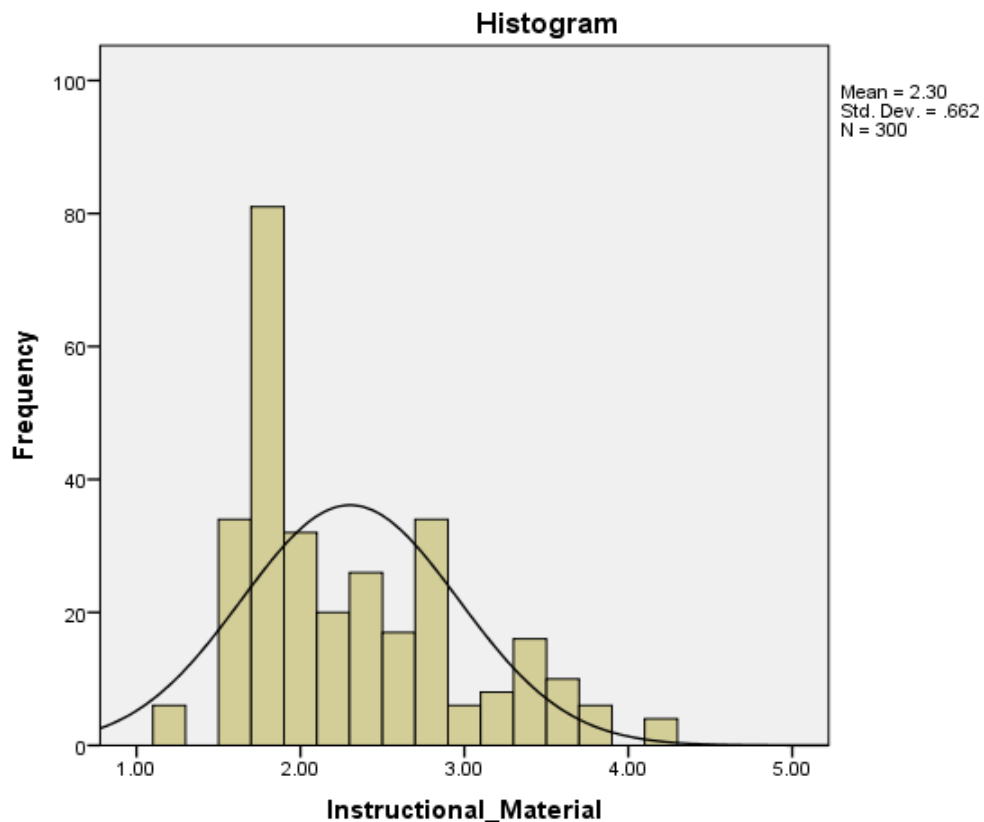


Figure 1: Normal Curve on responses of students' perception regarding instructional materials

The result in Figure 1 shows that the perception of students regarding the instructional materials just like usage of those instructional materials which are tangible, projectors for mathematical videos, audio visual aids and by usage of electronic devices such as computers for visual aids enhance teaching and learning process of mathematics and it also reduces the difficulties for the students. These instructional materials help teachers to improve their teaching and students increase their mathematical skills. In fig. 1, the normal curve states that distribution of responses of students

regarding instructional material was truly pointed in mathematics learning of classroom. The normality distribution curve has $N= 300$, $Mean= 3.40$ as well as $SD= 0.662$ for perception of students on influence of instructional materials in mathematics learning.

Research Question 2:

How teaching methods influence on students' learning in the Catholic board of education schools at the secondary level in Saddar Karachi?

Table 2: Students' Perception of the Methodology of Mathematics Teaching and Learning

	N	Mean	SD	Std. Error	Variance	Range
Students' Perception	300	4.4473	.57880	.03342	.335	2.60

In this study table 2 shows the total number of participants, mean, standard deviation, standard deviation of mean error, variance and range. As the above table presents the total number of participants is 300, mean value is 4.45, standard deviation is 0.579, standard deviation of mean error value is 0.03, variance is 0.34 and range is

2.60. Moreover, the value of standard deviation and mean of students' perception of math teaching methods as a variable that can influence on learning as well as teaching in mathematics in the Catholic board of education schools at the secondary level in Saddar Karachi.

