

TO STUDY THE REASONS OF LOW PERFORMANCE IN THE NATIONAL ACHIEVEMENT SURVEY 2021 OF CLASS VIII STUDENTS WITH SPECIAL REFERENCE TO JHABUA DISTRICT OF MADHYA PRADESH

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National Achievement Survey (NAS) 2021 was held on 12 November 2021 at all India level. This survey aims to measure the level of learning and achievement nationwide at the district level. NAS-2021 was conducted for Classes III, V, VIII and X in different schools. In the present study, students of Class VIII of Jhabua district of Madhya Pradesh were chosen, which is a core tribal area with 41 per cent literacy rate. This district had a low level of performance in science subject in NAS-2021. As per the NAS-2021 results, in science only 11 per cent students were found to be at the proficient or above, which was below the state and national averages. On being analysed further, it was found that 55 per cent students scored below basic, 34 per cent students were in the basic, 11 per cent of them were proficient and only 1 per cent could reach the advanced level in the performance levels described for science learning in Class VIII. For the study, the researcher wanted to find out the reasons for low performance in science in Jhabua district. A survey method was a natural choice to understand the probable causal factors for low performance in science in the district.

Keywords: Achievement, Performance, Survey, Proficient, Scientific

Introduction

The Ministry of Education, Government of India, conducts the National Achievement Survey (NAS), a large-scale survey of student learning that is nationally representative. The efficacy of school education is discussed at the system level by NAS. Findings help in comparing performance throughout the population and across the spectrum to choose the most ideal course for changes. The National Achievement Survey was conducted on 12 November 2021. The Assessment Framework was created by the National

Council of Educational Research and Training (NCERT) to measure students' achievement in relation to learning objectives. The survey goes beyond a scorecard by including background data to connect students' performance on various learning outcomes with contextual variables. The sampling design for NAS-2021 aims to complement the previously established and accepted national assessment objectives. NAS-2021 also aims to give data on what children in India know and are capable of doing in important grades as mentioned in the learning outcomes at the national, state, district and school levels.

The survey tools used multiple test booklets with 50 questions in Classes III and V, 60 questions in Class VIII, 70 questions in Class X in Mathematics, language, sciences, environmental studies and social sciences. The competency-based test questions reflect the learning outcomes developed by NCERT. Questionnaires concerning the students, teachers and schools were used as well in addition to the test items. The results of the survey strongly inform education policy, planning and implementation at the national, state, district and classroom levels in order to raise students' learning levels and bring about qualitative changes.

Literature Review

'Science is predictions'. The Latin term *scientia*, which means knowledge, is the source of the English word 'science'. The word 'science' is widely used nowadays to refer to a way of gathering knowledge. A body of knowledge that can be rationally justified and consistently applied can also be referred to as science (Bhagat, 2018). For many years, students have been supported in understanding scientific principles and rules, formulating hypotheses and developing skills that are important in analysing and solving everyday problems through the study of science, which has long been regarded as one of the fundamental branches of the educational system (Ambag, 2018). Students' ability to grasp scientific facts, concepts and new information through experimental activities improves as a result of their development of scientific process knowledge and abilities, which also help them do better academically in school. However, one of the main difficulties today is the lack of progress

in the scientific sector. According to a study, elementary school students do not do well in national assessment which are competency based in science and social science (Bhaduri, 2017). Despite the increased efforts in scientific education to create competitive people, many students still lag behind, which has been linked to a number of reasons that have prevented them from meeting educational requirements.

A number of studies have been conducted on the issues of low performance in science subjects and the trend of performance in those subjects (Baumeister et al., 2003; Amponsah et al., 2018; Gustavsen, 2018; Majo, 2018). Some of these studies conducted by Dhurumraj (2013) and Heeralal and Dhurumraj (2016) examined the contributing factors to poor learner performance in physical sciences in KwaZulu-Natal province with particular reference to schools in the Pinetown District. Ambag (2018) reported lack of resources, the language of learning and teaching, the so-called 'scientific language' and the so-called 'scientific culture' are some of the factors affecting learner's performance.

In the National setting, based on a recent survey by Rabino (2014), about 46 per cent of fourth grade children achieved at or above the basic accomplishment level in science in 2015 and 38 per cent performed at or above the proficient level. According to the findings of the survey, students exhibited some basic science knowledge or demonstrated insufficient awareness of scientific concepts and foundational scientific facts. Further, he added that there are many constraints facing science education in Philippine schools that account for the low performance of the Filipino students, which include the lack of parental support and involvement, the inadequate teaching-learning

process, insufficient instructional materials and need for teacher training.

