CLIx CONNECTED LEARNING INITIATIVE

Summary of Learning Assessment in Chhattisgarh

Research Brief

April 2017

The Connected Learning Initiative (CLIx) is a technology enabled initiative at scale for high school students. The initiative was seeded by Tata Trusts, Mumbai with Tata Institute of Social Sciences, Mumbai and Massachusetts Institute of Technology, Cambridge, as founding partners.

Collaborators: Centre for Education Research & Practice - Jaipur, Mizoram University - Aizawl, Eklavya - Madhya Pradesh, Homi Bhabha Centre for Science Education - Mumbai, National Institute of Advanced Studies - Bengaluru, State Council of Educational Research and Training (SCERT) of Telangana - Hyderabad, Tata Class Edge - Mumbai, Govt. of Rajasthan, Govt. of Mizoram, Govt. of Chhattisgarh and Govt. of Telangana.

Student Learning Assessment in Chhattisgarh

Research Brief

The Connected Learning Initiative (CLIx) is a technology enabled initiative at scale for high school students. The initiative is seeded by Tata Trusts with Tata Institute of Social Sciences, Mumbai and Massachusetts Institute of Technology, Cambridge, USA, as founding partners. It aims to provide opportunities for participation in quality education through meaningful integration of technology to high school students from underserved regions. CLIx students modules provide engaging, hands-on learning experiences in Mathematics, Science, Communicative English and Digital Literacy, integrated with value education and skills relevant to the 21st century.

As part of the baseline study, a learning assessment tool was administered to Grade 9 students to assess their understanding and knowledge about Communicative English, Maths and Science. The tool consisted of 9 questions in English, 10 questions in Maths, and 15 questions in Science that were pitched at Grades 6, 8 and 9 levels. Data was collected from four states, Chhattisgarh, Mizoram, Rajasthan and Telangana using OMR sheets and a digital tool called Open Data Kit (ODK). This summary presents data collected from a sample of 20 schools in Dhamtari, Chhattisgarh which have been selected for CLIx intervention. In each of the schools, a sample of 40 students was drawn using a stratified random sampling method. A total of 778 students took the learning assessment test.
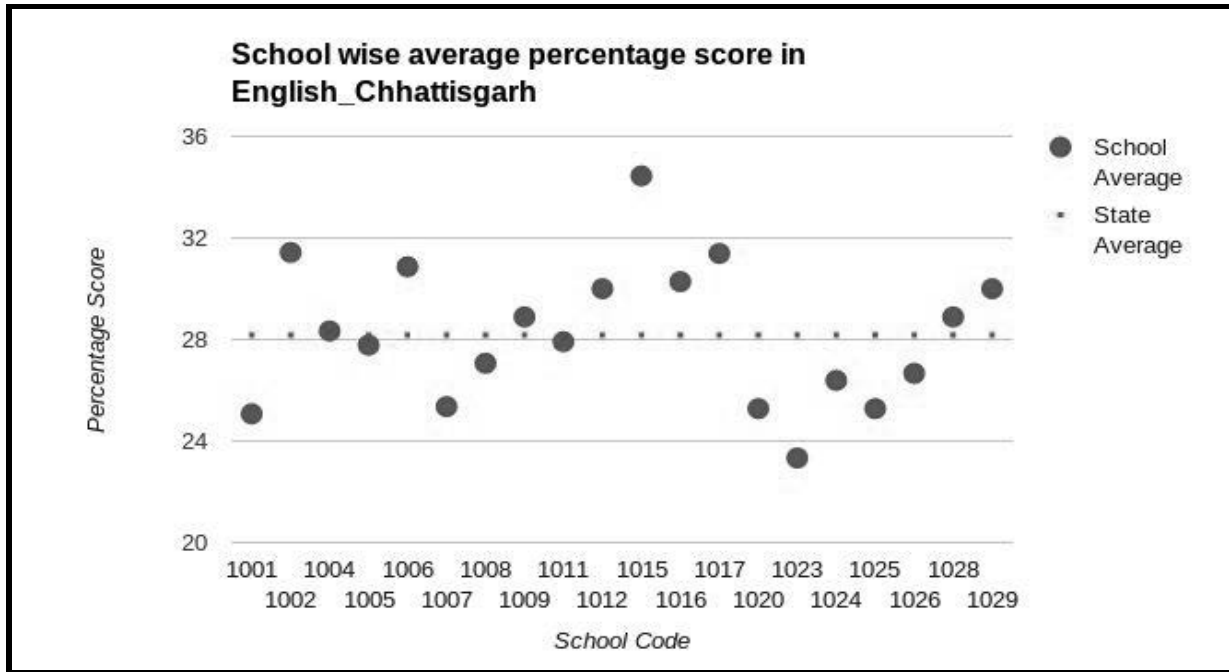
1] English