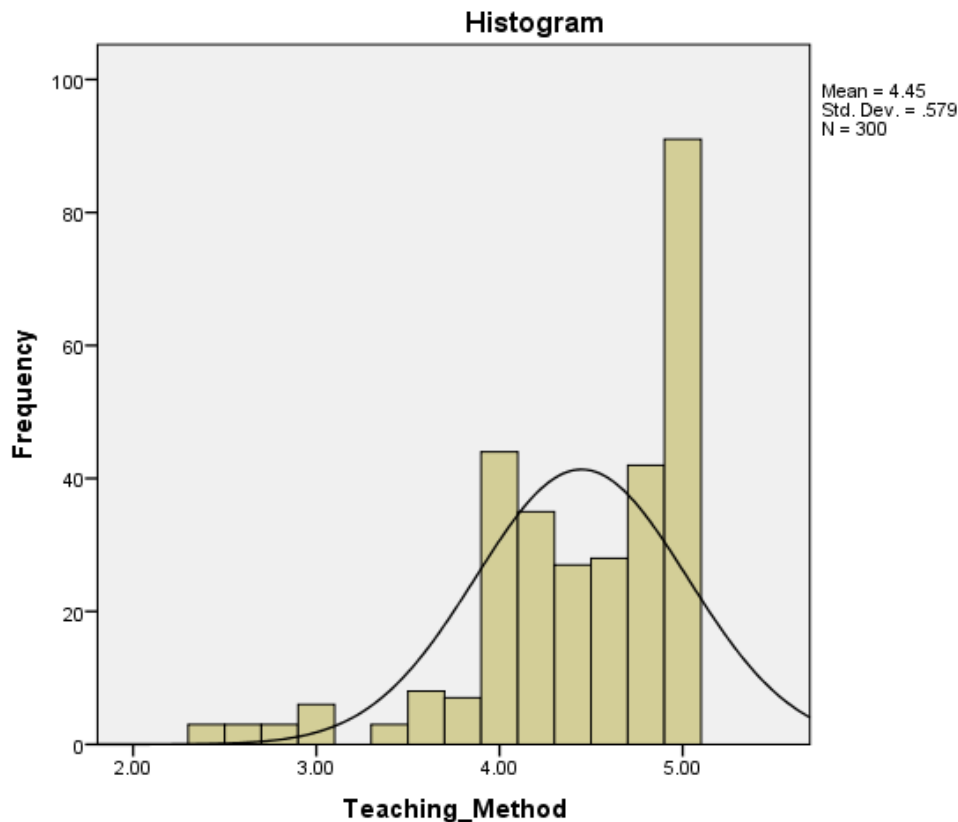


Figure 2:

Normal Curve on responses of students' perception about teaching methods

The result in Figure 2 revealed that the perception of students regarding teaching methods as the variable that influences the teaching and learning process in mathematics. The result of this study regarding perception of students' response on the teaching and learning methods in mathematics subject reveals that the discussion method, project strategy, problem solving methods and questioning method of teaching all converged on

the opinion of respondents that the teaching methodology contributes to a successful math learning and teaching encounter, according to the study. In figure 2, it displays by normal curve distribution the response of students; of what they consider to be effective and successful in learning and teaching methods. The normality distribution has $N = 300$, $Mean = 4.45$ and $SD = 0.579$ regarding the student's perception on the influence of teaching methods in mathematics learning.

Research Question 3:

What is the influence of students' attitude on learning mathematics in the Catholic board of education schools at the secondary level in Saddar Karachi?

Table 3: Students' Perception of the Attitude toward Mathematics Teaching and learning

	N	Mean	SD	Std. Error	Variance	Range
Students' Perception	300	3.5073	.49837	.02877	.248	3.60

In this study table 3 shows the total number of participants, mean, standard deviation, standard deviation of mean error, variance and range. As the table below represents the total number of participants is 300, mean value is 3.51, standard deviation is 0.498, standard deviation of mean error value is 0.03, variance is 0.25 and range is

3.60. Moreover, the value of standard deviation and mean of students' perception of math attitude as a variable that can influence on learning as well as teaching in mathematics in the Catholic board of education schools at the secondary level in Saddar Karachi.

