Comparison of Interest in Physics at +2 Level of Students Scoring Below 80 % and Above 80 % Marks at SSC in Maharashtra

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ABSTRACT

The present study aims to compare interest in physics at +2 level of students scoring below 80 % and Above 80 % Marks at SSC in Maharashtra. At +2 level in science stream physics is the most important subject. It plays major role in different competitive examinations. Physics is compulsory subject for all examinations. There are different examinations at national level i.e. NEET, JEE (mains and advance). At state level MHT-CET is held for engineering, agriculture and pharmacy admissions. For students at this stage, they feel that physics is challenging subject. To achieve the success in competitive examinations students must obtain good score in physics. Our main aim is to increase the interest of students in physics.

INTRODUCTION

At higher secondary level i.e. +2 level the age group of students is very sensitive. They have number of attractions in this age group. Due to that they not concentrate on their study. As compared to other subjects i.e. chemistry, mathematics, biology they feel physics is difficult subject. In physics there are some concepts from chemistry, electronics, mathematics and geography. Students must know the basic things from other subject and they have to utilize the knowledge of other subjects for understanding physics. To measure the interest in Physics researcher developed an interest inventory for Physics, and used it to determine interest [1].

OBJECTIVES OF THE STUDY

For the present study following are the objectives of study:

1) To compare the interest of students scoring below 80 % and above 80 % marks at SSC in Maharashtra.

2) To compare the interest of students scoring below 80 % and above 80 % marks at SSC in Maharashtra as per their Parents income / financial condition.

Sample

For current study researcher selected population from three Tahsils (Wai, Khandala & Koregaon) from Satara district by random sampling method [2]. From these three Tahsils he visited 11 junior colleges. The XII Std Science students from these colleges were selected randomly **(Table 1)**.

Out of these total 785 students 635 students are from rural background and 150 students are from urban background. The number of male and female students is 350 and 435 respectively. From the students total 147 English medium, 205 Marathi medium, 431 Semi-English and 2 Urdu medium have their medium of study up to 10th level. As per financial condition is concerned the annual income of parents is as below. Rs 0 - 1,00,000, 683 students, Rs 1,00,001 - 2,50,000, 49 students, Rs 2,50,001 - 8,00,000, 39 students and above Rs 8,00,000, 14 students. 357 students have their 10th percentage below 80 % and 428 students have their 10th percentage above 80 %.

DATA COLLECTION PROCEDURE

For measuring the interest in Physics researcher adopted the following procedure **(Flow chart)**.
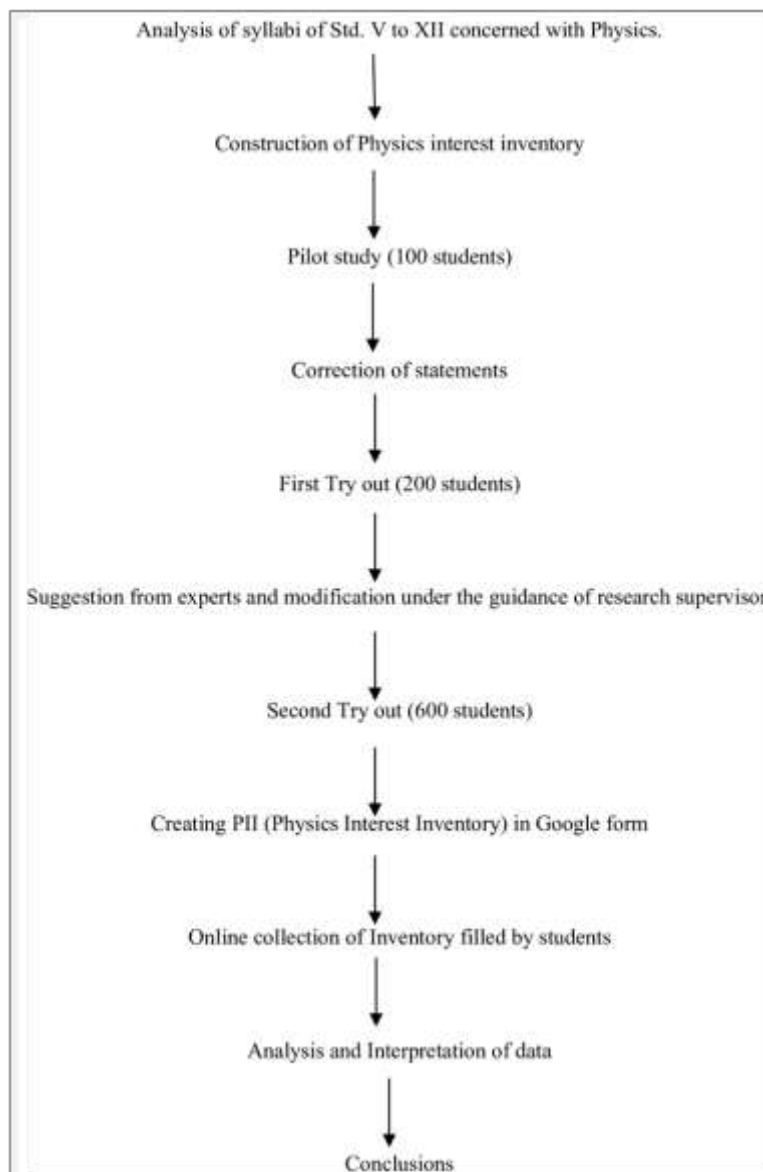
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Table 1. Number of students.