Nine questions on communicative English were asked to the students. The performance on these questions is given below.
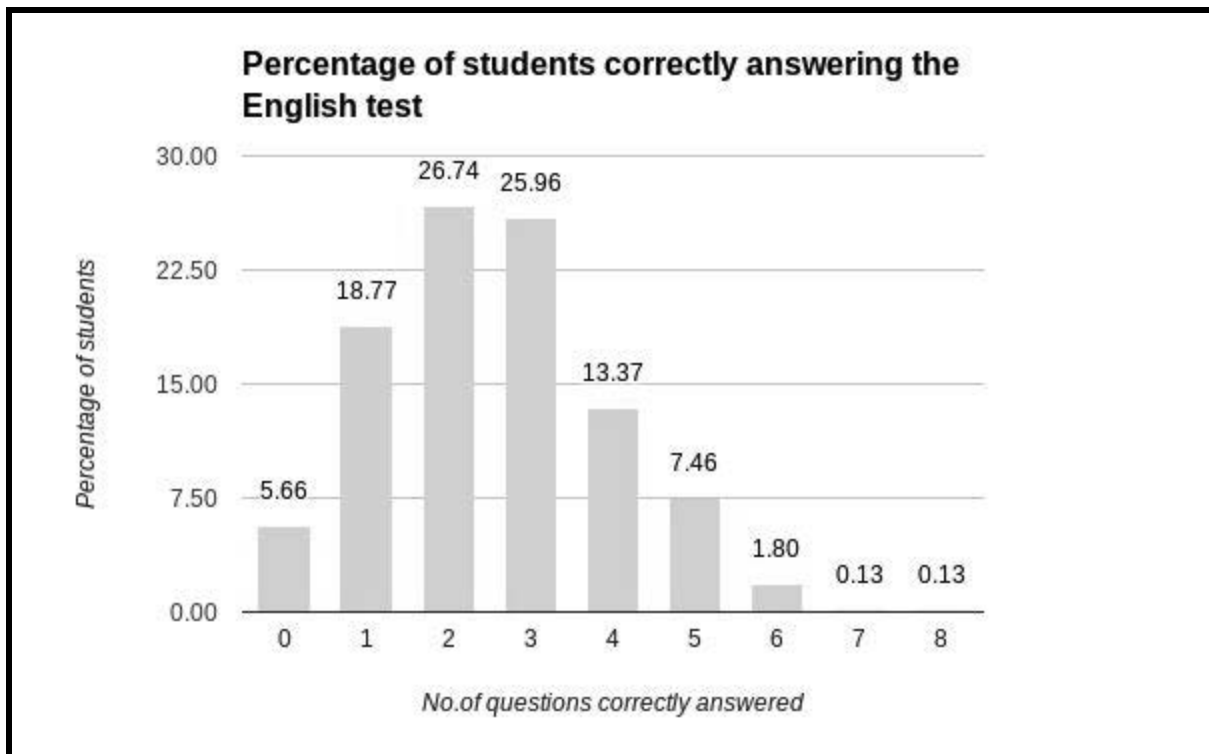
Table 1: Performance in English

Percentage score in English (Total 9 Questions)						
Total no.of schools	No.of students	Lowest Percentage Score	Highest Percentage Score	Mean	Standard Deviation	No.of schools where school average > state average
20	778	0	88.89	28.18	15.56	10

The average percentage score among students in Chhattisgarh on English is 28.18% with a standard deviation of 15.56%. The lowest score obtained was 0 and the highest score obtained was 88.89%. The average score for English in half of the schools was more than the state average score for English.

Graph 1: School-wise average percentage score in English for Chhattisgarh

Graph 2: Percentage of students correctly answering the English test

Nine questions were asked to assess the reading and writing levels of the students. A majority of the students (77%) were not able to answer more than 3 questions correctly with 5.66% of the students being

unable to answer even one question correctly. About 2% of the students were able to answer between 6 to 8 questions correctly. None of the students surveyed were able to answer all the questions correctly.

