

KPMG SURVEY OF KVS STUDENTS' COMPETENCIES

A SYNOPSIS

A ROAD MAP

What we set out to do

Understand
readiness levels
for PISA 2021

Prepare
roadmap
for change



Where all did we go

States: 12
Schools: 100
Teachers & Principals: 400
Students: 10,000
Assessments: 30,000
Duration: 2 months

On the PISA trail...

8 top performing PISA countries

- Canada
- Finland
- Japan
- Russia
- Singapore
- South Korea
- Taiwan
- Vietnam



How we did it

Introducing
Computer Based
Test (CBT) in KVS

Key Informant
Interview (KII)

Assessment
framework

Focus Group
Discussion (FGD)

Classroom
Observation
(CO)

Comparative
assessment
framework

Teacher Need
Assessment
(TNA)

Task Distribution
Framework
(TDF)

Analytics
framework



What we will change

Mathematical Literacy

64% - students at
proficiency level 2
or below

Scientific Literacy

62% - students at
proficiency level 2
or below

Reading Literacy

58% - students at
proficiency level 2
or below

Where will change happen

Classroom
Practice

Continuous
Professional
Development

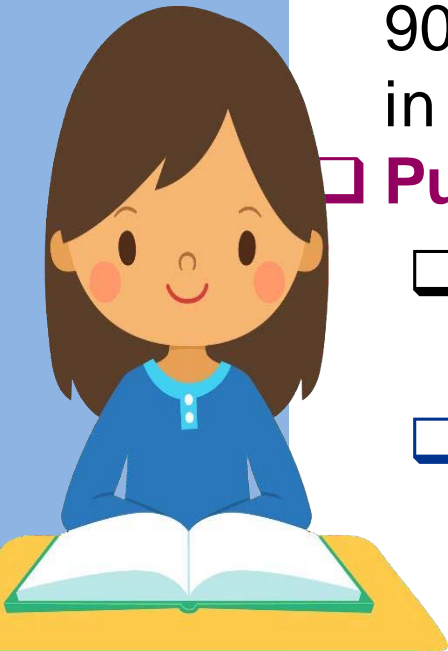