Taluka	Sr. No.	Name of Jr. College	Number of students	Total Number of students
Wai	1	Kisan Veer Jr. College, Wai	451	545
	2	Kanya shala & Jr. College, Wai	08	
	3	K.B.P. Jr. College, Wai	71	
	4	Mahatma Gandhi Jr. College, Panchwad	11	
	5	Swarajya public school Jr. college, Bhuinj	04	
Khandala	6	Dnyansawardhini Jr. College, Shirval	47	121
	7	Rameshwar Vidyalaya & Jr. College, Wing	12	
	8	Rajendra Jr. College, Khandala	62	
Koregaon	9	M.K. Mane Jr. College, Deur	49	119
	10	V.D.P. Jr. College, Rahimatpur	32	
	11	B.V.M. Jr. College, Wagholi	38	
Total			785	785

Flow chart:

Analysis of syllabi of Std. V to XII concerned with Physics.
↓
Construction of Physics interest inventory
↓
Pilot study (100 students)
↓
Correction of statements
↓
First Try out (200 students)
↓
Suggestion from experts and modification under the guidance of research supervisor.
↓
Second Try out (600 students)
↓
Creating PII (Physics Interest Inventory) in Google form
↓
Online collection of Inventory filled by students
↓
Analysis and Interpretation of data
↓
Conclusions

Flow Chart 1. Flow chart of data collection procedure.

As per above flow chart initially researcher studied all syllabus from std V[th] to XIIth related with physics. Researcher himself is working in Kisan Veer Jr. college, Wai at +2 level as an assistant teacher in physics. Then he constructed Physics Interest Inventory (PII) containing 145 statements. The option for the statements is Like(L), Indifferent (I) and Dislike (D). Then he conducted pilot study of PII on 100 students. After discussion with experts & students researcher made some corrections. Then he conducted the first try out on 200 students from Shirval, Tal-Khandala & Wai, Tal- Wai of Satara district. He analyzed the result and by taking opinion of students, teachers and experts he modified the interest inventory. Then he developed the Google form of it. Then from three Tahsils namely Wai, Khandala and Koregaon of Satara district he conducted the survey in 11 Junior colleges. Total 785 students participated. Then in analysis he allotted 1 mark for Like(L), 0 mark for Indifferent(I) and -1 mark for

Dislike(D). After that he calculated the physics interest scores of all students by using Microsoft Excel [3].

Then for analysis of data by using Microsoft Excel researcher compared the scores of students scoring below 80 % and above 80 % marks at SSC in Maharashtra.

i)   Schools of the students.

ii)   Financial condition of the parents.

