



A study on influence of additional Coaching on marks

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Abstract: Coaching Classes. The word has become a synonym with the education system in India. There is hardly any course for which extra outside coaching is not available. Who doesn't want to perform well in higher education? But the process begins in primary education. Every parent wants their children to do well in studies and get educated from the best institution. But to get into the best institution, one needs good grades and the key to good grades is ones' performance in exams. Most of the times the reason students don't perform well in exams is because they don't have proper basic understanding of the subject which begins at the primary level. And then they enroll themselves for extra coaching at the secondary & higher education level. Hence this paper focuses on finding out is there any direct correlation between a student's performance in higher education with extra coaching that they get themselves enrolled for?

For this purpose, Mathematics was taken as the base subject because that is one subject which a student has to study right from primary education till higher education. So the researcher has tried to find out how the students have performed in Mathematics in class XII. Is there any correlation between the marks obtained by the students with the coaching they receive? Does additional outside coaching help in securing more marks?

Key Words: Additional Coaching: Private coaching offered by coaching classes.

Grades: Marks obtained in the subject of Mathematics in class XII.

SSC: Secondary School Certificate (Maharashtra State Board)

ICSE: Indian Certificate of Secondary Education

CBSE: Central Board of Secondary Education

IGCSE: International General Certificate of Secondary Education

IB: International Baccalaureate

1. INTRODUCTION :

Overview of Education System in India

"Education is the most powerful weapon which you can use to change the world."

- Nelson Mandela.

Quality Concern in Education

Locating the term quality in educational discourse is now a universal concern today. "Quality is somewhat problematic: like beauty, it lies in the eyes – or rather the mind of the beholder" (Cliff. et al. (1987). Quality has been extensively defined by Dewney et al. (1994) as, "meeting, exceeding and delighting customer's needs and expectations with the recognition that these needs and desires will change over time." Its practice in the sphere of education demands that the education available to all children in different regions and sections of society has a comparable quality. J. P. Naik describes equality, quality and quantity as the elusive triangle of Indian education. Dealing with this metaphorical triangle requires a deeper theoretical understanding of quality in education than has been what available in schools today. United Nations educational, Scientific and Cultural Organization's (UNESCO) recently published global monitoring report which discusses systematic standards as the appropriate context of the quality debate (see Global Monitoring Report 2006 – Literacy for Life, UNESCO, 2006). From this point of view, the child's performance needs



to be treated as an indicator of systematic quality. With reference to education, quality is a relative term and hard to define and even more difficult to measure.

School Education System under Different Boards

In the minds of many people, school boards have considerable influence over educational decisions and provide a key social and political connection to the schooling process. In India, though there is the provision of central authority, but primary education is a state system and power officially resides with the states. A school board functions locally, within the confines of the state's delegation of power and the geographical boundaries of the district, but is a legal agency of the state and thus derives its power from the state's constitution, laws, and judicial decisions. By state legislative enactment, school boards delegate power and authority to develop policies, rules, and regulations to control the operation of the schools, including system organization, school site location, school finance, equipment purchase, staffing, attendance, curriculum, co-curricular activities, and other functions essential to the day-to-day operation of schools within the district's boundaries.

School Boards in India

There are 33 different educational boards in the country, including the Central Board of Secondary Education (CBSE), Council for the Indian School Certificate Examinations (CISCE) which is the umbrella for ICSE and ISC and the various State Educational Boards.

However, our major focus in this study is on the Central Board of Secondary Education (CBSE), Indian Council of Secondary Education (ICSE), International Baccalaureate Organizations (IBOs), The International General Certificate of Secondary Education (IGCSE) and Secondary School Certificate (SSC).

2. LITERATURE REVIEW :

There has not been much research done on this subject in India. In some universities abroad, researchers have tried to study this topic but in a limited way. No one has tried to compare the impact of different types of primary education in a country and no researcher has so far tried to find out which stream of education is the best for the child.

2.1 Research Papers

Punch S. (2004), University of Stirling studied the impact of primary education on school-to-work transition for young people in rural Bolivia and concluded that formal education was unlikely to increase children's future livelihood options.

Loxley W. (1983) from the education department, World Bank, studied the impact of primary school quality on learning in Egypt and revealed that the incremental effects of school quality on the poor are greater than those found for children of advantaged backgrounds.

Berlinski, S. and Galiani, S. and Gertler, P. (2006) studied the effect of pre-primary education on primary school performance and concluded that preprimary school attendance positively affects student's self-control in the third grade as measured by behaviors such as attention, effort, class participation, and discipline.