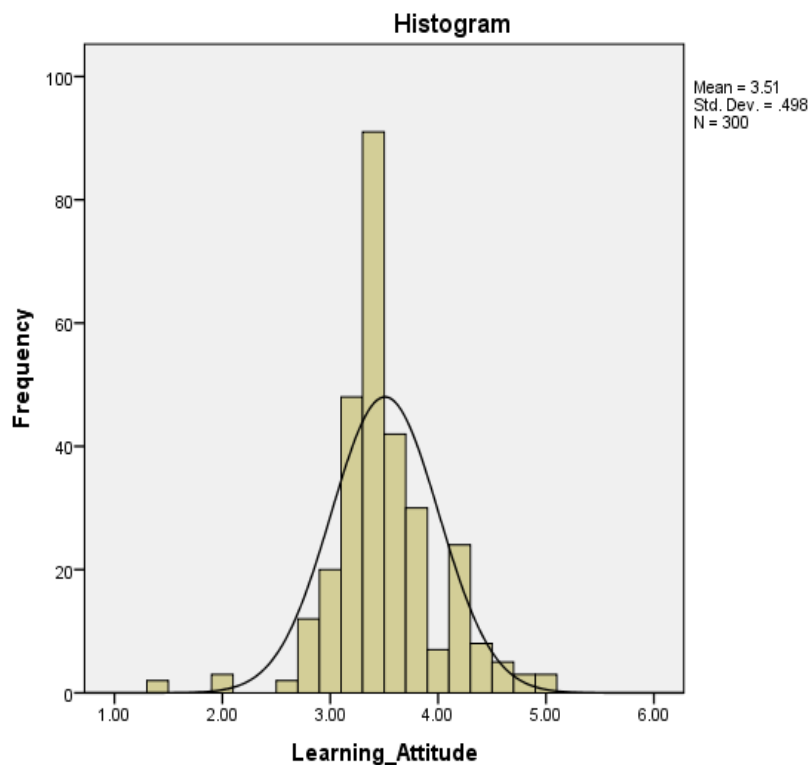


Figure 3: Normal Curve on response of students' perception on learning attitudes

The result in Figure 3 reveals that the perception of students regarding the learning attitudes as a

variable that has an influence on the teaching and learning process of mathematics. According to

the findings, many students assumed that mathematics subject teaching as well as learning was only for a selected group of students. Moreover, abstractions of mathematics discourage students to learn mathematics and generate misunderstandings regarding this that there is not any association with peoples' social wellbeing. Furthermore, all of the responses to perception of students regarding learning attitude as a variable influenced the delivery of mathematical material. In figure 3, it was recognized through a normal distribution curve with $N= 330$, $Mean= 3.51$ and $SD= 0.498$.

Findings Summary

The summary's findings of this research study were derived from the data analysis result:

- i. The findings show the extent to which math students recognize the instructional materials of the subject mathematics, as a variable. It is positive with a mean of 2.30 and standard deviation of 0.662 for the learners. This indicates that instructional materials of mathematics that are used are important and needed for better and effective teaching in mathematics at the secondary level.
- ii. The findings also show the extent to which students of math recognize the teaching methods of the subject mathematics as a variable. It is positive with a mean of 4.447 and standard deviation of 0.578 for the learners. This means that teaching methods of mathematics that are used in subject mathematics are relevant and needed for effective teaching in subject mathematics at secondary level.
- iii. In addition, the findings showed that the extent to which students of math recognize the learning attitudes of the subject mathematics as a variable. It is positive with a mean of 3.50 and standard deviation of 0.498 for the learners. This

verifies that instructional materials of mathematics that are used in subject mathematics are required for better and effective teaching in subject mathematics at secondary level.

Discussion of Findings

This part discusses the findings that were driven from the collected data from the participants related to research objectives and research questions. It explains the findings with the support of literature to understand the differences of current study with previous study. Most of studies have been conducted at primary and elementary level but the purpose of this study was to investigate factors influence on students learning of Mathematics in the Catholic board of education schools at the secondary level in Saddar Karachi. There are major three objectives of this study which are as below:

Instructional Material Influence on Students' Learning

The first objective of this study was to determine the influence of instructional materials on students' learning of mathematics. The findings of first objective in the current study revealed that the total number of participants were 300, mean value was 2.3027, standard deviation was 0.66231, standard deviation of mean error value was 0.03824, variance was 0.439 and range was 3.00. Moreover, the value of standard deviation and mean of students' perceptions of math instructional material as a variable that can influence on learning as well as teaching in mathematics in the Catholic board of education schools at the secondary level in Saddar Karachi. Furthermore, the findings shows that that the perceptions of students regarding the instructional materials just like usage of those instructional materials which are tangible, projectors for mathematical videos, audio visual aids and by usage of electronic devices such as computers for visual aids enhance teaching and

learning process of mathematics and it also reduces the difficulties for the students. These instructional materials help teachers to improve their teaching and students increase their mathematical skills. In fig. 1, the normal curve states that distribution of responses of students regarding instructional material was truly pointed in mathematics learning of classroom. The normality distribution curve has $N= 300$, $Mean= 3.40$ as well as $SD= 0.662$ for perception of students on influence of instructional materials in mathematics learning.