Analysis of data

Researcher used average scores of students with above attributes. In addition to that He prepared Graphs i.e. Pie diagram, Bar Graphs & Histograms.
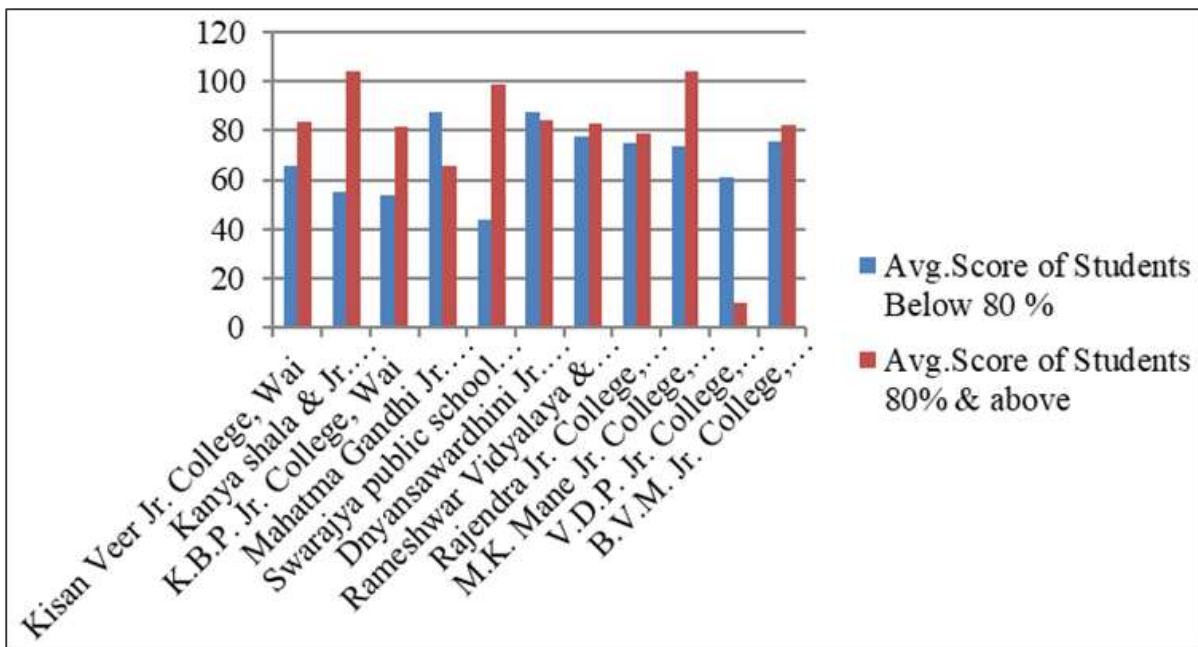
Table 2 and Figures 1 & 2 showing No of students scoring below 80 % and above 80 % marks & Avg. score of Interest in Physics for same students as per their schools.

Table 2. No of students scoring below 80 % and above 80 % marks & Avg. score of Interest in Physics for same students as per their schools.

