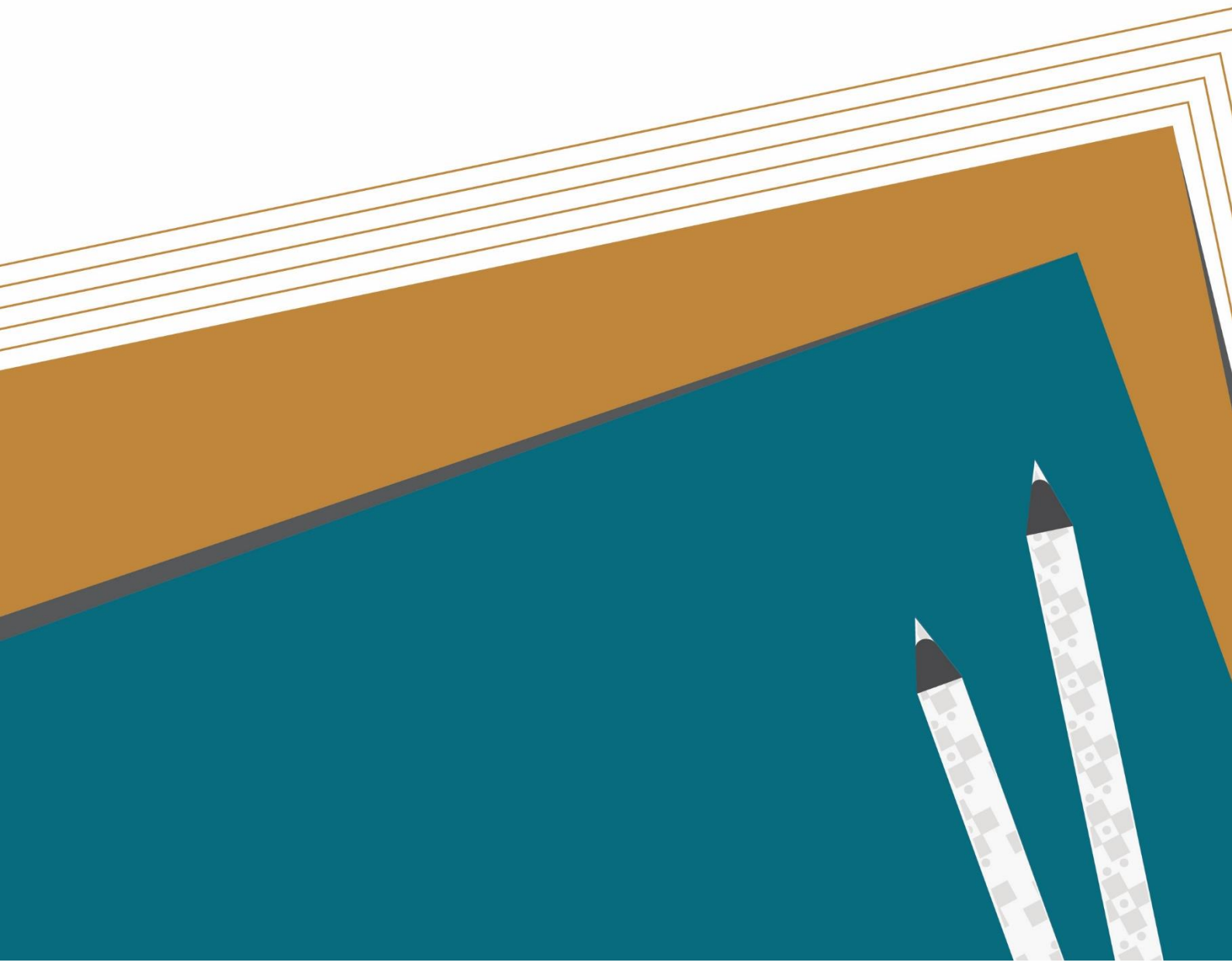# A Closer Look at the Purpose of Assessment in the Indian Context

# A Closer Look at the Purpose of Assessment in the Indian Context[i]

## Introduction

Educational assessment can range anywhere from the use of large-scale standardized achievement tests, to a question that a teacher poses to a student in a classroom. It can be a question by a teacher on the concept of photosynthesis or the addition of two numbers in a class, or it can be two students interacting with each other about making sense of some specific scientific observation. Assessments range on a continuum from ongoing and informal to formal and periodic, like the end of chapter quiz or annual exam or standardized achievement test. In each of these scenarios, the assessment is serving a different purpose and can be considered as an activity to get information about where a student is with respect to educational outcomes.