Moreover, the data analysis found that in the Catholic Board of Education schools of secondary level in Saddar Karachi, there were a few mathematics teaching and learning tools such as geometric models, and laboratories. As studied by Enu et al. (2015) revealed that teaching resources such as geometrical sets, mathematical models, and are crucial in enabling students' grasp of mathematical concepts.

Adeluku (2012) stated that there is great impact of mathematics instructional material on students learning and teachers teaching styles but most the teachers do not prepare themselves. Two gathering post-test and pre-test semi trial configuration received for examination. An investigation uncovered that educated students by instructional resources or materials executed fundamentally in a way that is better than those educated students without instructional possessions stuff. Furthermore, the use of instructional resources for improved students' comprehension of ideas, prompted high scholarly accomplishments.

The impact of utilizing advanced and promoted lobbied instructional resources show an insightful achievement of the secondary level schools' math students' in Nigeriab (Maruff & Amos, 2011). An assessment plan was semi tested using post- test, pre-test and non-randomized benchmark gathering. Disclosures exposed that there was an imperative differentiation in the student's

achievement who demonstrated utilizing advanced instructional resources, and individuals in the customary guidance.

Teaching Method Influence on Students' Learning

The second objective of this study was to determine the influence of methods of teaching on students' learning of mathematics. The findings of second objective revealed that the total number of participants was 300, mean value was 4.4473, standard deviation is 0.57880, standard deviation of mean error value was 0.03342, variance was 0.335 and range was 2.60. Moreover, the value of standard deviation and mean of students' perceptions of math teaching methods as a variable that can influence on learning as well as teaching in mathematics in the Catholic board of education schools at the secondary level in Saddar Karachi. Moreover, the findings revealed that the perception of students regarding teaching methods as the variable that influences the teaching and learning process in mathematics. The result of this study regarding perception of students' response on the teaching and learning methods in mathematics subject reveals that the discussion method, project strategy, problem solving methods and questioning method of teaching all converged on the opinion of respondents that the teaching methodology contributes to a successful math learning and teaching encounter, according to the study. In figure 2, it displays by normal curve distribution the response of students; of what they consider to be effective and successful in learning and teaching methods. The normality distribution has $N= 300$, $Mean= 4.45$ and $SD= 0.579$ regarding the student's perception on the influence of teaching methods in mathematics learning.

The result of this research study displays the teaching methods that have major influence on the students' academic performance in the Catholic Board of Education in the secondary

level schools of Saddar Karachi. This result is in agreement with Saritas and Akdemir (2009) who supervised a study on categorizing the factors that affect the achievement of students. They discovered that appropriate instructional design and instructional strategies increased the teachers' proficiency in teaching mathematics. When making designs; expertise, attention, and encouragement were the three most influential factors that should be considered in the design decision. The result accentuates the study carried out by Umoren (2001) in a research that was based on the teaching method. Its basis was on the ability of the teacher to impart knowledge; this thus has significant dependence on the method applied during the learning process. When the method is ineffective the students' stands will not benefit from the lessons. It also elaborates Adediwura and Tayo's (2007) definition of teaching method to be patterning that is followed in the teaching/learning process either in formal or informal education, the effectiveness of the teaching method leads to the retention of learnt concept. The limit of an instructional procedure is dependent upon its efficient use. The instructor and the impression that is left on the learner will be evident in their attitude and performance. The result also brings attention to Uya (2008) who said that for teachers to ensure order and increase classroom learning, they must have the necessary pedagogical skills. These should be standardized and meticulous. They have to elaborate and make efficient use of their knowledge and instructional skills/strategies. Even if the method adopted does not fall within the mass spectrum of understanding. Esu (2003) states that teaching by its core is in need of several methods to enhance teaching and learning in the class. Developing a child's knowledge and comprehension to the utmost maximum is a thing of major respect.