Alhadabi (2021) claims that a student's enthusiasm in science is a good indicator of their cognitive readiness for success in the sciences. The more a student's passion for science, the stronger is their commitment and drive to succeed, which might lead to academic achievement. According to Christidou (2011), having a competent scientific instructor may frequently have a favourable impact on a student's interest in the subject. As a result, creating a welcoming environment in the scientific classroom and encouraging student participation might affect their interest in and attitudes towards science (Bolshakova, Johnson and Czerniak, 2011; Hagiwara, Maulucci and Ramos, 2011).

Methodology

Survey method was adopted in the present study. The tools used were questionnaires for science teachers and headmasters, a classroom observation tool, interviews for students in group, interviews for parents. These tools were developed in a workshop made and field tested in two middle schools of Dewas, which were chosen from both rural and urban areas. After developing and testing tools, the same members, who attended the workshop, surveyed the schools of Jhabua district on 4–5 August 2022. Five schools of the district were visited and surveyed, of which two schools were from rural area and two government schools were from urban area and one was an aided private school. One school each from both the categories was chosen for NAS–2021.

Five different tools were developed for the survey. Teachers-students-parents are three factors, which make the main triangle of academics at any level. The functions and behaviour of teachers affect the development of learners and at the same time, parents are another important axis of academics. Therefore, it was decided in the present study that a tool should be developed for the teachers, who are teaching science. Thus, a questionnaire was developed for the teachers. The activities of the teachers are monitored and guided by the headmasters at the middle school level. Hence, another tool (questionnaire) was developed for the headmasters.

To study the entire problem, the classroom observation was necessary because the communication which takes place between the teacher and students in the classroom affects the learning. Therefore, an observation tool for classroom was developed. With the help of this tool, an effort was made to study the classroom activities and the use of practical materials like science kit and other related learning resources. To support the study further, the students of the school were probed in groups. No individual test or questionnaire was given to the students. Through this discussion, an effort was made to know the problems and obstacles faced by the learners. Parents are another important dimension of academics. In NAS–2021 survey, it was found that 58 per cent parents of Jhabua district help their wards in studies. This result made it compulsory that parents should be asked about their opinion. Therefore, a questionnaire was developed for parents as well.

All the tools were developed in Hindi language as it is a largely spoken language in Madhya Pradesh. The target mass for this study preferred Hindi along with the local dialects.

Data Analysis

Teachers' Perspective

Questionnaire for the teachers was developed to know the functions and behaviour of teachers that affect the development of the learners. Therefore, it was decided that a tool should be developed for the teachers who are teaching science to Class VIII students.

- When science teachers were asked about the teaching and academic material for science teaching, about 40 per cent of them were fully aware about the test papers, mock tests and YouTube video lectures and 25 per cent were partially aware about the material.

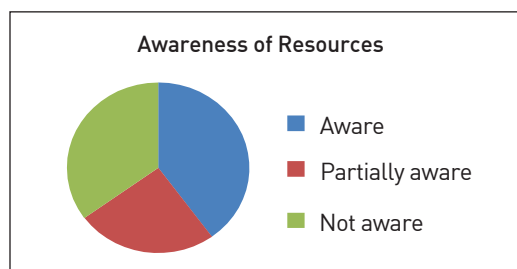


Fig. 1. Awareness of Resources

- Rajya Shiksha Kendra (RSK), Madhya Pradesh provided different materials such as weekly test papers, mock tests and video lectures for competency based assessment through social media. In the survey, it was found that this material was being used in only 49 per cent schools.

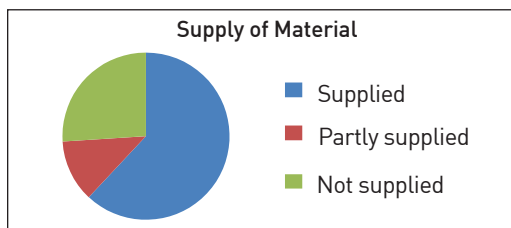


Fig. 2. Supply of Material

- When the teachers were asked about the mapping of the assessments prepared to learning outcomes, only 35 per cent of them worked on this area and 38 per cent teachers did it partly and the rest denied of doing so. Those who had done this mapping, agreed that the process helped them to pinpoint the concept easily.