Box 1: The question with highest percentage of students giving correct answer (English Test)

Pick the correct option to fill in the blanks:
City life is different _____ village life.
   1. than
   2. from
   3. to
   4. then

The question which was answered correctly by most students was " City life is different ____village life". Out of 763 respondents, 43% of the students answered the question correctly (Option 2). Among the incorrect options, over a quarter of the students (29%) had selected the incorrect answer "to" (Option 3).

Box 2: The question with lowest percentage of students giving correct answer (English Test)

Which of these products can a customer buy in this shop?
   1. Onida TV
   2. Hitachi fridge
   3. Dell laptop
   4. Electrolux washing machine

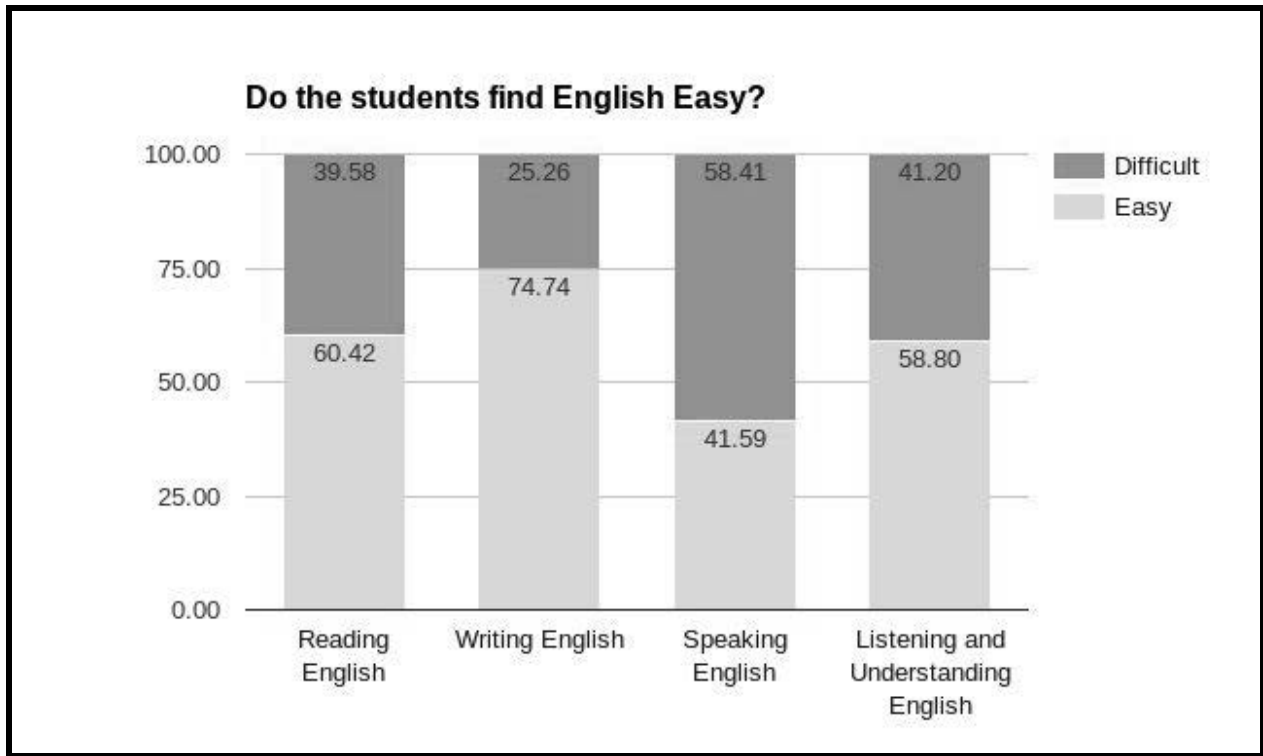| No	Description of Goods	Model Code	Quantity	Rate	VAT%	VAT Amt.	Amount (Rs.)
1	AC KELVINATOR-LES 52 CDE1 Sr. No.	AC LESS2CDE1	2	15,022.22	12.5	3,755.56	33,800.00
2	STABILISER – KS40A13L Sr.No.	KS40A13L	2	2,800.00	12.5	700.00	6,300.00
In Words: Rs. Forty Thousand One Hundred Only						4,455.56	40,100.00

All products are serviced by the company service centre.
Goods once sold will not be taken back or exchanged.
Warranty, etc. are given by the company only.   Authorised Signatory
E & O.E.