Michaelowa K. (2007) from University of Zurich studied the impact of primary and secondary education on higher education quality and her results suggest that certain minimum levels of enrolment at primary and secondary level represent a necessary condition for the development of functioning higher education. Another relevant result is that strong differences between educational institutions at secondary level may be detrimental for tertiary education quality.

Project objective and Research Question:

Objective:

To determine whether extra coaching results in better performance of the students in the subject of Mathematics at Class XII.

Research Question:

Does extra coaching help in getting higher marks in the subject of Mathematics?

Project Scope and Limitations

Project Scope



The scope of the project includes preparation of questionnaire, data collection and analysis of data collected, review of existing literature, findings and recommendations. The field work involves visiting a few students' houses and interviewing their parents.

Limitations of the study

Sample Distribution: Though the sample size was large, I wasn't able to obtain sufficient students from IB and IGCSE board. As a result, the study focuses more on three boards viz. SSC, CBSE and ICSE.

Access: Due to unavailability of sufficient funds, I had to use Microsoft Excel for statistical analysis which is not as comprehensive as SPSS.

Time Factor: Due to paucity of time, I could not visit each respondent's house and take the interviews.

Project Benefits

Relevance to Society: This is a pioneering study in the field. It will analyze the performance of those children in higher education i.e. Class XII to judge the impact of extra coaching from private tutors in Mathematics in Class XII. This research project will be extremely helpful to all parents who are right now confused about enrolling their child in a coaching class or just trust the college education system and let their children learn from college teachers.

3. RESEARCH METHODOLOGY :

Study Design

This research is primarily about students who had opted for Mathematics as a subject in class XII. This research is to try and find out whether the students' performance in Mathematics in Class XII is influenced by the additional outside coaching. Hence I have used the method of primary data collection via questionnaires to obtain information about the marks & extra coaching. The data so collected was then analyzed using various statistical techniques and conclusions were drawn from the results.

Study Setting

Students from H. R. College of Commerce and Economics who had opted for Mathematics in class XII and who have passed class XII were included in the primary study. The reason for selecting students only from one institution was to eliminate external influencing factors like teachers quality which could impact their performance in class XII. Since they are from the same college, it would mean they have studied Mathematics in class XII from the same teachers, which in turn would mean that that is a constant factor.

Sampling

The sample was selected through a method of Systematic Sampling. 30 questionnaires were distributed to each of the 8 divisions of F.Y.B.Com. Out of 240 forms so distributed, 193 students submitted the forms, out of which 26 forms were rejected because of incomplete information. Hence, the final sample size for the study was 157 students. Also, since the sample was chosen from a single college, almost all had the same socio-economic status and hence had the same exposure to information.

Variables

For the purpose of statistical analysis, following variables were taken into consideration. No control variables were taken in the study.

Dependent Variable:

Marks: This is the marks obtained in the subject at the yearend examination, a quantitative variable.

Independent Variables:

Enrollment in a Coaching Class or private tuition.

Study Methods

Questionnaire: A short, simple and objective type of questionnaire was prepared and distributed among the classes of F.Y.B.Com of H. R. College of Commerce and Economics. It contained various questions in order to provide the necessary data to carry out this survey.

Data Collection

Data was collected from a sample of 157 students which included 59 boys and 98 girls through the questionnaires.



4. RESULTS :

Representation of data collected

Once the data is collected, it is easier to draw patterns in the data via representation through diagrams. Based on my data, I have represented them through pie diagrams and bar diagrams wherever applicable. Further conclusions are drawn once the data is analyzed.

Data was collected from 157 students of first year B.Com which included 59 boys and 98 girls. The following diagram represents this distribution:

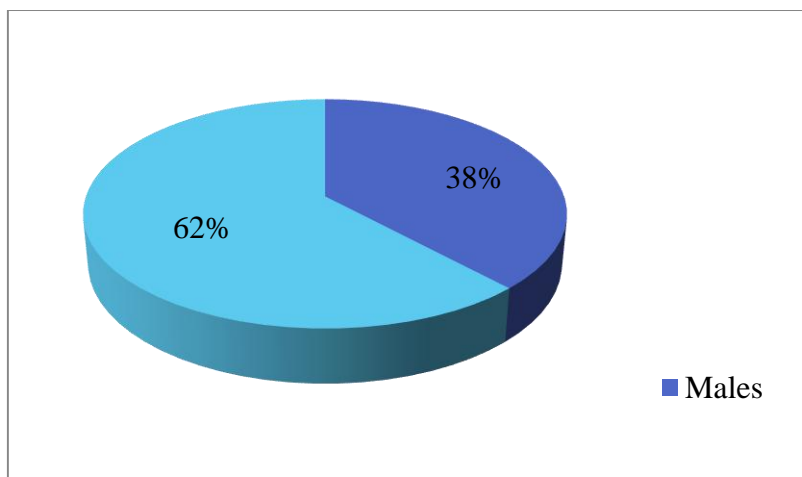


Figure 1: Distribution of boys and girls in the data collected

Four boards emerged from the data collected. These were

- SSC
- ICSE
- CBSE
- IGCSE

The questionnaire also included the IB board. However, there were no students from that board in the data collected. Hence they are not represented in the results.

It is seen that maximum students are from SSC board: 103 students, followed by ICSE: 47 students. CBSE and IGCSE had 5 and 2 respondents respectively.

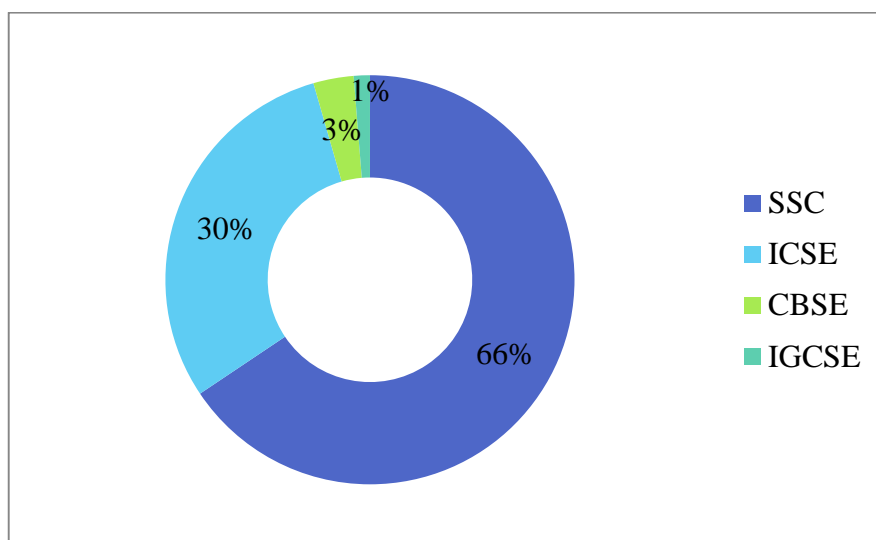


Figure 2: Distribution of students in different boards



In order to determine the correlation between students who have scored high marks in Class X and the marks obtained by them in Mathematics in Class XII, the students were asked their percentages in the class X examination. It was seen that maximum students fall in the range 90% - 95%.

The percentage of students who scored higher than 95% and lower than 90% were 11% and 20% respectively. This is represented in figure 3.

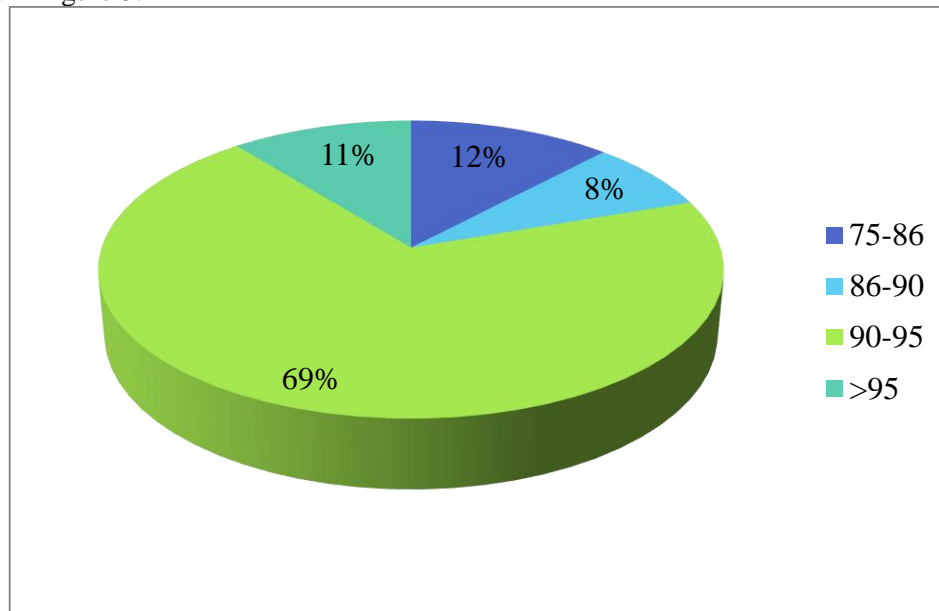


Figure 3: Distribution of marks scored in Class X examination

The following figure gives the distribution of marks of students in Mathematics in Class XII. It is seen that maximum students have scored more than 90% marks.