With so many and varied purposes, assessment plays an important role in ensuring the quality of education. School education intends to develop in the students, certain knowledge, skills, and dispositions which are guided by the larger aims of education. Quality school education must provide the means and opportunities to enable students to achieve these desired aims of education. Assessment provides education stakeholders with useful information to understand if the means and opportunities have been helpful for students to attain the desired knowledge, skills, and dispositions.

Assessment has been used for various purposes over the past few decades. In practice, these purposes overlap. A few important questions that are pertinent are: *how have the assessment practices changed with evolving societal needs; what are the purposes that assessment serve in ensuring quality education and can an assessment which is designed for one purpose fit another?* Therefore, it is worthwhile to first identify the actual purpose of assessment and then, design assessments so as to reap the true power of assessment in improving students' learning. The scope of the discussion in this paper is limited to school education up to the senior secondary level. Each of these purposes is explained using examples from the Indian context. This paper briefly covers the limitations and challenges of each purpose of assessment. Also, each of these purposes is described by looking at its function, approach, nature, timing, usage, limitations and stakeholders.

# Assessment for certification

Assessments for certification are formal in nature and are conducted by an accreditation body. These certify and confirm the attainment of certain knowledge, skills and dispositions in a student. This *certificate of attainment* acts as a quality standard and a stepping-stone to the next level of education. Essentially, the credits that are earned till one level of education are transferred to the next level of education, for example, the credits earned till secondary level (class 10) are transferred to senior secondary level/graduation/post-graduation levels. In India, class 10 and 12 certification assessments are generally conducted in written form and are also the first external examinations for students – often class 10 certification assessments are named as 'school-leaving examination'. There are three national boards – Central Board of Secondary Education (CBSE), Council for the Indian School Certificate Examinations (CISCE) and National Institute of Open Schooling (NIOS) and other state boards which conduct board examinations for students in classes 10 and 12. The NEP recommends having one or more boards of assessment in every state to conduct the assessment for the school-leaving certificate and certify the same. One of these can be the CBSE.

In addition to the credit transfer function of certification assessment, parents judge the reputation of a school, based on the examination results and pass percentage of class 10. Additionally, certification examination results are used *to* predict students' performance in their targeted job sector, therefore, used as a criterion for selecting or rejecting a student aspiring for a particular job. It is considered that students with higher percentage have a higher probability of succeeding in the job sector with more attainment of desired knowledge, skills and dispositions at the end of 10 years of schooling (Lester, Ehrhardt & Standifer, 2016).

This kind of assessment is *summative* in nature and is conducted at the end of an academic year. The question papers for board examinations are designed following a systematic and confidential process. Question paper setters follow a standard process to identify important constructs to be assessed, design a balanced blueprint which focuses on assessing a range of cognitive skills and develop questions in alignment to the blueprint. These assessments are treated as *criterion referenced* as students' performances are measured against previously defined secondary and senior secondary level objectives. The function of such assessments is not to compare students with one another. There are often more than one set of question papers to prevent cheating during examination. Since the answer sheets are evaluated centrally, standard marking schemes are also developed for each question.

Board examinations have very high stakes for students as on the basis of their result, students are eligible for their future choice of educational stream/career. These examinations are the culmination of the entire learning process that unfolds during the years in school. This late-stage assessment subjects' students to enormous stress, much of which is not justified. Because of this unnecessary

stress and fear, NEP recommends eliminating board examinations and replacing them with modular assessments for each subject that can be taken anytime between class 9 to 12.

Also, the outcome of board examinations is not just the measure of students' learning and performance, it speaks of the effectiveness of the education process during their years in school. Unfortunately, students focus only on a few subjects like Mathematics, Science, Language and Social Science which help them score well in the board examination. Though subjects like art and vocational skills are included in the curriculum, no weightage is given to them in the board examination, because of which, students pay less attention to these and concentrate on subjects which define board exam scores.