Taluka	Sr. No.	Name of Jr. College	No. of Students Below 80 %	No. of Students 80% & above	Avg. Score of Students Below 80%	Avg. Score of Students 80% & above
Wai	1	Kisan Veer Jr. College, Wai	199	252	65.73	83.53
	2	Kanya shala & Jr. College, Wai	01	07	55.00	104.29
	3	K.B.P. Jr. College, Wai	35	36	53.94	81.61
	4	Mahatma Gandhi Jr. College, Panchwad	08	03	87.63	65.67
	5	Swarajya public school Jr. college, Bhuinj	02	02	44.00	98.50
Khandala	7	Dnyansawardhini Jr. College, Shirval	11	36	87.73	84.47
	8	Rameshwar Vidyalaya & Jr. College, Wing	07	05	77.57	82.60
	9	Rajendra Jr. College, Khandala	36	26	75.25	78.62
Koregaon	10	M.K. Mane Jr. College, Deur	28	21	73.75	104.33
	11	V.D.P. Jr. College, Rahimatpur	11	21	60.73	9.81
	12	B.V.M. Jr. College, Wagholi	19	19	75.47	82.47
Total			357	428	67.78	84.75
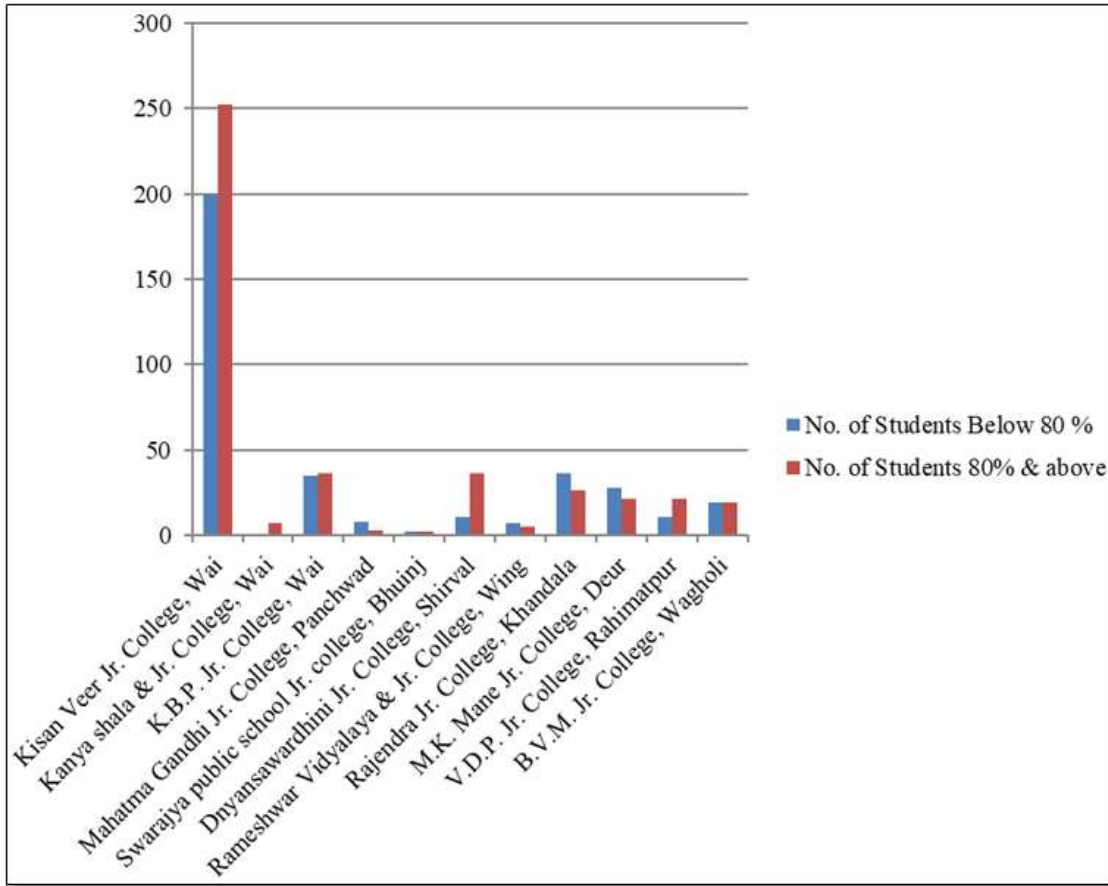
Figure 1. Graph showing No of students scoring below 80 % and above 80 % marks & Avg. score of Interest in Physics for same students as per their schools.
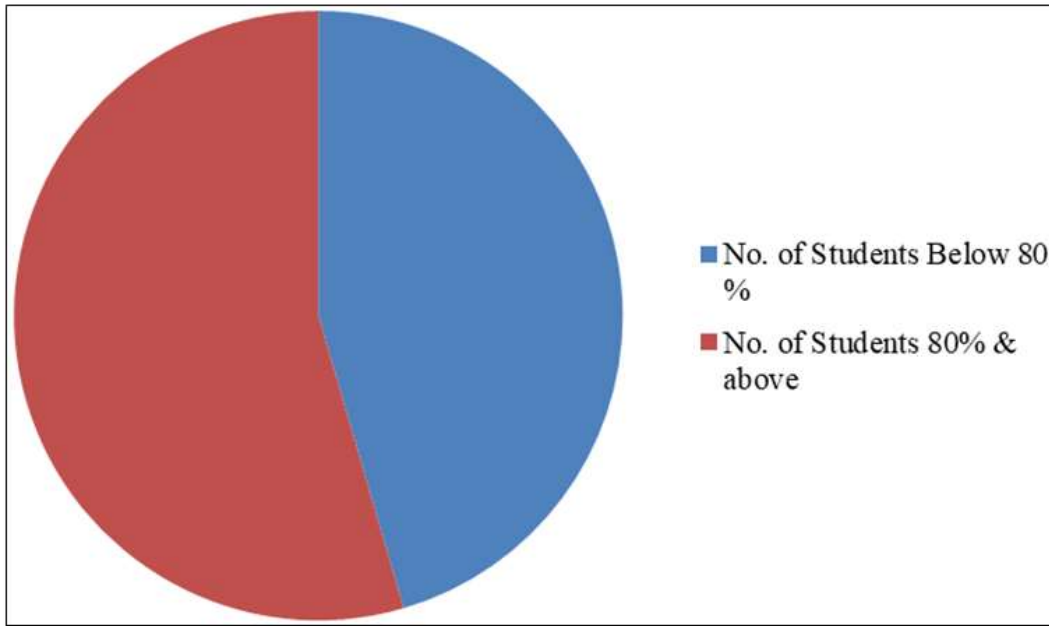

