DEISPI

Dynamic (and decentralised) Education Information
System for Planning & Improvement

A PRAGYA solution for schools in marginalised districts

USER MANUAL

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INTRODUCTION

This manual has been prepared by Pragya (www.pragya.org), a not-for-profit, development organization, working for the appropriate development of the vulnerable communities and sensitive ecosystems of the world.

The Tribal / Border / Hilly / Forested districts of India are characterized by remoteness, distance from administrative centres, weak infrastructure and often prove to be the toughest challenges towards achieving education goals in India. While most children are now attending schools, how many of them are empowered by the education they receive to take up more meaningful roles for the communities? The primary education that the children receive in their formative years, how appropriate is it and how student friendly are the modes of instructions?

Pragya has long experience of working in some of the remotest and most marginalized regions. It has come up with seeks an area-specific, cost-effective, community-based system of monitoring and generation of education data - DEISPI. The system generates data on 3 dimensions – student reading levels, instruction quality and school operations. Student Committees, Village Education Committees, Parent Teacher Associations and Barefoot Monitors (local youth) are trained to collect the data. This data is then analyzed and used to guide area-specific planning, as well as school/teacher/student-specific improvement actions.

DEISPI is being piloted across 330 schools in 11 districts in India. Education experts from 135 districts have helped in designing the system.

WHY "DEISPI"?

DEISPI helps to:

- Continuously generate and analyze data on Literacy, Cognitive, Numerical and Social/Emotional skills of each student at the primary level (Grade 1-5) to understand the gaps in children's learning through quick and easy methods.
- Evaluate instructional quality of each teacher to understand the areas of shortcomings and provide inputs for their professional development.
- Measure effectiveness of school operations and management to suggest measures for improvement.

The simplified process will help identify specific factors of slow learning, inadequate reading skills, poor instructional quality and improper school management. Peer-to-peer problem solving through 'education dialogues' would help improve quality of education.

WHO ARE INVOLVED?

The people involved in the process are:

Change Makers

Students
Grade 1 to Grade 5

Role: Participate in Student Development Assessment; Give feedback on Instruction Quality of teachers

Teachers
Teachers & para-teachers

Role: Assess students with help of given tools; Act upon feedback received on instruction quality to improve

VEC/SMC
All members of committee

Role: Assess teachers in discussion with students; Participate in School Operations Assessment; Act upon feedback received

BFMs
Local educated youth

Role: Assess School Operations with help of given tools; Collect and deliver all assessment data to Resource Centre

RCT
Local enthusiasts/change makers

Role: Supervise data analysis; Give feedback to schools; Advocate with district govt functionaries

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VEC – Village Education Committee / SMC – School Management Committee
BFM – Barefoot Monitors
RCT - Reading Challenge Team

- **Students:** All students of participating schools from Grade 1 to Grade 5 will be participating in DEISPI.

Role:
- Cooperate in filling up profile details (including name, date of birth, details of guardians, etc)
- Take part in DEISPI assessment for Student Development.
- If selected as a member of student committee, give feedback on instructional quality of teacher to the VEC/SMC member conducting the assessment.

- **Teachers:** All teachers involved in teaching Grade 1 to Grade 5 will be identified to carry out the student development assessments. The teachers will in turn be assessed for their instructional quality.

Role:
- Cooperate in filling up profile details (including name, date of joining, educational qualification, etc)
- Assess students using DEISPI assessment tools for Student Development. Submit the scores to Barefoot Monitor assigned for the school. Repeat the exercise every 3 months.
- If a member of the VEC/SMC, participate in the assessment for School Operations & Management.
- Accept feedback received in a positive manner and take necessary steps to improve quality of teaching.

- **Village Education Committee (VEC)/ School Management Committee (SMC)/ Parent Teacher Association (PTA):** The SMCs composition is: 75%-parents or guardians. Remaining 25% comprise 1/3rd elected members of local authority, 1/3rd teachers and 1/3rd local educationists. This group of individuals will supervise the assessment of the teachers by the student committee and handing it over to the Barefoot Monitor. They would also be involved in assessment of the school operations and management.