Because of the high stakes associated with these examinations, students often modulate learning based on what will be assessed which, in turn, moves students' focus from real understanding, thinking, analysing and doing (NEP, 2020). Students' performance in these examinations is also indirectly tied to their teacher's performance, their salaries and job stability (Baker, Barton, Darling-Hammond, Haertel, Ladd, Linn & Shepard, 2010). Due to this, often, there is a danger of teachers *teaching for test*; focusing on preparing students to perform well in these standardized examinations; compromising the attainment of the higher aims of education and; restricting students' knowledge to retaining and reproducing textbook knowledge.

## Assessment for selection

This kind of assessment helps with the selection while choosing students for a further course or for attaining scholarship or employment – which means this follows the r*ight people on the bus* and *wrong people off* phenomena*.* This is also an example of using assessment to predict how individual student will benefit from further study or perform in chosen employment.

In school education, we have two kinds of selection assessments – assessment to receive scholarships and entrance examination for applying to higher grades/ studies. In India, there are various school-level private and government scholarships, such as the National Talent Search Examination (NTSE), CBSE Single Girl Child Scholarship and ISRO Young Scientist Program. The benefits obtained by the students after qualifying these scholarship examinations vary from getting concession in tuition fees, receiving free books, coverage of higher studies fees, etc. The NEP states that a National Scholarship Fund will be established to provide financial support to all students who require financial support for higher studies in the form of stipends, boarding and lodging, and tuition fee waivers. Another kind of selection assessment is conducted after class 12 for admission into specialized streams, like Joint Entrance Examination (JEE) for engineering, National Aptitude Test in Architecture (NATA) for architecture, Common Law Admission Test (CLAT) for law, and National Eligibility-cum-Entrance Test (NEET) for medicine, etc.

Again, a standardized approach is followed to design question papers for these. Here, the question paper is aligned to the objectives of future academic stream/job which a student is aspiring for. The challenge here is to design a valid and reliable question paper to support selection decisions (Brookhart & Nitko, 2014). First, identifying the construct which is needed for future academic stream and designing a question paper which perfectly assesses the test construct, and second, students' performance in this assessment should ideally be proportional to their success in the program. The probability that students who are selected turn out to be unsuccessful in the program is uncertain and unpredictable because of various unforeseeable circumstances.

This kind of assessment *ranks* students in order of merit based on their performance in the test instrument, therefore, these are *norm-referenced*. The purpose here is to differentiate between the students, comparing one with another. With a large number of students, performance in such assessments leads to the '*bell curve*' (Freeman & Lewis, 1998) – the assumption that most of the students are clustered around the average value and the remaining small number of students over- or under-achieve. In other words, the assumption here is that a few students will inevitably fail while a small number of students will show the highest level of attainment. Because of this fundamental characteristic of norm-referenced assessment, these are only suitable for the purpose of selection. Classroom-based assessments are criterion-referenced, that is, assessments are designed in alignment with the criterion in terms of learning outcomes and the assumption here is that all students are capable of attaining the learning outcomes.



Poor learner     Average learner     Very talented learner
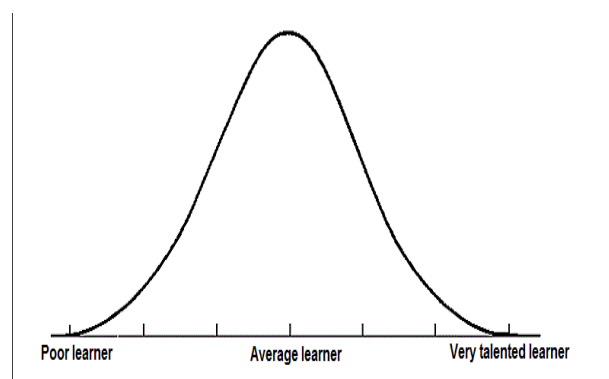
Figure 1. A typical spread of marks from a norm-referenced assessment

# Assessment to support teaching and learning

This kind of assessment has always been the dominant one in school education. The purpose of this assessment is to systematically improve the quality of student learning through improved programs, curricula and teaching (Gagne & Beard, 1978). Three primary questions addressed by this assessment are, 'What do we want our students to learn?', 'How can we gather evidences of

students learning?' and 'How far our students have attainment the desired outcomes?'. These questions will be understood better using the dynamic teaching-learning cycle as shown in Figure 4.