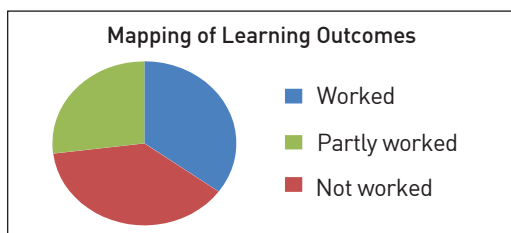


Fig. 3. Mapping of Learning Outcomes

- In response to a question related to the process of assessment after teaching certain concepts, almost all the teachers said that they conducted tests on a weekly and monthly basis.
- When they were asked about the projects assigned by them, almost 80 per cent of them had assigned different projects related to the syllabus. They exhibited some projects completed by the students.
- When asked about the availability of science kit, about 62 per cent teachers denied availability and use, especially in

rural areas. In urban area schools, the science kit is available and used by the teachers to explain various concepts.

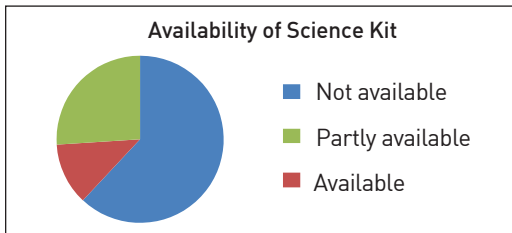


Fig. 4. Availability of Science Kit

- When the teachers were asked about learning resources and their uses, they put a long list of multiple learning resources. In response to this question, there was no significant difference between rural and urban schools. Even they referred various training sessions where they were told about the use of learning resources.
- When the science teachers were asked about the use of smartphones by their students for academic purposes, they explained that Jhabua district is a core tribal area, and almost all the students in government schools belonged to the low-income group strata. Therefore, mobile phones are their necessity, not a luxury. They reported that, in families of five to seven members, only the head of the family possesses a phone, which cannot be used by the young ones of the family. Moreover, when children do spend time on screens, social media, mobile games and cartoons attract them more than academic apps. In response to this question, teachers said that only 20–30 per cent students used this device for academic purposes, that too, occasionally.

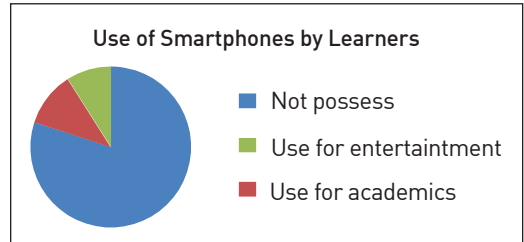


Fig. 5. Use of Smartphones by Learners

- When the teachers of science were asked about assessment of class or home work, they nodded positively and replied that the homework is assessed regularly and feedback is given as a corrective measure.
- In response to a question about whether the homework is assigned regularly, almost all the teachers replied positively.
- When they were asked about the regularity and level of attendance of the students in the schools, they replied that average level of attendance never reaches more than 60 per cent. In Jhabua district, people migrate in mid October and return in February or March. This exodus affected the regularity of students in the schools. Even then, about 70 per cent teachers replied that they made every possible effort to increase the level of attendance. About 35 per cent teachers said that they went in the evening to meet the parents.
- When the teachers were asked whether the achievement levels of the learners were discussed with the parents, about 75 per cent teachers answered that they informed the parents, but only 10 to 20 per cent parents pay attention

to this issue, as Jhabua district still has a literacy rate of only 43 per cent. As a result, the communication from teachers is insufficient to motivate parents to participate.

- In response to the question about lesson plan prepared by the teachers before entering the class, 65 per cent teachers either don't prepare lesson plan or prepare partly and classroom activities are conducted in arbitrary style.

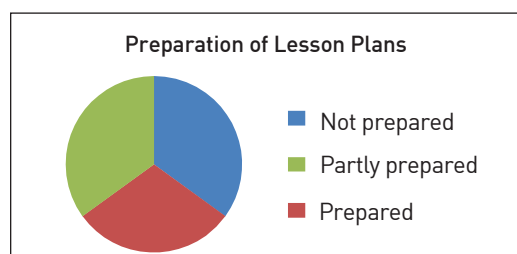


Fig. 6. Preparation of Lesson Plans

- When they were asked about the difficulties in teaching of science, about 50 per cent teachers replied that abstract concepts of science cannot be taught without visualisation and they don't have any audio-visual facilities, about 25 per cent teachers replied that Science Kit helps them a lot in this connection. Twenty-five per cent teachers could not recognise the difficulties in the teaching of science.
- When they were asked how they get help from cluster level when facing difficulties in teaching, about 75 per cent teachers accepted that the academic dialogues held at the cluster level are merely a formality and they do not get any positive address to the problems. During the visits of concerned officials once in a month

only administrative affairs are observed and academic activities are either ignored or not paid any attention.