Role:
- Cooperate in filling up profile details (including name, contact details, etc)
- Assess instructional quality of teachers in discussion with students using DEISPI assessment tools and submit the scores to Barefoot Monitor assigned for the school. Repeat the exercise every 3 months.
- Participate in the assessment for School Operations & Management to be conducted by the Barefoot Monitor.
- Accept feedback received in a positive manner and take necessary steps to improve school operations.

- **Barefoot Monitors (BFMs):** BFMs comprise the motivated and educated youth of villages. There will be 1 Barefoot Monitor assigned to each participating school. They will be responsible in conducting the assessment of the school operations and management. They will collect all other assessment results (i.e. student development scores from teachers and instructional quality assessment from the respective people and deliver all of them to the designated Resource Centre for each district.

Role:
- Cooperate in filling up profile details (including name, educational qualification, etc)
- Conduct assessment for School Operations & Management using DEISPI assessment tools. Repeat the exercise every 3 months.
- Collect 3 sets of forms (Student Development Assessment, Instructional Quality Assessment and School Operations & Management Assessment) and deliver them to the Resource Centre assigned for the district.
- Participate during feedback sessions at village level and district level.

- **Reading Challenge Team (RCT):** There will be a 10 member RCT assigned for each district. They would comprise educated, motivated individuals who would enter/ supervise entry of all the data into the DEISPI

database at the resource centre. They will communicate the findings to the State Departments and also send the appropriate feedback back to the schools and villages.

Role:
- Cooperate in filling up profile details (including name, occupation, educational qualification, etc)
- Supervise data entry and analysis for all participating schools in the district.
- Provide feedback to schools and state departments based on analysis.
- Organise and participate in district level events for advocating necessary changes.

HOW DOES "DEISPI" WORK?

STEP 1 - ASSESSMENT

Data is collected on profile of participating school, students and teachers. This is followed by assessment of Student Development (by teachers), assessment of Instructional Quality (by VEC/SMC based on feedback from the student committee) and School Operations (by Barefoot Monitor appointed for the particular school in discussion with VEC/SMC). All data is collected quarterly (every 3 months) and the Barefoot Monitor is responsible to reach the data to Resource Centre designated for the district.