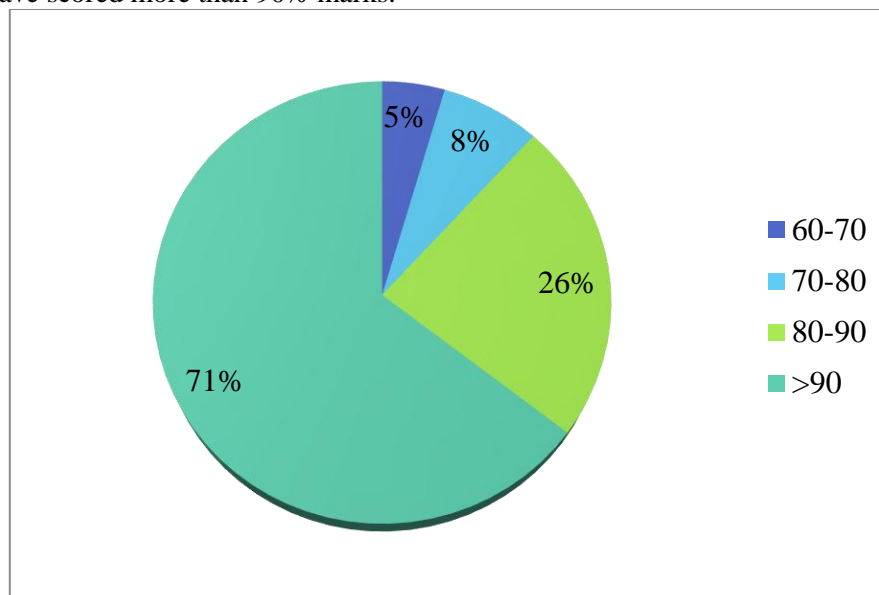


Figure 4: Distribution of marks scored by students in Mathematics in Class XII

As the objective of the paper is to determine whether boards impact the marks obtained in Mathematics in Class XII, averages marks were calculated for the different boards. Figure 5 shows the average marks obtained in the same. It is seen that average of CBSE is the highest, followed by ICSE & SSC.

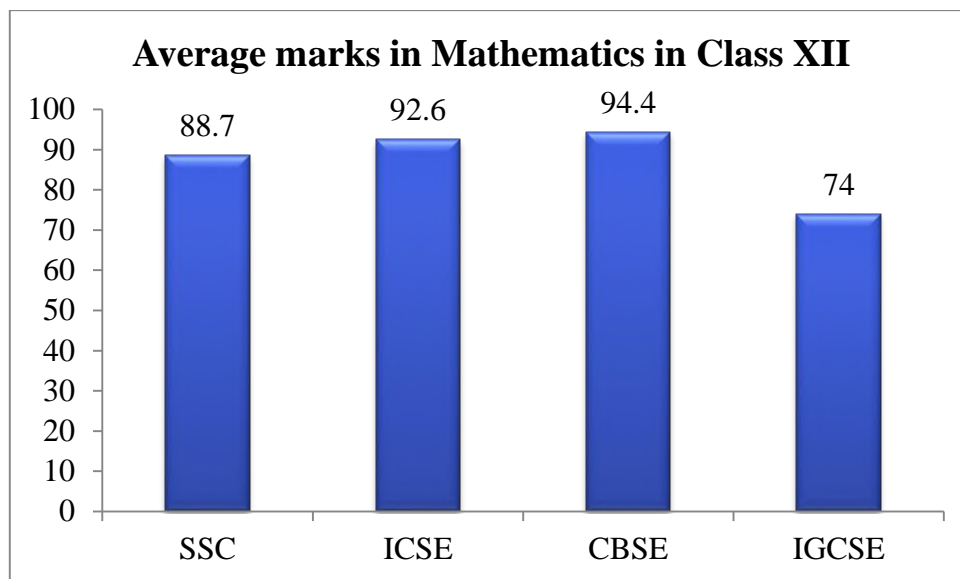


Figure 5: Average marks in Mathematics in class XII

To establish connection between the marks obtained by students and whether they go for extra coaching, they were asked if they took extra coaching or not. It was found that only 14% of the students did not take any coaching in addition to the lectures attended in college. The following figure represents the distribution