Figure 2. Graph showing Average score of students scoring below 80 % and above 80 % marks as per their schools.
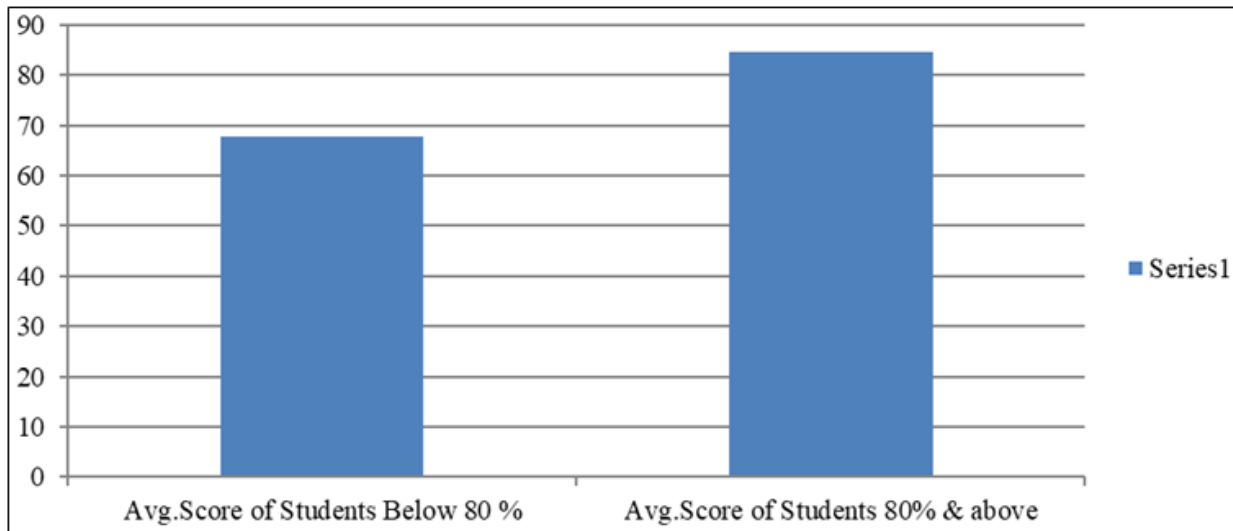
By observing or calculating the averages he observed following scores (**Table 3 and Figures 3 & 4**).

Table 3. The average scores students scoring below 80 % and above 80 % marks at SSC are as below.

-	Below 80 %	80% & above	Total
No. of students	357	428	785785
Average Score	67.78	84.75	77.03

Figure 3. Graph showing No. of students scoring below 80 % and above 80 % marks.
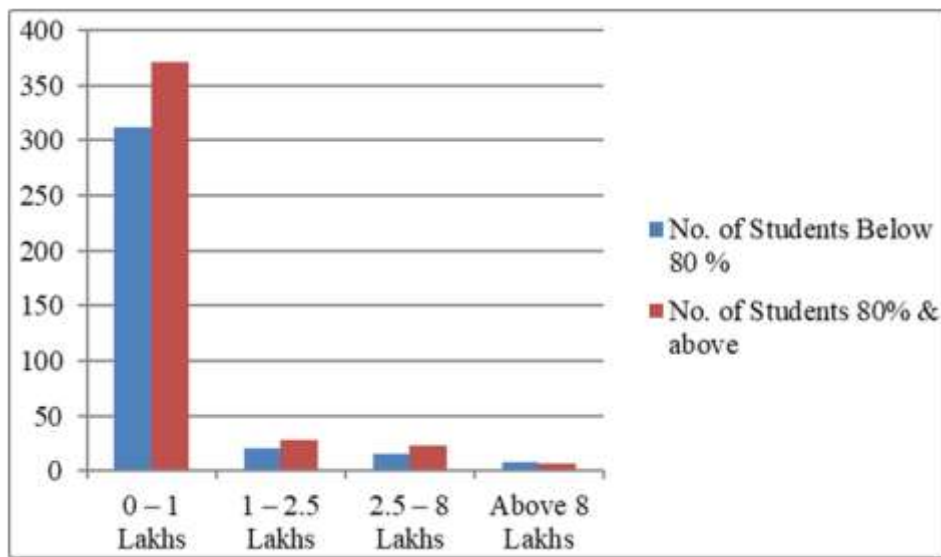