Students' Attitude Influence on Mathematics Learning...

The third objective of this study was to determine the influence of students' attitudes on mathematics learning. The findings of third objective revealed that the total number of participants was 300 in this study, mean value was 3.5073, standard deviation was 0.49837, standard deviation of mean error value was 0.02877, variance was 0.248 and range was 3.60. Moreover, the value of standard deviation and mean of students' perception of math attitude as a variable that can influence on learning as well as teaching in mathematics in the Catholic board of education schools at the secondary level in Saddar Karachi. Moreover, the findings revealed that the perception of students regarding the learning attitudes as a variable that has an influence on the teaching and learning process of mathematics. According to the findings, many students assumed that mathematics subject teaching as well as learning was only for a selected group of students. Moreover, abstractions of mathematics discourage students to learn mathematics and generate misunderstandings regarding this that there is not any association with peoples' social wellbeing. Furthermore, all of the responses to perception of students regarding learning attitude as a variable influenced the delivery of mathematical material. In figure 3, it was recognized through a normal distribution curve with $N= 330$, $Mean= 3.51$ and $SD= 0.490$.

The study seeks to investigate students' attitudes towards mathematics learning. It uses a sample size of 300 students in the Catholic Board of Education at the secondary level schools in Saddar Karachi. The study is in search of reasons to contemplate why students like or dislike mathematics. The result shows that students have a positive attitude towards mathematics. It was observed that those students dislike mathematics when the teaching-learning materials and resources are scarce.

The results are indicative of a positive, but weak correlation among attitude and the mathematics grade. The results reveal that all conditions were accurately correlated with attitude, but the highest correlation occurred between its future prospect, amusement, morale and mindset. This is indicative that attitude is the major contribution and that as soon as these variables increased the students' attitudes became more positive. The response however revealed students enjoy mathematics because they had the confidence and motivation. This is in accordance with OECD (2013); Van der Bergh (2013); Zakaria and Nordin (2008) that the above mentioned factors are vital in molding the students' attitude and consequently their accomplishment in mathematics. The regression analysis of the data show that in the Catholic Board of Education schools of the secondary level in Saddar Karachi, the enjoyment of mathematics can predict the students' performance. This gives the implication that students learn better, when they find joy in lessons. Therefore, it is up to teachers to employ strategies that will make mathematics lessons more enjoyable. Ngussa and Mbuti's study (2017) show that using humor as a teaching method makes a lesson more alluring and compelling. This all contributes to better performance by students. Factors that are responsible for liking or disliking Mathematics are dependent on whether a student will find value of it in their day to day life. Students only then find mathematics fascinating and likable. They attain self-confidence in mathematics which is in accordance with Van der Bergh (2013) who discovered a major influence between the students' self-confidence and the students' ability to successfully understand and participate well in mathematics. In Syyeda's study (2016) it was observed that in regards to the negative emotions, students' only have value for mathematics if they believe it will be used in future or their present lives. It was noted that a good teacher, a good result, future career

prospects and supportive teachers, parents and peers are incredibly crucial components in liking mathematics. The result is consistent to that of Simmers (2011) and Yilmazet et al. (2010). Students expected the teachers to teach the material as clear as possible since only they were capable of making it enjoyable. They expected tolerance, and kindness. Simmers (2011), stated that a student considers a teacher excellent if they liked them, their likability has an impact on their motivation to learn. In regards to career prospect, this study relates to both liking and disliking of mathematics. Whereas in Simmers', it correlates more towards a dislike of mathematics. In this study, it was understood that students need to see a link between mathematics and different occupations to appreciate the subject. Without this link students end up disliking mathematics. In regards to good grades, Ignacio et al. (2006) discovered that achieving a high grade encourages students and improves concepts. Learners of mathematics feel complete and capable. In regards to students' in need of teacher support, Blazar and Kraft (2017) discovered that even emotional support goes a long way and is often in association with increased self-efficacy in mathematics and overall happiness in class. It was further elaborated that provision of emotional support and a comfortable, consistent and safe environment it helps in enabling students to be self-reliant, motivated and prepared to take risks. As far as self-confidence proceeds, Van der Bergh (2013) debates that a student is in possession of high confidence and is more confident. Students believe they are capable of success in mathematics and are hence more likely to overcome the fear of failing. However, simmers (2011) view has a lot more to do with persistence.