Headmasters' Perspective

- When headmasters of the schools were asked about the availability of science teachers in their schools, 48 per cent of them replied that they had science teachers, out of which, half are guest faculty. In 15 per cent schools, Headmasters themselves are science teachers, whereas in rest of the 37 per cent schools, other subject teachers are teaching science.
- When headmasters were asked about the science class observation and its frequency, only 15 per cent of them answered (except those who are science teachers themselves) that they did observe the class once a month. Rest were not aware about the proceedings in the classroom of science.
- When headmasters were asked how they encourage the teachers of science to teach using different methods, seventy eight per cent of them nodded negatively. In fact, most of the teachers use only chalk and talk method involving writing the answers to the questions from the textbook on the board and the students copying the same.
- When headmasters were asked about the innovative activities to create interest among students in their schools, 65 per cent responded that it is done in the usual, traditional manner, whereas only 10 per cent responded

positively and rest 25 per cent replied that they are implementing it gradually.

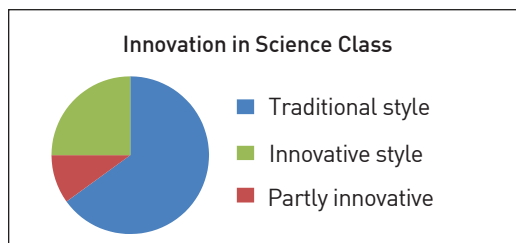


Fig. 7. Innovation in Science Class

- When headmasters were asked about the level of attendance of students in schools, they replied that the average level of attendance never reaches more than 60 per cent in rural area. In urban area, the level of attendance is better. Like teachers, headmasters also expressed concern about the migration of the population in the district which affected schooling.
- When they were asked about the objectives of the supplied materials like question banks, mock tests and weekly test papers, etc., from SCERT, 45 per cent of them responded that they knew about their objectives and usefulness, while about 25 per cent had a vague vision on this count. Thirty per cent were not at all aware of this.

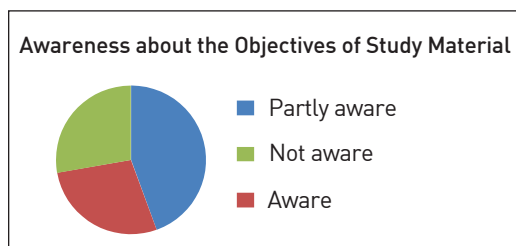


Fig. 8. Awareness about the Objectives of Study Material

- When they were asked that whether they discussed the progress of the students with their parents, only 15 to 18 per cent replied that they interacted twice a month, while 30 per cent interacted once a month but rest 50 to 55 per cent denied such activity.
- On the Learning Outcomes mapping with assessment prepared by teachers in their schools, 62 per cent replied negatively, while in 20 per cent schools, this was being done partly and only in 18 per cent, the teachers had started mapping Learning Outcomes to the assessment task.

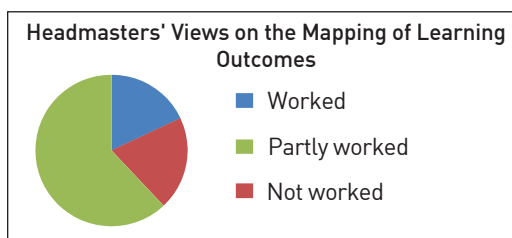


Fig. 9. Headmasters' Views on the Mapping of Learning Outcomes

- In response to the question of availability of books in their library related to science, 90 per cent headmasters had replied that they get only textbooks and that too are not supplied properly on time. Only 10 per cent schools from urban areas have a few books other than textbooks for children.
- When headmasters of the middle schools were asked to put their individual opinion to improve the quality of teaching of science:
 - (i) About 30 per cent of them asked for a regular teacher rather than guest teaching faculty.

- (ii) About 40 per cent of them wanted practical resource material, which can be demonstrated in the class.
- (iii) About 12 per cent proposed a specific training for the teachers.
- (iv) Rest had mixed and miscellaneous opinion in this regard.