Figure 4. Graph showing Average score of students scoring below 80 % and above 80 % marks.
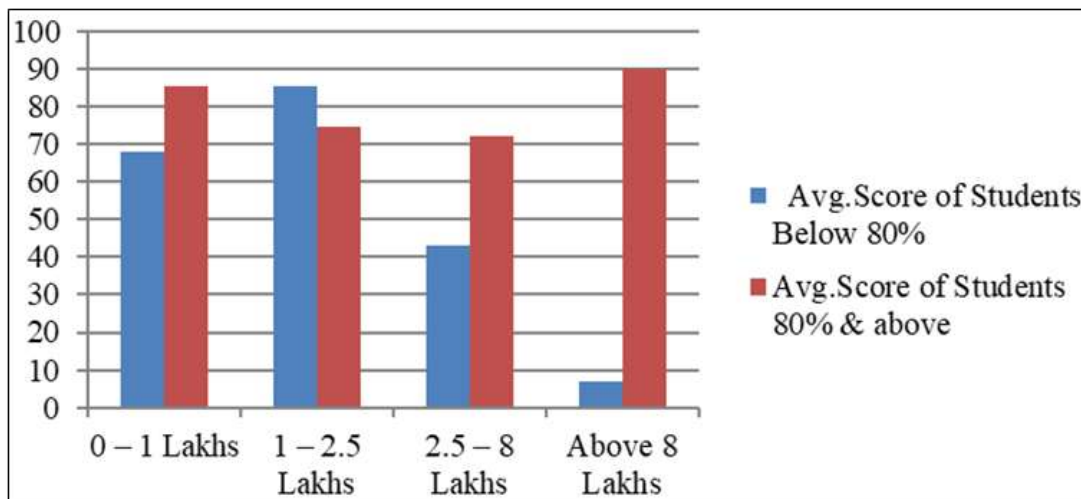
Table 4 and Figures 5 & 6 showing No of students scoring below 80 % and above 80 % marks at SSC & Avg. score of Interest in Physics as per their parent's income level.

Table 4. No of students scoring below 80 % and above 80 % marks at SSC & Avg. score of Interest in Physics as per their parent's income level.

Sr. No.	Financial condition of Parents	No. of Students Below 80 %	No. of Students 80% & above	Avg. Score of Students Below 80 %	Avg. Score of Students 80% & above
1	0 - 1 Lakhs	312	371	67.78	85.31
2	1 - 2.5 Lakhs	21	28	85.57	74.71
3	2.5 - 8 Lakhs	16	23	43.13	72.09
4	Above 8 Lakhs	8	6	7.13	90.00
	Total	357	428	67.78	84.75