A student's character often consists of zero seriousness, fearful of mathematics, fearful of teachers' anger, and fearful of failure. This result is in accord with Yilmazet al. (2010) whose study

exposed that students' swayed away from mathematics when they were penalized for not being good at it, and even more so when they did not comprehend the topic accordingly. Regarding the perception of a teacher's characteristic, the respondents connected this with teachers' inability and inadequate teaching methods. This is also in accord with the results of Tshabalala and Ncube (2016) they observed that mathematics teachers often use methods that learners find difficult. A second factor that is relates to a teacher's inefficiency has to do with the pace of guiding and a teachers' failure to assist students with problems. These results also fall in line with Simmers (2011) who states that the speed of guidance by a teacher and the teachers'

perception of a students' capability, as well as their inability to assist with problem solving significantly affects the students' learning in a negative way.

Conclusion

The questions asked by the respondents about instructional materials that by using teaching material it is difficult to complete the whole course, Computer and teaching material are available in mathematics classroom, There is a mathematics laboratory, I make frequent use of instructional materials to motivate myself and make mathematics meaningful, Lack of proper space to demonstrate class by instructional materials.

	N	Mean	SD	Std. Error	Variance	Range
Students' Perception	300	2.3027	.66231	.03824	.439	3.00

The mean indicates that most of the responses of students are with no comments regarding instructional materials. As, mean value is 2.30 indicates that there is no comments about the influence of instructional materials that are used in mathematics.

effective teaching in mathematics at secondary level of Catholic Board of Education schools in Saddar Karachi.

According to the findings, provided instructional materials of mathematics such as projector, mathematical videos, audio visual aids, and computer for visual aids are not helping in

The questions asked by the respondents about students' influence by Mathematics teaching method about participation in classroom discussion, using problem solving method, assigning class work and homework, conceptual teaching Interaction of teacher and students.

	N	Mean	SD	Std. Error	Variance	Range
Students' Perception	300	4.4473	.57880	.03342	.335	2.60

The mean indicates that most of the responses of students are with strongly agree regarding

teaching methodologies. As, mean value is 4.45 indicates that they strongly agree with students' perception of mathematics teaching methods as a variable that can influence on learning as well as teaching in mathematics. It concluded that teaching method, project strategy, and problem solving methods and questioning method of teaching all converged on the opinion of respondents that the teaching methodology contributes to a successful math learning and teaching encounter, according to the study in the

	N	Mean	SD	Std. Error	Variance	Range
Students' Perception	300	3.5073	.49837	.02877	.248	3.60

The mean indicates that most of the responses of students agree regarding learning attitude. As, mean value is 3.51 indicates that they strongly agree with students' perception of mathematics learning attitude. In addition, according to the findings, many students assumed that mathematics subject teaching as well as learning was only for a selected group of students. Moreover, abstractions of mathematics discourage students to learn mathematics and generate misunderstandings regarding this that there is not any association with peoples' social wellbeing.

Recommendations

This study was conducted on investigating factors influence on students learning of Mathematics in Catholic Board of Education schools at secondary level Saddar Karachi. The findings of this study highly recommend:

- Policy makers should include such activities in instructional material that build students cognitive thinking skills.
- Government must arrange training for the development of teachers mathematics skills by trained teachers

Catholic board of Education schools at the secondary level in Saddar Karachi.

The questions asked by the respondents about Students' Influence by Mathematics learning attitude their boring feel on mathematics learning, knowing mathematics will help them in their career, they think that tuition is necessary to get good marks in mathematics, understanding mathematics is important to them and they wish to study mathematics because they like it.

- Institutions should provide such a encouraging environment to promote students' positive attitudes towards mathematics learning.

Limitation of the Study

This study is limited to the selected variables. This study was conducted in Catholic Board of Education schools at secondary level Saddar Karachi. Moreover, the limitation of this research was related to its sample size that is only focusing on 300. Therefore, the findings of this study may be different if carried out in another location or a broader scope.

Suggestions for Further Study

This study only focuses on Catholic Board of Education schools of secondary level in Saddar Karachi. Future studies should be carried out in other Catholic Board of Education schools for comparative purposes on the influences of principals' leadership styles on teachers' job performance. This study also suggests carrying out a study from teachers perspectives.

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