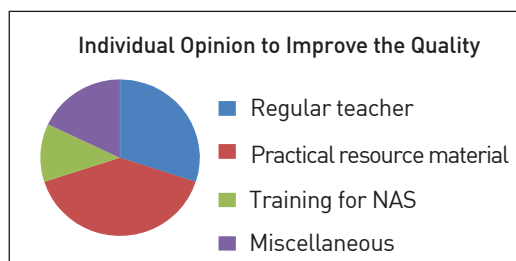


Fig. 10. Individual Opinion to Improve the Quality

Learners' Perspective

- During the interview, when students of Class VIII were asked about smartphones, they replied that their families possess only one smartphone and that is kept by their father or the head of the family. They hardly get the mobiles. Also, as and when they do get, these are used to play games and use social media. In spite of the fact that, all the parents possess mobile phones yet only 10 to 20 per cent children do spend screen time for academic activities.

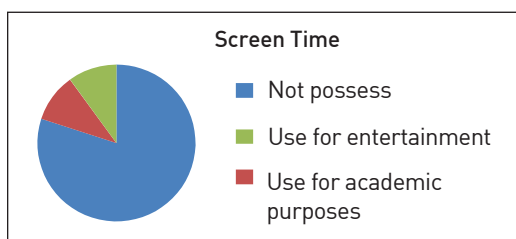


Fig. 11. Screen Time

- When students were asked about the occupation of their parents, 42 per cent of them told that their parents' main livelihood is farming. On being enquired further, they replied that they worked in the fields with their parents. About 38 per cent parents are the daily wage labourers, who migrate during the harvesting season. Rest of the 20 per cent belonged to either small traders or petty sellers.

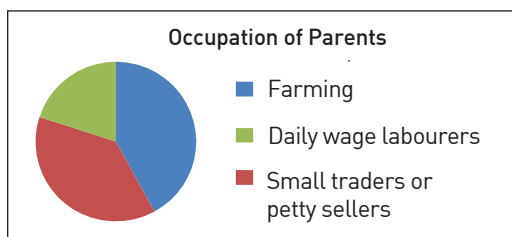


Fig. 12. Occupation of Parents

- When the students were asked whether their parents help them in their studies, about 70 per cent students denied while only 12 per cent students nodded positively that their elders guide them a little. Rest 18 per cent accepted that they get help partly from parents and elders.
- When the students were asked if they prepare any practical resource material themselves, about 72 per cent students nodded negatively, while the others gave examples of preparing some learning resources for practical from their surroundings.
- The level of attendance in the government schools in rural area is about 60 per cent and in urban area, it reaches up to 75 per cent. During harvesting season, when the migration takes place, it falls to very low level.

- When being asked about the Project Work, about 80 per cent students denied and only 20 per cent nodded positively. The project work is assigned in urban area schools and not in rural area schools.
- In the schools where this Project Work is assigned, only 43 per cent told that they had done this.

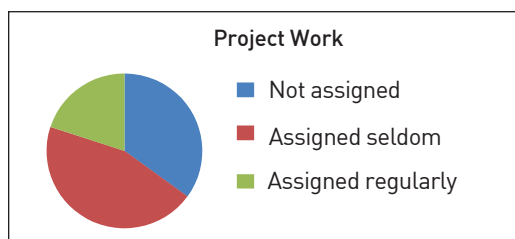


Fig. 13. Project Work

- 79 per cent students never used Digital lab or QR Code through phones, whereas 9 per cent had done this seldom. Only 6 per cent students did this and rest of the 7 per cent could not comprehend the question.
- When students were asked about the demonstration of Science Kit, only 28 per cent of them told positive in tone. Unfortunately, 42 per cent students didn't know about the kit. About 30 per cent students knew about this but partly.

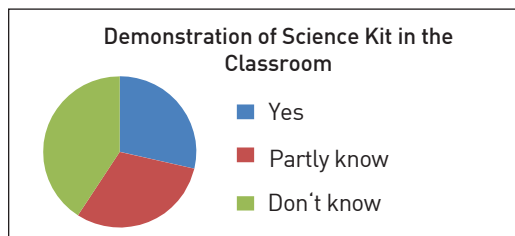


Fig. 14. Demonstration of Science Kit in the Classroom

- Up to Class VIII, no practical facility is available in schools. Therefore, they do not perform any practical work.

Parents' Perspective

- During the interview, when parents of the targeted students were asked about when they come in contact with the teachers of their wards, only 12 per cent of them said that they regularly visit school during PTMs, 8 to 9 per cent parents said that they go to the school whenever called by the teacher. Fifty-seven per cent parents do not take part in any such activity and 15 per cent parents said that they met the teachers in the evening time in public places, like temples in the village, etc., while the rest had miscellaneous opinion.