KV academic
processes
initiatives

Assessment
design

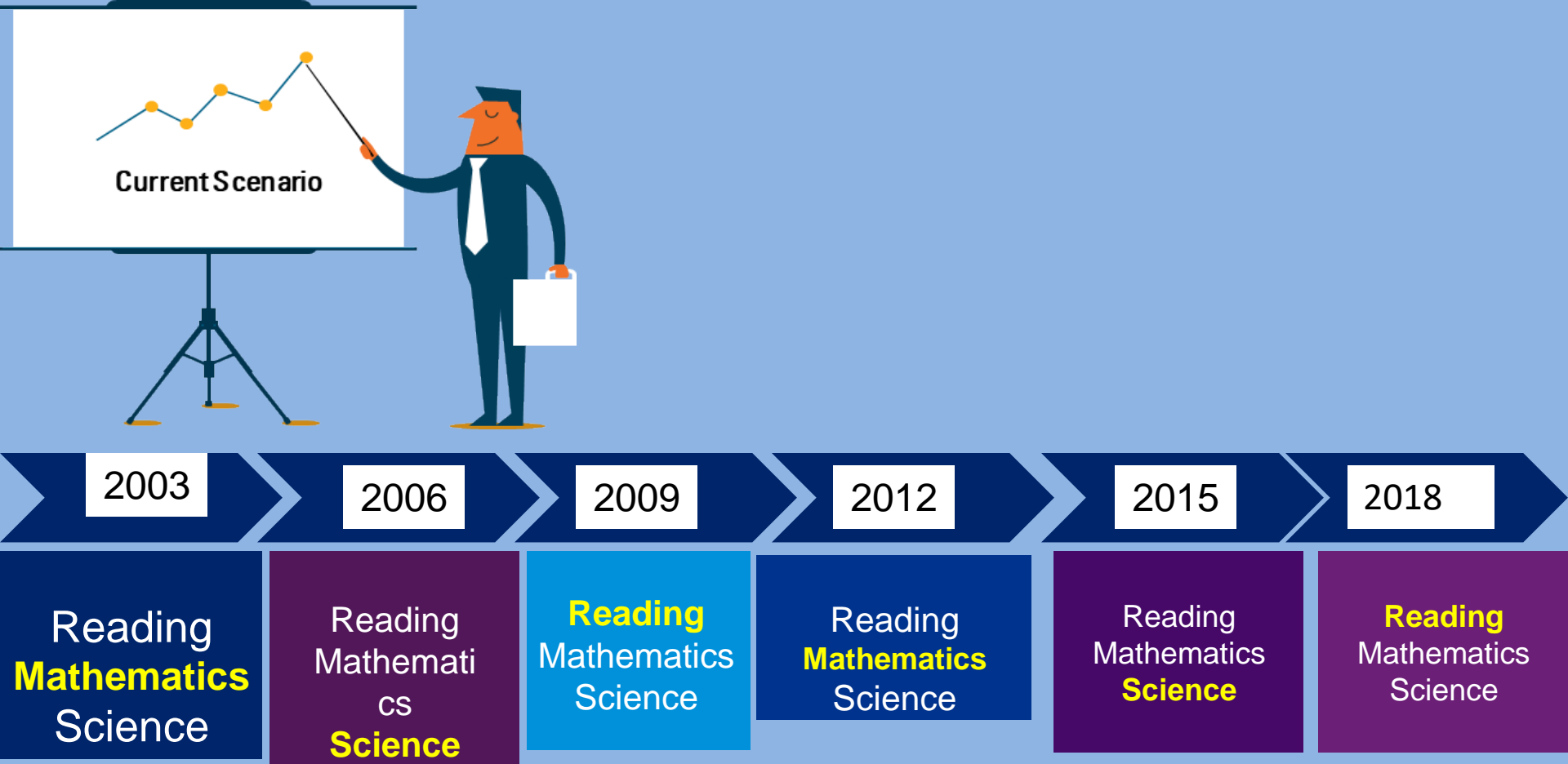


PISA is a global assessment that examines 15 year old students' ability to use cognitive skills in key subjects.

- ❑ **Organized by**-Organization for Economic Cooperation & Development (OECD)
- ❑ **Subjects Assessed** – (1)Reading Literacy (2)Mathematical Literacy (3)Science Literacy and (4)An innovative domain
- ❑ **Frequency** -Test happens every 3 years. About 90 countries from all over the world participate in this assessment
- ❑ **Purpose** –
 - ❑ To assess the preparedness of students for Global Economy
 - ❑ To utilize the results of PISA in introducing evidence based reforms in the Indian education system

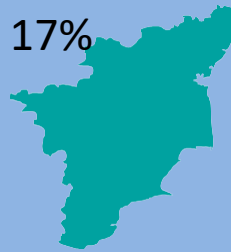


- PISA tests 3 core domains and 1 innovative domain in each assessment cycle (3 years)
- PISA 2021 will have Mathematical Literacy as the core domain and Creative Thinking as the innovative domain

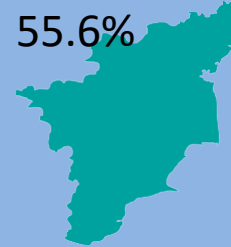


FINDINGS

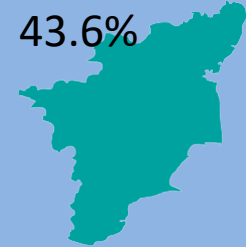
Tamil Nadu
(rank 72 out of 74)