Figure 5. Graph showing No. of students scoring below 80 % and above 80 % marks with their parents' annual income.
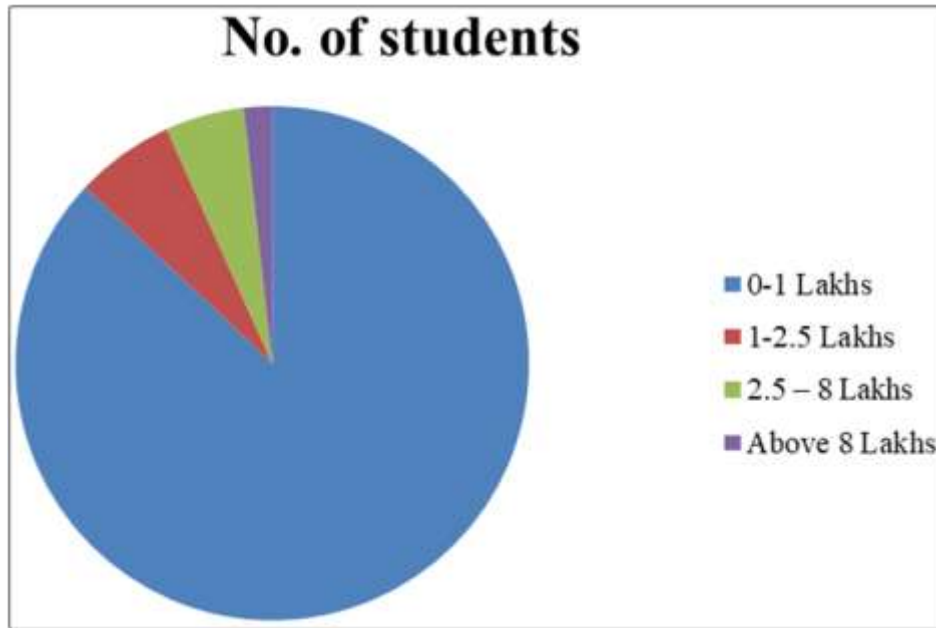

Figure 6. Graph showing Average score of students scoring below 80 % and above 80 % marks with their parents' annual income.

Table 5 and Figures 7 & 8 showing the average scores for students considering the income level of parents i.e. 0 - 1 Lakh, 1 - 2.5 Lakh, 2.5 - 8 Lakh & above 8 Lakh.

Table 5. The average scores for students considering the income level of parents i.e. 0 - 1 Lakh, 1 - 2.5 Lakh, 2.5 - 8 Lakh & above 8 Lakh.

-	0-1 Lakhs	1-2.5 Lakhs	2.5-8 Lakhs	Above 8 Lakhs	Total
No. of students	683	49	39	14	785
Average Score	77.30	79.37	72.00	69.57	77.03

Figure 7. Graph showing Total No. of students scoring below 80 % and above 80 % marks with their parents' annual income.
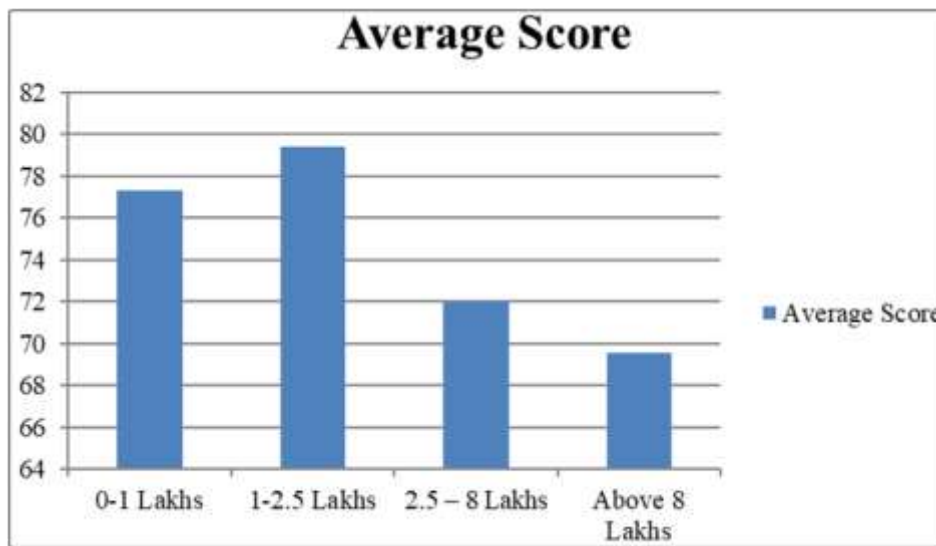
Figure 8. Graph showing Average score of students scoring below 80 % and above 80 % marks with their parents' annual income [4,5].

CONCLUSIONS

i)   The students whose parent income is in between 1-2.5 Lakhs (Avg. 79.37) have more interest in Physics as compared to other students.

ii)   The students whose parent's income is above 8 Lakhs (Avg. 69.57) have less interest in physics as compared to other students.

iii) The students whose score is 80 % and above it (Avg. 84.75) has more interest in Physics.

iv)   The students whose score is below 80 % (Avg. 67.78) have less interest in Physics.

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