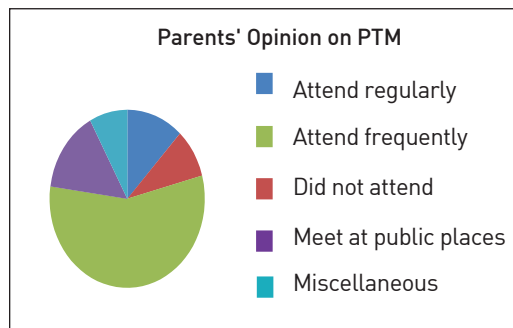


Fig. 15. Parents' Opinion on PTM

- During the interview, 33 per cent parents were fully satisfied with the behaviour of teachers and 21 per cent parents said that the behaviour of teachers was good. The rest had never met the teachers.

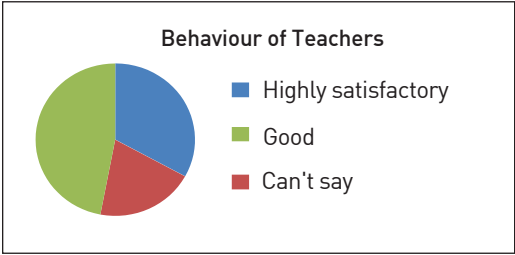


Fig. 16. Behaviour of Teachers

- When they were asked about the school activities which are discussed at home by their wards, 53 per cent were unaware about the activities, 12 per cent of them said that children talked about homework and 13 per cent stated that their children talked about games played in the schools. About 14 per cent parents could not understand the question and 8 per cent had mixed opinion.
- When parents were asked that how they help their ward in project work, in response to this question, 67 per cent of the parents denied to help with such activities, about 25 per cent parents stated that they helped in collecting the required material, whereas only 8 per cent parents said that they actively helped their child in completing projects.

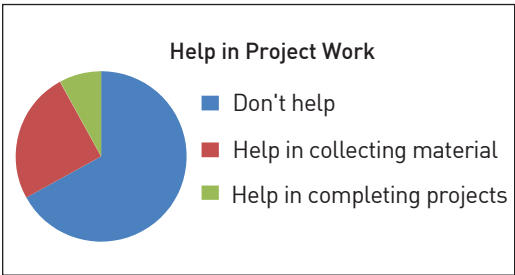


Fig. 17. Help in Project Work

- When asked if they curtail their ward to go to school for domestic works, 48 per cent of them replied that they did not want to stop their child at home but did so often, 22 per cent people said that seldom was it done but 21 per cent people were strictly positive for sending their wards to the school.
- When parents were asked about the timings of studies of their children at home, in reply to this question, people had varied opinions but only 17 per cent parents stated that their children studied at fixed time.

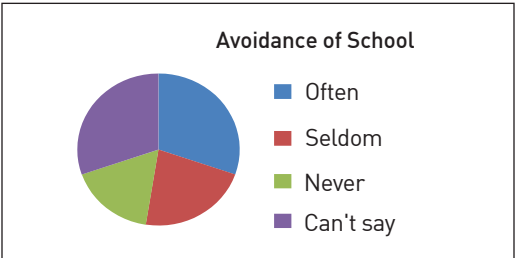


Fig. 18. Avoidance of School

- When parents were asked if they help their wards in their studies, in response to this question, only 8 to 10 per cent people replied that they were active in this regard.
- When parents were asked about smartphone, in response to this question, 95 per cent nodded positively but about 50 per cent people do not get proper recharge with sufficient data. As the use of the phone for academic purpose is concerned, most of them denied, only 20 to 30 per cent children use smartphone for academic purpose but occasionally.

- When parents were asked, if they migrate for labour, in response to this question, 40 to 45 per cent people accepted that they migrated for wages. When probed further about the season, they told that during the harvesting season between October and April, they migrate either to Gujarat or Malwa region.

Classroom Observations

The physical conditions of the classrooms, such as light, air, furniture and cleanliness were found satisfactory in all the government schools. The availability of science textbooks was quite satisfactory. Although, heads and teachers said that the supply of books was delayed. In all the classrooms, blackboard or marker board was available. In about 80 per cent classrooms, multiple learning resources and charts were available, but science kits were used in only 30 to 40 per cent schools. Before entering the classroom, 60 to 70 per cent teachers do not prepare themselves. Only 25 to 30 per cent teachers prepare well in advance. The classroom communication was two-way in the urban area schools. Students, in a good number, were answering the teachers' questions but this was there in urban area perhaps, students in rural area were not taking part in the conversation.

During the classroom conversation, teachers used Hindi as the medium of instruction. In urban schools, this was not at all an obstacle but in rural schools, Hindi was not being comprehended smoothly by learners and local dialect was not being used.