STEP 2 - ANALYSIS

Data is entered into simplified DEISPI software and stored at Resource Centres. The software generates results that indicate performance levels. The Reading Challenge Team (RCT) at the district level supervises the data input and analysis process.
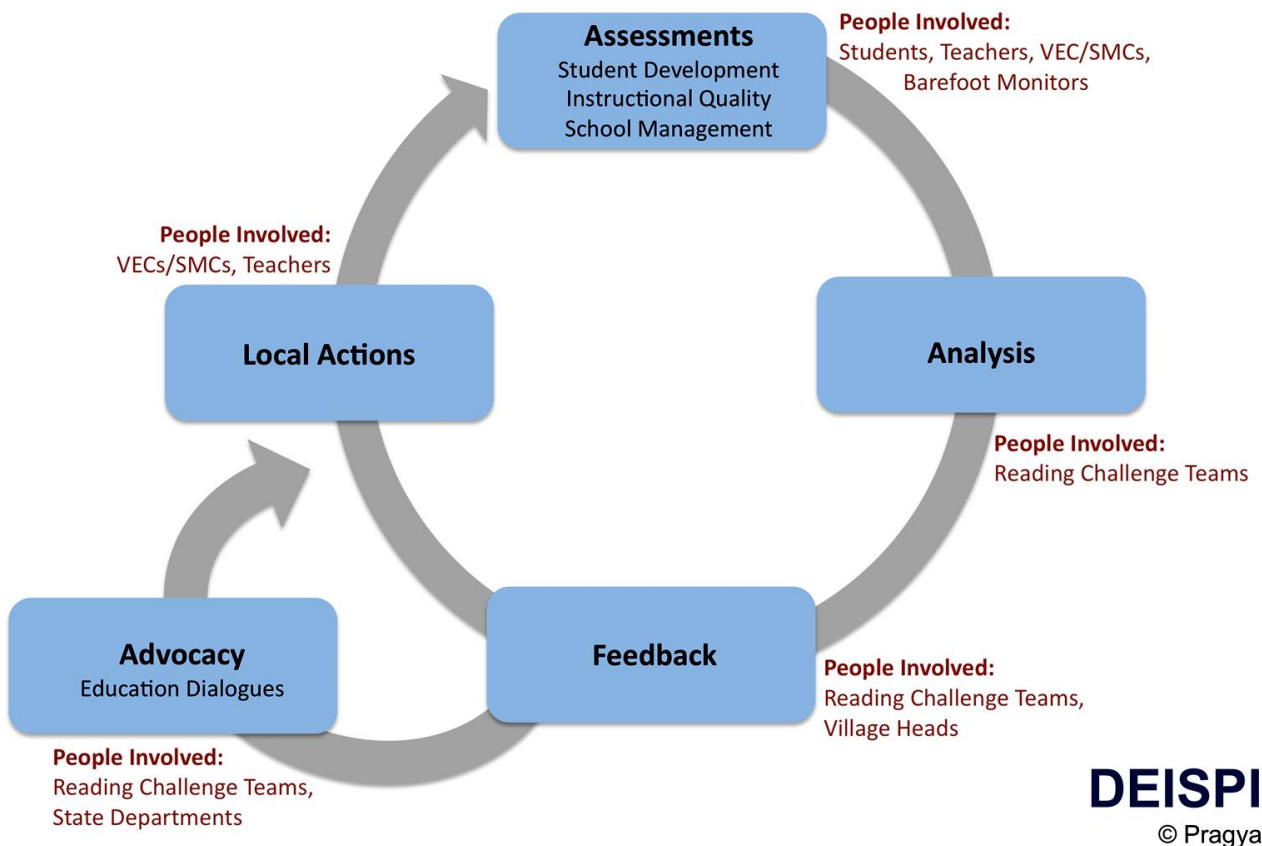
STEP 3 - FEEDBACK & ADVOCACY

The results are used to send appropriate feedback for school and uses them for advocacy/dialogues with state departments. Village level meetings would discuss the actions for improvement. Annual district level "Education Dialogues" would be held for experience sharing and improvement planning for all schools.

STEP 4 - LOCAL ACTIONS

The local level improvement actions are undertaken by VECs/SMCs and teachers based on feedback. District level actions initiated by RCTs and the state departments could also contribute towards improving learning levels and instructional quality along with improved school management.

The process is summarised with the help of the diagram:

Assessments
Student Development
Instructional Quality
School Management

People Involved:
Students, Teachers, VEC/SMCs,
Barefoot Monitors

People Involved:
VECs/SMCs, Teachers

Local Actions

Analysis

People Involved:
Reading Challenge Teams

Advocacy
Education Dialogues

Feedback

People Involved:
Reading Challenge Teams,
Village Heads

People Involved:
Reading Challenge Teams,
State Departments

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WHAT ARE WE MEASURING?

Student Development Assessment

Frequency:	Every quarter (every 3 months)
Conducted by:	Teachers
Delivered to Resource Centre by:	Barefoot Monitors
Analysed by:	Reading Challenge Team, using DEISPI tool
Feedback process:	Communications to VEC/SMC by Reading Challenge Team; VEC/SMC members communicate relevant feedback to students, teachers and the parents

Guidelines:

- The teachers will conduct these student assessments. The teachers will receive the assessment sheets and the questionnaires for the respective grades.
- Students from Grade 1 to Grade 5 will be assessed on their knowledge of the basic learning level of the previous grade.
- The time required for each assessment is mentioned on the questionnaire and the assessment sheet. The teacher must strictly adhere to the time frame.
- Once all the assessments are done, the teacher will do the scoring according to the norms mentioned and will deduce the final score for each assessment for each student.
- All the score sheets will then be handed over to the Barefoot Monitor assigned to the school.