READING

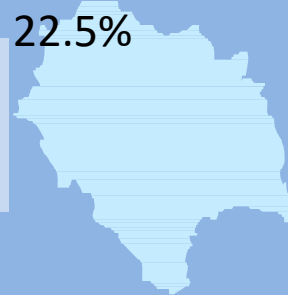


MATH

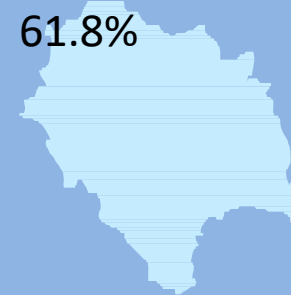


SCIENCE

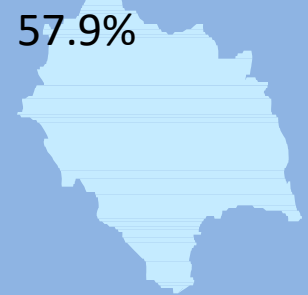
Himachal Pradesh
(rank 73 out of 74)



22.5%



61.8%



57.9%

**Percentage of students below basic
proficiency levels**

SLATE Assessments

Objective

Students' Learning Attainment and Teachers' Effectiveness (SLATE) to assess student learning levels and teacher effectiveness in Grades III, V and VIII in 25 regions, and get feedback for future planning

Salient points

- ~3,00,000 students were assessed
- 10,17,598 assessments collected in English, Environmental Science, Mathematics, Science and Social Science
- Question papers prepared and analysis conducted by independent agency
- 25% questions easy , 50% average and 25% difficult

Use cases for PISA preparation

CBT findings* conducted by KPMG appear to indicate similar trends as those emerged from SLATE assessment review. The question paper intent matrix in both cases had similar difficulty weightages. Performance levels tagged with scores

1. Less than 35%
2. 36% to 50%
3. 51% to 70%
4. More than 70%

*The CBT analysis in keeping with PISA framework had a 6-point scale proficiency level tagging of performance

- Ernakulum region overall best performing region
- Very few students scored above 70% overall
- Class VIII average (e.g.)
Science: 75% students less than 50%.*Eng.*: 58% students less than 50% *Math*: 53% students less than 50%
- Overall average performance of classes decreased from III to VIII
- Science came out to be the weakest area at upper primary

Lacunae in KVS Assessment

KVS assessments are designed focusing on LOTS testing. Use of knowledge in real life situations is not adequately assessed

Assessments do not have any direct impact on subsequent classroom practices, and hence lack integration with the teaching learning process

Assessment results are used as assessments **of** learning than assessments **for** learning.

Marking of assessments does not adhere to any standardized parameters of evaluation.

Question papers till class 8 are prepared internally and do not reflect a common standard of testing. Apart from SLATE no other standardised assessments undertaken

KPMG--KEY INSIGHTS AFTER ACADEMIC DATA ANALYSIS

- 1. Average marks on the lower side (less than 50-60)**
- 2. Consistent decline in average scores from 2016 to 2018 across all grades**
- 3. Rate of decline for English not as sharp as that for Math and Science**
- 4. ENGLISH > SCIENCE > MATH**
- 5. Class 8 > Class 7 > Class 9**
- 6. Top performing regions : Ernakulum, Gurugram, and Bhubaneswar**
- 7. Low performing regions in Math: Delhi, Guwahati, and Dehradun**
- 8. Low performing regions in English and Science: Tinsukia, Dehradun, and Bhopal**
- 9. Low standard deviation: Silchar, Chandigarh, Gurugram, and Delhi**

Decoding Classroom Practices

Teaching Content And Methodology

- **60%** of the teachers began the class with a warm-up exercises
- **30%** of the teachers closed the lesson with some intriguing questions for encouraging critical thinking among the students.
- **72%** teachers drew parallels to previous knowledge and experience of students
- **75%** of the teachers were observed using real life examples
- About **57%** of the teachers used lecture / monologue method of teaching
- **43%** classes were participative in nature.
- **90%** of the teachers taught the concepts sequentially from simple to complex.
- **60%** of the teachers were found to be using relevant teaching methods, aids, materials and techniques to teach the topic
- **85%** of the teachers motivated the students to participate, only **48%** of classes saw students interested in asking questions
- **66%** teachers moved around the classroom to ensure students were attentive and meaningfully engaged
- **86%** teachers also used appropriate non-verbal gestures to communicate