VIDEOCON   KENSTAR   SANSUI   ELECTROLUX   KELVINATOR SAMSUNG

The question which was answered correctly by the least number of students required them to refer to a bill and answer the product that a customer could buy from the shop. Only 10% of the students could answer it correctly by picking Option 4. Among the incorrect responses, over a third of the students (37%) had chosen the answer "Hitachi fridge" (Option 2) while about another one-third (31%) had answered "Dell laptop" (Option 3).

Graph 3: Do the students find English easy?

We asked what students find easy in English - reading, writing, speaking or listening and understanding. Most of the students (74.4%) find writing in English to be easy followed by 60.42% students finding reading in English to be easy and another 58.8% finding listening and understanding English to be easy. Less than half of the students (41.59%) find speaking in English to be easy.
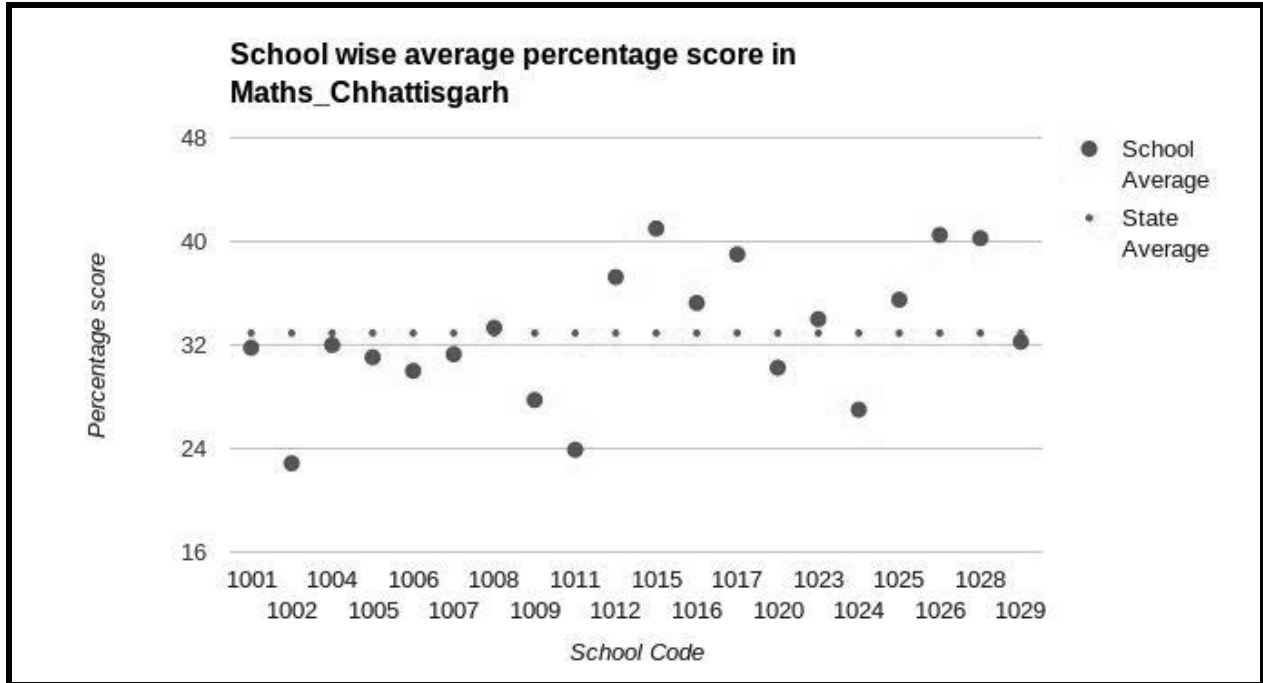
2] Maths