This comprehensive assessment will include parameters to assess the students on their:

1. Basic Literacy Skills
2. Basic Numeracy Skills
3. Basic Cognitive Skills
4. Behavioral Development

The tables below show a brief summary of the parameters that will be assessed for each grade. Please refer to the assessment formats for further details.

Basic Literacy Skills Assessment

Grade 1

Parameter Assessed	Example
Letter name knowledge	**Letter name knowledge** Task:Recognize at least 10 alphabets from 50 random alphabets (Mixture of small and capital letters).
Phonemic awareness	
Familiar word reading	
Non-familiar word reading	

Grade 2

Parameter Assessed	Example
Phonemic awareness	**Non-familiar word reading** Task:Read at least 5 non-familiar words from the list of 20 non-familiar words (four letter words).
Familiar word reading	
Non-familiar word reading	
Non-familiar word reading	
Dictation	
Listening comprehension	

Grade 3

Parameter Assessed	Example
Phonemic awareness	**Dictation** Task:Write at least 5 words through a dictation exercise of 10 words (three letter words).
Familiar word reading	
Non-familiar word reading	
Read sentences	
Dictation	
Listening comprehension	

Grade 4

Parameter Assessed	Example
Oral reading fluency	**Listening comprehension** Task:Ask five simple questions (literal and inferential) about the text the enumerator reads to them
Reading comprehension	
Listening comprehension	
Dictation	

Grade 5

Parameter Assessed	Example
Oral reading fluency	
Reading comprehension	**Oral reading fluency**
Listening comprehension	Task:Read a paragraph of four to five sentences.
Dictation	

Basic Numeracy Skills Assessment

Grade 1

Parameter Assessed	Example
Oral counting (1-10)	**Oral counting**
Number identification (0–10)	Task: Ask the student to recite numbers from 1 to 10.
Quantity discrimination	
Missing number	

Grade 2

Parameter Assessed	Example
Number recognition (1-100)	
Missing number	**Missing number**
Addition	Task: Give a list of 5 arithmetic series with 4 numbers each.
Subtraction	Remove one of the numbers and ask the students to identify
Discrimination of objects on shape and size	the missing number.

Grade 3

Parameter Assessed	Example
Number identification (0-99)	
Number discrimination	
Addition	**Number identification (0-99)**
Subtraction	Task: The ability to read and write numbers up to 99
Identification of 2-dimensional shapes	
Mental Arithmetic	

Grade 4

Parameter Assessed	Example
Number identification (0-1000)	
Number discrimination	
Addition and Subtraction (Word problems)	**Number discrimination**
Multiplication	Task: Give 5 sets of 3 random digits. The students have to
Properties of 2-dimensional shapes	form the greatest number and the smallest number formed
Mental Arithmetic	from the 3 digits for all the sets.
Measurement (length of objects)	

Grade 5

Parameter Assessed	Example
Multiplication	**Drawing of a measured 2-dimensional shape**
Division	Task: Give the student measurements of 1 radius and 2
Fractional numbers	diameters of a circle. Ask the student to draw 3 circles using
Drawing of a measured 2-dimensional	these measurements with the help of a compass.

shape
Mental arithmetic
Measurement (length, weight, volume)

Basic Cognitive Skills

The basic cognitive or thinking skills of all the students from Grade 1 to Grade 5 will be assessed on the following 4 skill sets. However, the questions that will be asked will vary and be grade appropriate.