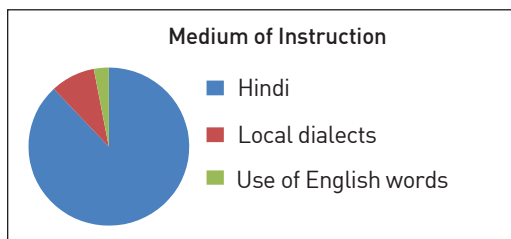


Fig. 19. Medium of Instruction

In 63 per cent schools, teachers started their lecture with the revision of the previous knowledge. But in 29 per cent schools, this did not take place. About 7 to 9 per cent teachers initiated their class directly. About 65 to 70 per cent of teachers were using multiple learning resources in classrooms as per the theme of the topic. In 35 to 45 per cent schools, science kit was not available. No digital material like smart board was available in any government schools either in urban or rural area. During the learning process, application-, skill- and comprehension-based questions are discussed by only 40 to 50 per cent.

During the learning process, classwork was given in only 45 to 55 per cent schools. In 15 per cent schools, this is given informally and in rest of the others, this is not given. Homework is assigned only in urban area schools and even then, only about 30 to 35 per cent of the time. In rural area, this is assigned rarely. On being asked, teachers said that children never do homework, therefore, they do not assign. During the class observation, it has been noted that 90 per cent teachers make an effort to relate the theme of the topic with the knowledge of the students. Teacher's response and behaviour was found positive in relation to the problems of the children. While observing the class, it has been noted that about 43 per cent teachers don't have proper understanding about Learning Outcomes and

only 32 per cent have partial understanding about Learning Outcomes, rest don't work on Learning Outcomes.

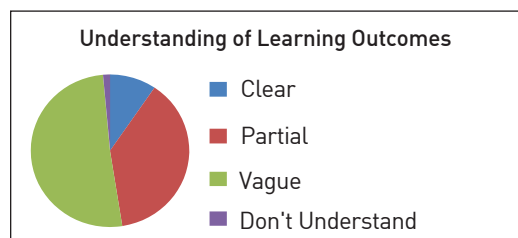


Fig. 20. Understanding of LOs

Conclusion

Jhabua is a core tribal district of Madhya Pradesh, and its literacy rate, PCI and GDDP are comparatively at much lower level than other districts of Madhya Pradesh. In government schools, almost all the students belong to the lower strata of the society. National Achievement Survey (NAS)–2021 was administrated in the month of November. The survey revealed low performance of students of Class VIII in science. Following factors seem responsible for the low achievement in science in Class VIII students in Jhabua district:

- **Lack of Skills:** Unfortunately, science teachers could not explain properly about the Learning Outcomes of NCERT despite the LOs were provided to them well in advance. Mapping of Learning Outcomes with the syllabus was the next step that had to be taken by the teachers, which required rigorous work and was not done by them. The teachers were not even aware of the prescribed syllabus.
- **Epidemic:** India faced a total lockdown in 2020 and peak of epidemics in

2021 that badly affected the previous session, that is 2020–21 and therefore, students had disconnected with the knowledge gained in the previous classes. Moreover, the examinations scheduled in March–April 2021 could not be held, therefore, the regular learning was affected to a large extent.

- **Availability of Science Teachers:** The availability of the teachers of science is a great issue found, especially in the rural areas of the district. Teacher is the most important axis of academics. In Jhabua district, especially in rural areas, the number of regular science teachers is abysmal. In some middle schools, the same teachers deal with science and mathematics.
- **Study Materials Remained Unexplored:** The study material, such as weekly test papers, question banks, mock test series and video lectures was not used wholly. In rural area schools, this was not even supplied properly. The teachers who wanted to solve this material in the classrooms could not do so as the foundation of the learners was not as concrete as required. Headmasters accepted that the supplied academic material was not seen by the teachers before entering the classes.
- **Theoretical Approach of Teaching:** In middle schools, no science lab is available. Although the department has supplied Science Kits to schools, they have not been supplied properly in rural areas. Moreover, where they are supplied, they are not demonstrated during the class. No audio-visual aids

are used, therefore, students cannot visualise the concepts properly. Teachers do not use learning resources properly. Though teachers responded that they assign projects to inculcate the fundamental knowledge among students, especially in the rural areas, denied of any project activity done by them. In total, it can be said that the entire teaching style is theoretical in approach.