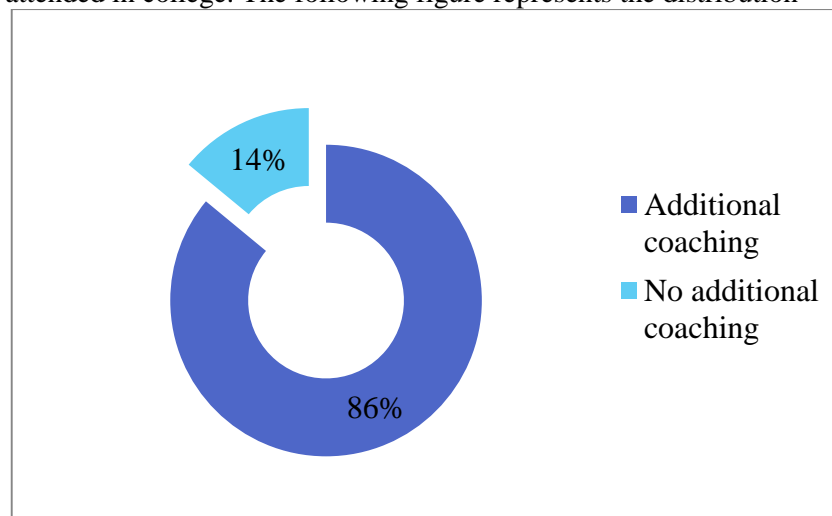


Fig 4.7 Distribution of students based on additional coaching

Hypothesis.

It is observed that most students enroll for extra coaching in the subject of mathematics in Class XII. Hence I wanted to find out whether it was resulting in any improvement in their performance or not.

H_0 : Enrolment in coaching classes has no impact on the marks scored in mathematics in Class XII

H_1 : Students going to coaching classes secure more marks in mathematics in Class XII as compared to those who don't. As the sample size for students who did not take additional coaching was small (22), a t-test was applied for the difference in two samples. The formula is

$$t = \frac{(\bar{x}_1 - \bar{x}_2) - (\mu_1 - \mu_2)}{\sqrt{\frac{s_1^2}{n_1} + \frac{s_2^2}{n_2}}}$$

\bar{x}_1 : arithmetic mean of marks of students from sample who did not take extra coaching



\bar{x}_2 : arithmetic mean of marks of students from sample who took extra coaching
 μ_1 : arithmetic mean of marks of students from population who did not take extra coaching
 μ_2 : arithmetic mean of marks of students from population who took extra coaching
 n_1 : sample size of boys
 n_2 : sample size of girls
 s_1 : standard deviation of marks of students from sample who did not take extra coaching
 s_2 : standard deviation of marks of students from sample who took extra coaching

Here the quantity $\mu_1 - \mu_2$ is zero as we assume there is no difference between the marks of those who took additional coaching and those who did not. The t-test was performed used Microsoft Excel and the following output were obtained:

t-Test: Two-Sample
Assuming Unequal
Variances

	Variable 1	Variable 2
Mean	89.4590909	89.9259259
Variance	78.2082468	64.0392482
Observations	22	135
Hypothesized Mean Difference	0	
df	27	
t Stat	-0.2325677	
P(T<=t) one-tail	0.40892551	
t Critical one-tail	1.70328842	
P(T<=t) two-tail	0.81785103	
t Critical two-tail	2.05183049	

Figure 4.13 Output of t-test

Since the alternate hypothesis is one sided, the t-statistic is -0.2325677 which is less than the critical value of 1.70328842. Hence we DO NOT REJECT the null hypothesis i.e. coaching classes have no impact on marks in mathematics in Class XII.

5. CONCLUSIONS AND RECOMMENDATIONS :

Conclusions:

One of the things I wanted to find was, was it really beneficial to join a coaching class for Mathematics in class XII? Does it result in students scoring more? It was found that 86% of the students took additional coaching in addition to the lectures attended in college. To find out the impact, t-test was applied on the sample and **it was found that additional coaching had no impact on the performance of students in Mathematics in class XII.**

Recommendations:

Based on my study, I would like to recommend the following:

The parents are advised not to join the rat race of enrolling their children for coaching classes/tuitions because that does not make any difference to the final marks scored by the students.

Future Scope:

Further research can be carried out regarding other subjects. Whether the same pattern is observed in other subjects like Economics or Accounts.



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