Skills Assessed	Example
Remembering	**Applying (Grade 5)**
Understanding	<u>Task:</u> Show a picture of a square or a rectangle. Ask the
Applying	student how it can be cut into 4 equal parts.
Analyzing	

Behavioral Development

This assessment will grade the primary grade students on their social and development skills and emotional maturity. All the students from Grade 1 to Grade 5 will be assessed on the same parameters with the same questionnaire. The table below shows a brief summary of the parameters that will be assessed in the 2 categories.

Social and Development skills	Emotional Maturity
General social competence	Social and helpful behavior
Responsibility and respect	Hyperactivity and short attention span
Attitude towards teachers	Anxiety and fear
Attitude towards classmates	Aggressive behavior
Learning methods	Effective communication
Eagerness to explore new things	Management of emotions

The assessment modules with the detailed parameters and scoring and the questionnaires for all the grades and all skills sets are provided in **Volume 2** of this manual.

Instructional Quality Assessment

Frequency:	Every quarter (every 3 months)
Conducted by:	VEC/SMC through feedback from Students Committee
Delivered to Resource Centre by:	Barefoot Monitors
Analysed by:	Reading Challenge Team, using DEISPI tool
Feedback process:	Communications to VEC/SMC by Reading Challenge Team; VEC/SMC members communicate relevant feedback to the teachers

Guidelines:
- The instructional quality will be assessed for each teacher to understand the teacher's abilities, strengths and weaknesses and provide targeted inputs to facilitate their professional development based on individual training needs.
- Teachers will be assessed every 3 months.

- The VEC/SMC will be given the assessment sheets and the questionnaires in accordance with the number of teachers to be assessed.
- VEC/SMC members would conduct the assessment with feedback from the Student Committee. Once the questionnaire is filled out they will do the final scoring according to the norms and assign a final score to each teacher.
- All the score sheets will then be handed over to the Barefoot Monitor assigned to the school.

This comprehensive assessment will assess the teachers on the following parameters:
1. Positive learning environment
2. Content knowledge
3. Instructional clarity
4. Use of student assessment data to modify and analyze instruction
5. Collaborating and communicating with parents and community

	Parameter Assessed
Positive learning environment	Students feel that teachers care about them, and they have a sense of positive affiliation and belonging
	Good rapport and respect exists in the classroom environment
	Teachers are able to see students as active participants/ active learners and not merely as passive recipients of knowledge
	Proper management of time and delivery of good instruction tine
	Use of creative instruction medium through multi-media, visual aids, field trips and various other innovative methods
	Necessary learning aids and tools are adequately present in classrooms, easily accessible to teachers and students
	Teachers are sensitive to culture, gender, intellectual and physical differences in the classroom and communicates accordingly
	Ability to regulate the classroom etiquette and behavior
	Teachers encourage students to think deeper and to initiate questions. Using questioning and discussion techniques
Content Knowledge	Subject knowledge and academic language
	Understanding of pedagogical content knowledge that is required to make the subject understandable and meaningful for all learners
	Ability to engage students in subject matter
Instructional clarity	Teachers communicate goals, tasks and lesson content clearly
	Teachers are able to communicate ideas and instructions in simple and effective ways. Making instructions more stimulating, interesting and relevant for the students
	Teachers present information in an organized manner with smooth transitioning of lessons
	Identifying and meeting the needs of every student, and delivering instruction accordingly
	Paraphrasing, revision of topics and clarification of doubts at the end of the class
	Teachers are able to encourage and engage all students to actively participate in classroom activities and discussions
Use of student assessment data to modify and analyze instruction	Effective use of assessment
	Assessment data to improve learning
	Effective instruction on individual/ class learning
	Communication of student progress and maintaining records
Collaborating &	Maintaining accurate records of students

| communicating with parents & community | Communication within the school community about student's growth |
| | Communicating progress and growth of student with the family |

The assessment sheets with the detailed parameters and scoring and the questionnaires for all the teachers will be provided with this manual.