- **Medium of Instruction:** Teachers used Hindi as a medium of instruction during their lectures. Textbooks, study material and YouTube lectures are also in Hindi. Local dialect is used neither in classrooms nor any study material is available in that language. In rural areas of Jhabua district, Hindi is difficult to understand, however, students can comprehend the things and concepts easily in their own language. The language barrier was a major factor contributing to the students' low performance.
- **Absenteeism and Migration:** Average attendance at middle schools never reaches more than 60 per cent in rural areas. It is one of the most crucial reasons of low achievement in any assessment. Labour class people of Jhabua district migrate for wages during the harvesting season, which is the peak time of academics. During the migration, people either carry their children with them or leave them with their relatives; however, in both the cases, students do not come to school. In villages, students aged 10 and above work as labourers in the farms to earn

money. In an informal talk, some of them said that they get around ₹200 for plantation and other works in the fields. During harvesting season also, they go for work in the fields. This can be seen in other districts also.

- **Lack of Training and Monitoring:** Middle schools are generally monitored by Cluster Academic Centre (CAC) at cluster level. CAC visits the schools once in a month, which has become a mechanical ritual in the department. The work of CACs has become a task that fills all the formats. Although, teachers in their response said that they take part in academic dialogue every month held at cluster level, yet it seems they do not get subject specific training and guidance. The meeting at the CACs lacks academic rigours.
- **Extra Non-teaching Responsibility:** In middle schools, no clerical staff is appointed, therefore, all the information asked by Cluster, Block Education Officer (BEO) and District Education Officer (DEO) office is prepared in different formats by the teachers themselves. In addition to this, one teacher from the school looks after the scholarship and various government schemes, such as grain distribution, mid-day meal, etc. Apart from this, many NGOs working in the area of education engage the teachers in many different activities, taking them away from their classrooms. All these reduce the teacher-student interaction time.

Recommendations

On the basis of this study and observations, the following dimensions of academics should be worked upon:

- Regular science teachers should be appointed in middle schools. A teacher with a graduate degree in the science stream can effectively deal with different aspects of science in the classroom.
- A regular and continuous in-house Faculty Development Programme (FDP) should be held at cluster or block level, in which all the teachers of the same subject (science) should sit together to share their problems and come up with solutions. This one- or two-day FDP can be made topic-specific every month. This can be led and guided by the senior and experienced teachers of the same subject. A resource person can be called from nearby Excellence or Model or Chief Minister (CM) Rise School, or from District Institute of Education and Training (DIET) of the district. Thus, peer interaction will augment the fraternity strength and boost morale.
- All the teachers of middle schools, especially those who teach science, should be advised to use local dialect words along with Hindi, so that abstract and difficult concepts can be interpreted easily. This can be done not only in science but in other subjects as well, especially in rural areas, where learners use their mother tongue in local environment and Hindi only in schools.
- **Improve School Community Linkages:** Parent-Teacher Meeting (PTM) should be organised during evening time with the help of *Gram Rozgar Sahayak* and *Panchayat* Secretary. The issues can be raised in *Gram Sabha*, where Headmaster of the middle school can address the village gathering and explain the importance of different school activities. If this awareness is infused at the political level, the *Sarpanch* and *Panchs* of the local bodies of the village would also be made aware about this, they can encourage the village people in their own dialect. These local body people should be urged to maintain the attendance and reduce absenteeism in schools. School education should be linked to improve skills for employment.
- The use of local resources in teaching should be encouraged. In teaching science, practical sessions can help to a great extent; therefore, such facilities should be provided for middle schools of the district. Science kit should be made available in every school. The extensive use of TLMs should be made compulsory for teachers. They should be told to create the TLMs for every topic prescribed in the syllabus, using material resources available locally.
- Participation by all partners is crucial. NGOs working in this realm should be asked for help as they can provide practical material and audio-visual aids. Some NGOs have labs on wheels, which can visit the schools frequently. By experiencing this, learners may get

a new vision. Along with this, degree colleges, polytechnics and engineering colleges of the Indore division can be asked to work in the rural areas of Jhabua district. The college students of science, engineering and other degree and diploma courses can be assigned to work in remote villages for a fixed period of time, like one or two weeks in an academic session. If these students of under and post graduate programmes harbour their camps in the villages, middle school students should not only be taught their syllabi but also can be inspired for higher education and life at large. This can

be used as a great exposure platform for both college students and middle school students, benefitting both parties.

This study investigated the cause of Grade 8 learners' poor performance in science in the NAS-2021. This study has important ramifications for society and education. Teachers and educators need to create more engaging and immersive learning environments that encourage student engagement, critical thinking and creativity, and facilitate teamwork, communication and problem solving.

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