Ten questions in Maths were asked in the Learning Assessment Survey. The performance of the students is given below.
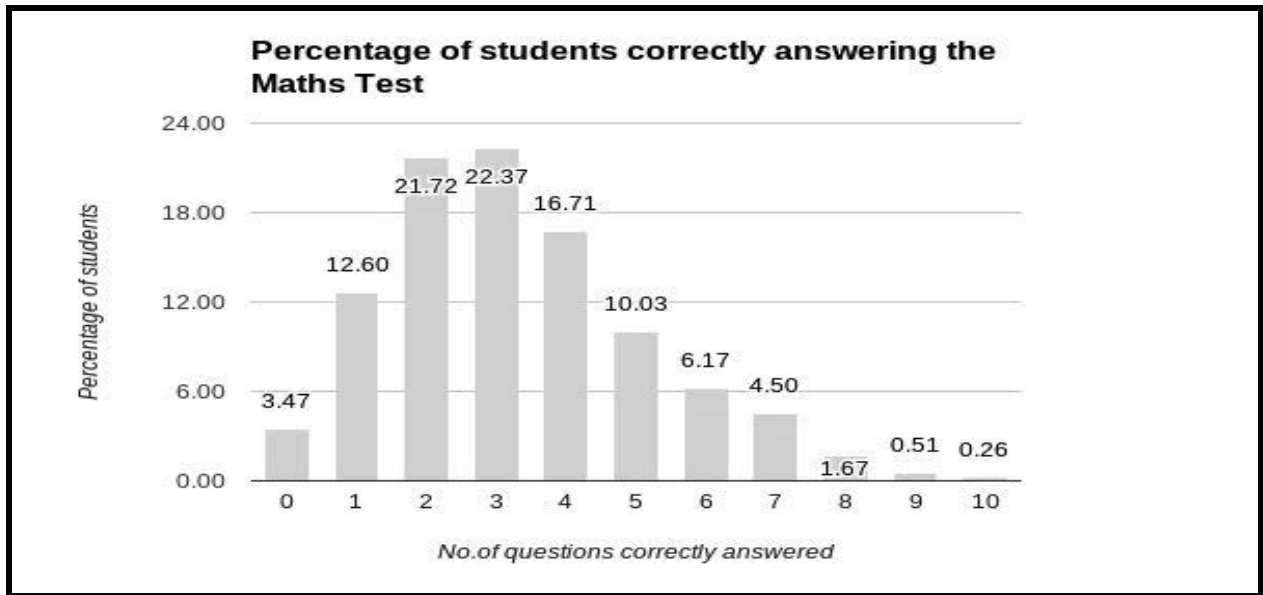
Table 2: Performance in Maths

Percentage score in Maths (Total 10 Questions)						
Total no.of schools	No.of students	Lowest Percentage Score	Highest Percentage Score	Mean	Standard Deviation	No.of schools where school average > state average
20	778	0	100	32.92	18.77	9

The average percentage score among students in Chhattisgarh on Maths assessment is 32.92% with a standard deviation of 18.77. The lowest score obtained was 0 and the highest score obtained was 100%. In 9 schools out of the total 20 schools surveyed, the average score for Maths was more than the State average score in Maths.

Graph 4: School-wise average percentage score in Maths for Chhattisgarh

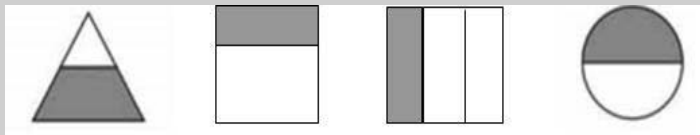**Graph 5: Percentage of students correctly answering the Maths test**

Ten questions were asked to the students as part of the learning assessment test to gauge their understanding of Maths. A majority of the students (77%) were not able to answer more than 4 questions

correctly with 3.47% of the students being unable to answer even one question correctly. About 2% of the students were able to answer between 8 to 10 questions correctly.

Box 3: *The question with highest percentage of students giving correct answer (Maths Test)*

कौन सी आकृति आधी छायांकित है?

The question that was answered correctly by the highest number of students required them to identify the figure which had half of its portion shaded. Out of 754 respondents, 54% answered the question correctly (Option 4). The percentage of students selecting one of the three incorrect options was almost equal.

Box 4: *The question with lowest percentage of students giving correct answer (Maths Test)*

एक कमीज़ जिसकी कीमत 200रु है एक सेल (बिक्री में छूट) में 160रु की कीमत पर उपलब्ध है। कमीज़ पर कितनी छूट है?