School Operations & Management Assessment

Frequency:	Every quarter (every 3 months)
Conducted by:	Barefoot Monitors with feedback from VEC/SMC
Delivered to Resource Centre by:	Barefoot Monitors
Analysed by:	Reading Challenge Team, using DEISPI tool
Feedback process:	Communications to VEC/SMC by Reading Challenge Team

Guidelines:
- School operations and management effectiveness will be assessed and measured, to reveal correctives that may be called for infrastructural quality, facilities, availability of teaching aids, teacher effectiveness etc.
- The monitoring of schools will document quality of services, infrastructure, governance and management of resources of schools, and highlight the gaps at the institutional level to be met through improved supervision/ resources.
- The Barefoot Monitor assigned to the school will be provided with the assessment questionnaire.
- The BFM will have a meeting with members of the SMC including the school principal and fill out the questionnaire.
- Some of the parameters will be filled up by the BFM himself/herself based on his/her observations.
- Once the questionnaire is filled out the BFM will do the final scoring according to the norms. A final score will then be assigned to each school.
- All the score sheets will then be handed over to the RCT by the Barefoot Monitor assigned to the school.

This comprehensive assessment will be conducted on the following parameters:
1. Physical infrastructure
2. Human resource and systems
3. Teaching materials and aids
4. Extra-curricular activities
5. Assessment of School Management Committee (SMC)
6. Responsibility of school management towards Children With Special Needs (CWSN)

All the parameters on which the school operations and management quality of the school will be assessed are summarised below.

	Parameter Assessed
Physical Infrastructure	Classroom
	Drinking facilities
	Toilet facilities
	Electricity connection
	Medical room
	Library room
	Laboratory (Computer/ Science)
	Kitchen/ Mid day meal

	Staff room
	Auditorium/ Common/ Co-curricular/ Activity room
	School ground
Human Resource and Systems	Principal and teachers
	General and administrative staff
	Grievance redress mechanism
	Psychological support
	Other parameters to assess the efficacy of school operations
Teaching Materials & Aids	Mathematics and Science
	English/ Hindi/ Other official language
	Audio – visual equipment
Extra-curricular activities	Music, Dance and Drama
	Drawing, painting and craft
	Debates and extempore
	Poem and essay writing
	Outdoor sports
	Indoor games
Assessment of School Management Committee (SMC)	School management committee meetings
	Level of participation and engagement of members
	Composition, powers and accountability of SMC
	Other assessment parameters
Responsibility of school management towards Children With Special Needs (CWSN)	Presence of brail books, kits, hearing aids, braces, crutches and wheel chair
	Established networks with NGOs/ government schools for CWSN
	Presence of trained teachers and any kind of psychosocial support available to CWSN
	Presence of easy accessibility, alternative arrangements and regular monitoring and evaluation

USING THE DATA

Data storage and processing

- The Barefoot Monitor will pass on all assessment scores to the Reading Challenge Team (RCT).
- A Resource Centre equipped with computer and peripherals would be assigned for each district to house the DEISPI database/software.
- The recording of data for the quarterly assessments will be done at the Resource Centre.
- RCT will enter/supervise entry of the data into the database.
- The analytical result would be generated automatically by the software. The data would indicate the critical dimensions; for example, gender distribution of teachers and students; main areas of low instructional quality/school performance/student learning; location of school vis-à-vis students and teachers.
- The result would be used for feedback and advocacy. RCT members will highlight the areas that need to be worked upon and improved for different schools and the district as a whole.
- RCT members would send feedback to VECs/SMCs based on the results.
- Annual district-level workshops will be organised by RCTs to interact with the local education department and representatives of participating institutions to discuss challenges and solutions.