- **Only 45%** teachers used a variety of effective methods to check for understanding, answered students' queries and clarified concepts.
- **31% questions** given for homework were application-based and creative.
- **In 43% of classrooms observed**, the writing activity was largely cantered on copying from the blackboard and taking dictation from teachers
- **In 48% of classrooms** observed the reading activity was limited to reading from the textbook

Learning
confirmation

Student
engagement



Reading Literacy Proficiency Analysis

VII	VIII	IX
LEVEL 1 49.8 %	LEVEL 1 30.8%	LEVEL 1 24.6%
LEVEL 2 17.2%	LEVEL 2 11.8%	LEVEL 2 30.4%
LEVEL 3 3.0%	LEVEL 3 11.6%	LEVEL 3 32.4%
LEVEL 4 0.8%	LEVEL 4 26.6%	LEVEL 4 0.7%
LEVEL 5 22.3%	LEVEL 5 14.4%	LEVEL 5 2.1%
LEVEL 6 3.9%	LEVEL 6 1.5%	LEVEL 6 5.9%

KEY INSIGHTS

1. 58% students below proficiency level 2
2. In class 7, Around 67% students have proficiency levels 2 or below
3. In class 8, almost an equal number of students are at proficiency level 1 and level 4
4. In class 9, Around 25% of students are at level 1 – considerable improvement from Mathematical Literacy and Scientific Literacy proficiency levels
5. Class 9 > class 7 > class 8

Reading Literacy: Cognitive Process Analysis

- 1. Class 7, strong cognitive process is access & retrieve information, weak cognitive process is reflect and evaluate on the content and form of the text**
- 2. Class 8, strong competency is integrate and interpret , weak cognitive process is reflect and evaluate on the content and form of the text**
- 3. Student performance drastically drops as students move from class 8 to class 9 across cognitive processes reflect and evaluate and access and retrieve**

Reading Literacy: Text Type Analysis

KEY INSIGHTS

Class 7- Around 90% of students were comfortable in answering less than half the answers across description, instruction, and narration text types

2. **Class 8-** Less than 1% of students were able to answers questions revolving around Reflect and Evaluate- Content of Text & Narration and Form of text & Exposition

3. **Student performance is the lowest in class 9 compared to class 7 and class 8 across other text types i.e. exposition and narration**

Learning outcomes are not shared with students despite meticulous preparation and documentation of the same by teachers in their teacher diaries

Prevalence of rote learning methods, with teacher-centric classrooms despite acknowledgement by teachers of the importance of participative mode of teaching- learning

Inadequate facilitation of academic interaction among students, thereby losing a critical platform of peer and enhanced learning.

KEY CHANGES NEEDED IN CLASSROOM PRACTICE

Static seating arrangement of students in the classroom, obstructing student engagement.

High Pupil teacher ratio: time spent in disciplining students

Classroom teaching primarily based on reading, rephrasing and reproducing textbook information rather than approaching and building on a concept with constant inputs from students.

Summary of Key Areas of Improvement

Academic Performance

- Consistent decline in performance from 2016 to 2018
- Average marks on the lower side (50 -60%) range
- 70% of students in class 9 at proficiency level 1 in math
- Class 8 > class 7 > class 9
- ENGLISH > SCIENCE > MATH

Classroom Practice

- No sharing of learning outcomes at the start of class
- Prevalence of teacher centric classrooms
- Static seating arrangement: difficulty in group work
- Classroom teaching primarily based on reading, rephrasing and reproducing textbook
- High Pupil teacher ratio: time spent in disciplining students

Summary Of Key Areas Of Improvement

Capacity Building

- **Variance and lack of consistency:** Training & trainer
- **No mechanism to measure effectiveness of training in CP**
- **No platform:** Track of teacher wise training record + knowledge sharing
- **Need for peer to peer feedback and external consultation**
- **Focused training design:** based on robust TNA