1. 20%
2. 40%
3. 60%
4. 80%

The question that was correctly answered by the least number of students required them to calculate the discount on the price of a shirt. Only 22% were able to answered it correctly (Option 1). 53% of the students selected the incorrect answer (Option 2) indicating that they had used the subtraction function instead of calculating the percentage of discount.
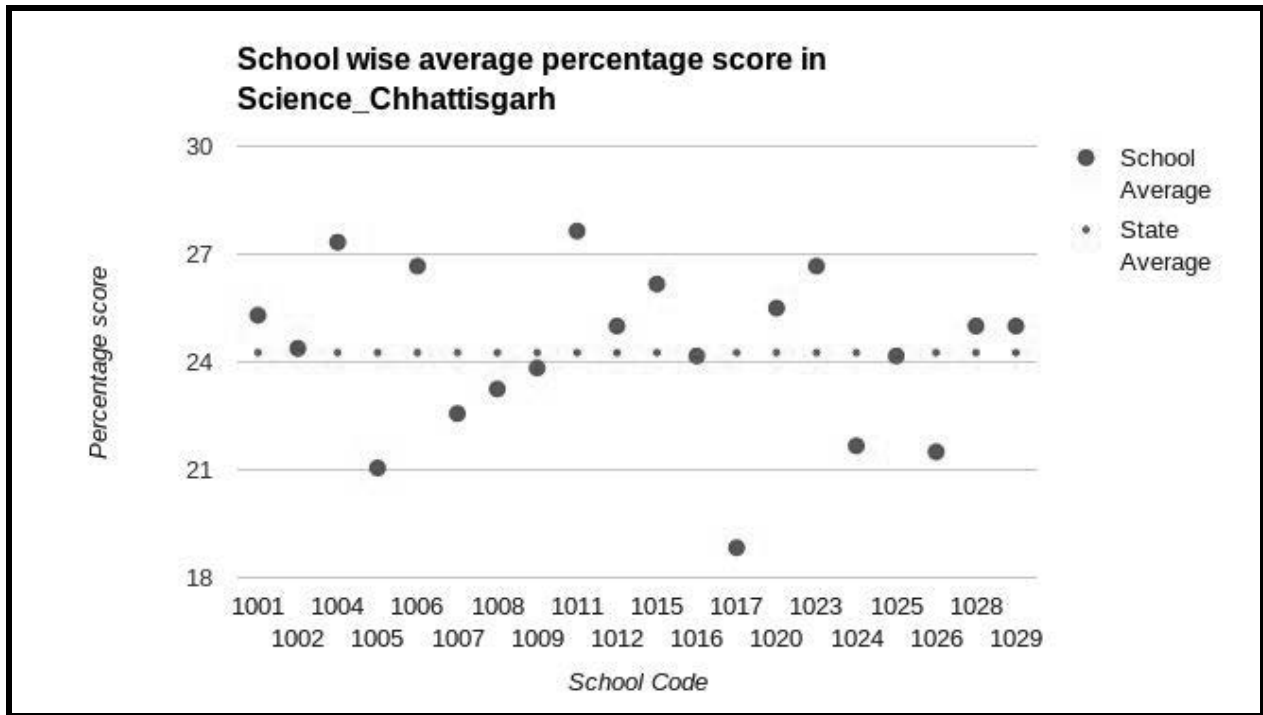
3] Science