The data collected will give an insight into the following:

- Effectiveness of the curriculum,
- Learning outcomes,
- Development of student's cognitive skills,
- Listening abilities,
- Speaking abilities,
- Reading and writing skills,
- Comprehension skills,
- Numerical ability and
- An insight into the social and behavioral development of students.
- It will also give an insight on the quality of the teachers and their methods of instruction, the school operations,
- School infrastructure and facilities,
- Information about the involvement of the SMCs etc.

The Reading Challenge Team will play a key role in data assessment and sharing the same with community members, education department, local agencies and school authorities. The findings will be assessed from the perspective of **geographic**, **infrastructure**, **gender** and **socio-economic factors** to advocate for **area-specific** and **issue-specific planning**.

Area-specific planning takes into consideration the characteristics that are unique and exists in the area/eco system. It could include factors such as culture, working environment, climatic conditions, social attitude, perceptions etc. An example of area-specific planning is drafting suggestions for SMC to create conducive (culture-sensitive) learning environment within a school and build a good rapport between teachers and students.

Issue-specific planning takes into consideration certain attributes and situations that are individualistic/intrinsic in nature. It can be applied to a person, an institution or any structure. An example of issue-specific planning is drafting suggestions for school management to address lack of aids/alternative arrangements for Children With Special Needs (CWSN).

It must be noted that both types of planning are inter-linked with each other.

Cited below are some examples of interventions by RCT in data utilization and advocacy under specific dimensions:

1. *Geographic*:
   - Scenario: The distance between the children's place of residence and school location will be recorded in the student's profile.
   - Deduction: Students living farthest from schools in blocks and having high absenteeism will suggest that geographic conditions play an importance factor in access to quality education.
   - Action: Suggesting school management for provision of transport facilities; liaising with district administration for establishing more schools in shorter distances.

2. *Socio-economic*:
   - Scenario: Low scores of students' response to teachers' sensitivity to different culture, gender, intellectual and physical differences
   - Deduction: Teachers are not trained to be culturally sensitive towards students; they are not given orientation, in-service and refresher course training by government. It could be due to lack of funds and lack of interest in government authorities to provide training courses
   - Action: Suggest DIET[1] to organize regular training sessions to be provided to teachers.

3. *Infrastructure*:
   - Scenario: Low scores on classroom availability and condition, electricity facilities etc.
   - Deduction: The School Management Committee is ineffective in solving operational issues within the premises and holding local government authorities accountable to demand funds.
   - Action: The SMC must have regular meetings to develop and implement school development plan based on a prepared budget.

4. *Gender*:
   - Scenario: Low enrollment of female students and teachers
   - Deduction: Distance may be a barrier for female students attending school and for teachers taking up teaching positions. It could also be because of parents' attitude/perception that girls need to be at home and assist in household chores
   - Action: Intervention through SMCs/PTAs by holding discussions with parents to sensitize them towards educating girl children. Gender-sensitive approach among district/state level officers while deciding on female teachers' postings.

ANNEXURE

GLOSSARY OF ABBREVIATIONS USED

- DEISPI – Dynamic (and decentralized) Education Information System for Planning and Improvement
- TBHF – Tribal/Border/Hilly/Forested
- TLM – Teaching and Learning Method
- TLA – Teaching and Learning Aid
- BFM – Barefoot Monitor
- SC – Student Committee
- RCT – Reading Challenge Team
- VEC – Village Education Committee
- SMC – School Management Committee
- PTA – Parent Teacher Association
- SDA – Student Development Assessment
- CWSN – Children With Special Needs
- RTE – Right To Education
- NGO – Non Governmental Organization

SAMPLE OF A STUDENT'S OVERALL PERFORMANCE - AS INDICATED BY DEISPI TOOL

		Scores
SECTION 1:	Basic Literacy Skills	7
SECTION 2:	Numeracy Skills	4
SECTION 3:	Cognitive Skills	6
SECTION 4(A):	Behavioural Development (Social and development skills)	4
SECTION 4(B):	Behavioural Development (Emotional maturity)	6
	Overall score:	5