Assessments

- **Need for integration with Teaching Learning process**
- **Data analytics of student learning levels**
- **Standardized assessment for evidence based decision making**
- **Textbook based familiar situations**
- **Low level of proficiency tested – applied rote**

Recommendations

Education is beyond the 3 'R's

Reforming Classroom Practice-

- ✓ Reviewing Learning Outcomes
- ✓ Early reading and whole language approach for academic proficiency
- ✓ Flexible seating arrangements conducive to diverse learning methods
- ✓ Micro Strategies for catch-up and learning confirmation – standardised
- ✓ Remediation strategies standardised
- ✓ Increasing student engagement
- ✓ Shift from Didactic and teacher centric to participative and student centric

Re-casting Continuous Professional Development

- ✓ To share external professional development sessions with teachers regularly
- ✓ To undertake peer observation visits
- ✓ Regular and continuous feedback system post trainings

Continued

Reframing Assessment Design

- ✓ **Question bank/ test items**

With greater focus on weak areas identified in CBT, critical thinking, unfamiliar situations, current affairs, etc.

- ✓ **Documentation**

- ✓ **Assessment framework** -- Inform in line with the PISA framework

- ✓ **Centralised tests + teacher based assessments**

Common standards and patterns of evaluation for both formative and summative assessments

- ✓ **Data analytics** - School level analysis of cumulative and individual learning levels

- ✓ **Mandatory meeting**

Meeting of teachers post analytics to draw up an improvement plan in classroom pedagogy & weak areas of students

Re-orienting innovative initiatives

Streamlining Existing Initiatives for PISA Preparation

Back to basics

Focus on cross curricular linkages and collaborative teaching in the sessions

BaLA

Sun boards depicting interesting real world scenarios

Common Minimum Program & EQUIP

Sharing best practices of TLM development and application

E-Classroom

Effective use of e-classrooms for interactive learning

KANT Learning

Questions based on critical thinking and analytical ability

Shala Darpan

Use of quality data to inform strategy and policy decisions



Reading Literacy Framework : Objective

1. To improve performance of students at each proficiency level of reading literacy
2. To increase student awareness and engagement with various text formats and types
3. To equip students to comprehend, interpret, analyse, and evaluate any given text
4. To equip students to acquire and enhance reading skills for application in academic disciplines and real-life situations

Reading Progression

Beginning of academic session
PL1
Retrieve information
Familiar text
LOTS

MOTS

Progression of academic session
PL6
Critically read & evaluate
Unfamiliar text
HOTS

Reading Period

30 Minutes - 2 periods a week

Class Teacher / designated teacher

Standardised Text for each period

Quiz, role plays, simulations etc to assess skills associated skills

Lexical knowledge, grammatical structures, and listening, speaking, reading and writing skills

Reading Lists

Defined reading list for the whole academic session: news articles, excerpts from novels, essays and encyclopedia, posters, forms

One Assigned reading novel beyond the reading period one a year to monitor progress & understanding

Pre-selected varied text formats
Charts, maps, tables, graphs,
pictorial representations,

Reading Range

Reading Bank to be populated with text formats, types and situational contexts, identified by the RL content team

Formats: Continuous, non-continuous, mixed and multiple

Types: Exposition, narration, instruction and description

Situation: personal, public, educational and occupational contexts

Reading Proficiency

Access and retrieve information

Form a broad understanding

Integrate information across two or more texts

Continuous assessment: quizzes, textual analysis tasks, writing exercises based on the text etc

Reflect and evaluate on the form and content of the text

Each reading text shall be accompanied by a set of activities mapped on to different reading literacy skills and competencies

Reading Confirmation

Reading confirmation task at end of every term

Students evaluate 1-2 texts from the reading list and prepare an evaluation report

Evaluation report to have reflection on content, form, strengths, weaknesses, commentary on elements of text (characters, events etc)

Evaluation report to position student as the author of the text and to have a brief component on what the student would have written differently as author of the text