Fifteen questions related to science were asked in the learning assessment survey. The performance of the students is given below.
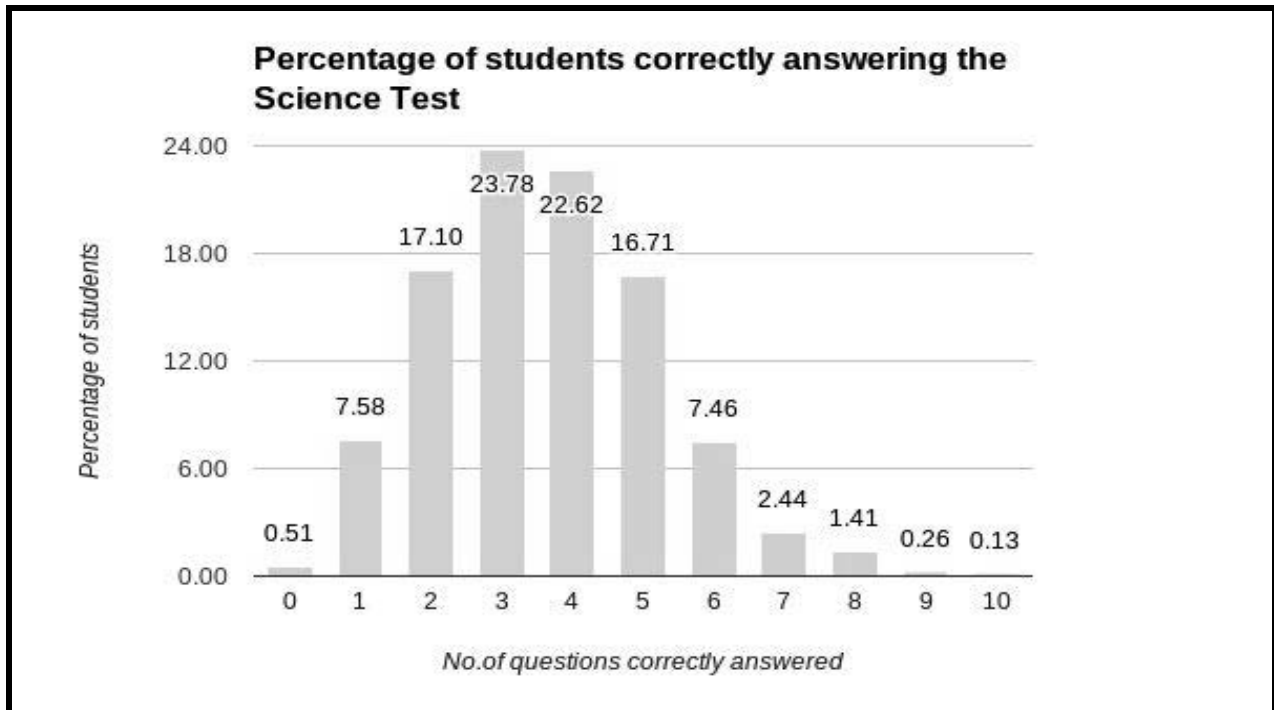
Table 3: Performance in Science

Percentage score in Science (Total 15 Questions)						
Total no.of schools	No.of students	Lowest Percentage Score	Highest Percentage Score	Mean	Standard Deviation	No.of schools where school average > state average
20	778	0	66.67	24.26	10.71	11

The average percentage score among students in Chhattisgarh on the Science assessment is 24.26% with a standard deviation of 10.71%. The lowest score obtained was 0 and the highest score obtained was 66.67%. In 11 schools out of the total 20 schools surveyed, the average score for Science was more than the state average score in science.

Graph 6: School-wise average percentage score in Science for Chhattisgarh

School wise average percentage score in Science_Chhattisgarh

Graph 7: School-wise average percentage score in Science for Chhattisgarh

Percentage of students correctly answering the Science Test

Fifteen questions were asked to the students as part of the learning assessment test to gauge their understanding of science (including physics, chemistry and biology). A majority of the students (about 72%) were not able to answer more than 4 questions correctly with less than one percent of the students being unable to answer even one question correctly. About 5% of the students were able to answer between 7 to 10 questions correctly. None of the students were able to answer more than 10 questions correctly.

Box 5: The question with highest percentage of students giving correct answer (Science Test)

निम्न में से कौन सा हिस्सा एक पादप कोशिका में है, लेकिन जन्तु कोशिका में नहीं पाया जाता है?

1. केन्द्रक
2. हरित लवक (क्लोरोप्लास्ट)
3. सूत्र कणिका (माइटोकांड्रिया)
4. कोशिका द्रव्य

The question which was correctly answered by most of the students asked them to identify a part which was found in plant cell but not in animal cell. The correct Option 2 was selected by 47.12% of the students. About 18% of the students had selected the incorrect Option 1 (nucleus) and another 18% had selected the incorrect Option 3 (mitochondria).

Box 6: The question with lowest percentage of students giving correct answer (Science Test)

रिक्त स्थान भरने के लिए सही विकल्प चुनें: प्रकाश का परावर्तन होता है ....

1. सभी चमकीले सतहों से
2. सभी समतल सतहों से
3. केवल दर्पण से
4. सभी सतहों से

The question which was answered by the lowest percentage of students was about light. Only 10.74% of the students answered it correctly (Option 4). A majority of the students (60.41%) had selected Option 1 which was an incorrect response.