The first step in this cycle is developing and understanding learning outcomes which represent what students will know or be able to do at the end of a topic/chapter/unit/course. Learning outcomes are very critical for determining the teaching methodologies, learning activities and assessment schemes for the successful transaction of concepts in each subject. *Learning outcomes* are defined as assessment standards indicating the expected levels of learning that children should achieve for that class (GOI, 2017)]. Having a clear understanding of learning outcomes helps a teacher to plan, conduct and use assessment well.
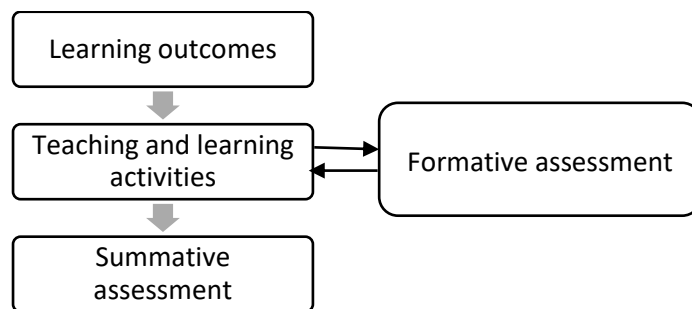


Figure 2. Dynamic teaching-learning cycle

The second step is designing teaching and learning activities to help students attain the learning outcomes. *Formative assessment* is integrated with the teaching-learning process and is conducted throughout the teaching. It is designed to assist the learning process by providing *feedback* to students, which can be used to identify their strengths and weaknesses and provide scaffolding to improve their learning. Therefore, this type of assessment is also called, *assessment for learning*. Since students' performance in this kind of assessment is not graded, therefore, these assessments have very *low stakes* for students.

Students play an active role in formative assessment along with the teacher. The assessment which is conducted by the student himself/herself is called, *self-assessmen*t. It is a process in formative assessment during which students reflect on the quality of their work (self-monitoring), judge the degree to which it reflects explicitly stated learning outcomes (self-judgement) and revise accordingly (self-revision) (Gipps, 1999). Metacognition is central to self-assessment; where the student consciously takes control of specific cognitive skills, such as checking understanding, predicting outcomes, planning activities, managing time, and switching to different learning activities. Students feel more motivated and confident to learn when they themselves have taken charge of learning with necessary scaffolding provided by the teacher. Since assessment happens here as learning occurs, it is also called, *assessment as learning*.

The third step is to conduct a *summative assessment* to measure the attainment of learning outcomes and report that to students, parents and administrators. In a classroom scenario, it

generally occurs at the conclusion of a topic/chapter/unit/course and is also called, *assessment of learning*. Summative assessment is designed and conducted by teachers. They are typically used to assign marks or grade and therefore, have high stakes for students.

Several assessment techniques which include test, activities, projects, worksheets are used to conduct summative assessments. In Indian schools, one of the most used methods of conducting a summative assessment is the *test* which is conducted through short written or oral mode and helps to capture students' proficiency. Teachers correct test papers and assign marks based on the correctness of answers. Measurement is assigning a quantitative value against a student's performance. Summative assessment aggregates all the evidences of learning up to a given point (mid-term or end-term) to make a judgement about a student's learning level through an evaluation which is based on marks/ grades.

Both summative and formative assessment are *criterion-referenced*, that is, they are designed to understand students' attainment of learning outcomes. Unlike norm-referenced assessment, in which the objective is to rank a student with respect to other students in the cohort, here, the primary objective of conducting an assessment is to provide feedback and scaffolding in case of formative assessment and report students learning levels with respect to the stated learning outcomes in case of summative assessment.

Students learn better if learning outcomes, teaching and learning activities and assessment are in alignment. Both formative and summative assessments play very important roles as formative assessment helps to find out whether teaching and learning activities helped students attain the learning outcomes and summative assessment aims to measure students' attainment of learning outcomes, thereby, providing an index of learning. Increased emphasis on formative assessment will result in better performance in summative assessment.

# Assessment for accountability

To ensure the effectiveness of school education, a periodic assessment must be designed – not just for the student but for the entire education process. Such assessments, if administered properly, provide a view of the health parameters of the education process, at a stage when if flaws are detected, interventions and corrective measures can be taken at the systemic level. Large scale assessments are precisely such instruments which help the education system introspect about its own health and effectiveness.

These are administered to a large number of students in a district, state or country – a representative sample of students is selected for administration. These are conducted at state, national and international levels. The primary purpose of such assessments is to ensure accountability, that is, if the inputs (teaching and learning, school facilities, curriculum, programs,

etc.) are leading to the right output (students' performance and outcomes). Since such tests are administered to a large number of students, these mostly consist of multiple-choice questions which are amenable for automatic evaluation. These tests are administered at major transition points from one level of schooling to another, such as pre-primary to primary-class 3, primary to upper primary-class 5, upper primary to secondary-class 8 and secondary to higher secondary-class 10. Conducting the test during the transition stages helps in determining students' learning levels and identifying appropriate remedial intervention. These tests are standardized in nature, that is, there is uniformity of content, questions and procedure in scoring, administering and interpreting test results. Uniformity enables comparison of students' performance across different parts of the country. Mostly, these tests are conducted annually to obtain information on the current levels of students' achievement and to monitor possible changes over time.

International assessments provide information about an education system in relation to one or more other systems. These assessments help in the understanding of global trends and evolving systems in education. Results of an international assessment are used by individual countries to carry out their own within-country analyses. The Programme for International Student Assessment (PISA) (OECD, 2009) is conducted once in every three years to access reading, mathematics and science for 15-year-old students. So far it has been conducted in India just once, in the year 2009.

The focus of the national level assessments is reporting and tracking long term trends across states, location (urban/ rural), cycle of administration, content and skill areas for each subject with respect to class-wise learning outcomes (Ministry of Education, 2017). State-level assessments help in providing evidence of the performance of teachers, administrators, schools and districts relative to established learning outcomes and also help in diagnosing strengths or weaknesses with respect to certain content or skill area for a subject and are, thereby, used in making appropriate changes in teaching and learning.

In India, several such assessments are carried out at the national and state levels. The National Achievement Survey (NAS) is conducted by National Council for Educational Research and Training (NCERT) annually at the national level in a representative sample of schools from all the district government and government-aided schools for class 3, 5, 8 and 10 in Languages, Environmental Science, Science, Social Science and Mathematics. The Annual Status of Education Report (ASER) is the largest citizen-led, household assessment in the world conducted by *Pratham* with children of 6 - 14 years of age for literacy and numeracy content domains.
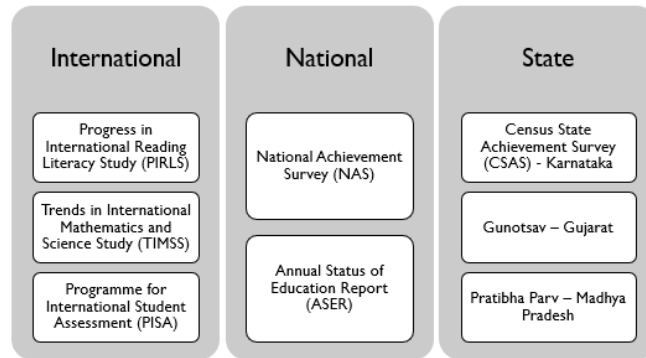
Figure 3. Large scale assessments in India

In addition to this, NEP 2020 recommends conducting census-based State Assessment Survey (SAS) for developmental purposes to evaluate independently state accountability plans and checking what is working best in each state. In Karnataka, census-based state achievement survey (CSAS) is conducted annually by the Karnataka State Quality Assessment and Accreditation Council (KSQAAC) for the students of classes 4 to 10. The Student Level Achievement Survey (SLAS) is administered every year in Andhra Pradesh, Delhi, Manipur and Punjab by the State Council for Educational Research and Training (SCERT) for elementary grade students. *Gunotsav* is conducted in Gujarat by the Gujarat Council for Educational Research and Training (GCERT) to assess the students of classes 2 to 5 in reading, writing and numeric skills. *Pratibha Parv* is conducted in primary and upper primary schools in Madhya Pradesh by the Rajya Shiksha Kendra.

Well-deigned and properly used large-scale assessments provide data about school education outcomes and can, thereby, assist policymakers, administrators, schools and teachers in ensuring that all students are offered what they need to meet the established learning outcomes and to make appropriate improvements in teaching, curriculum, and other program elements. Therefore, it is important to regularly disseminate data and related information from large-scale assessments to relevant stakeholders in order to gain their understanding, participation and support. Teachers should be provided adequate time and assistance to interpret data for the purpose of improving instruction; they should be given assistance in using teaching strategies that improve the learning outcomes for all the students.

This kind of assessment *lacks diagnostic value* for individual students as it is conducted with a sample of students and is mainly summative in nature – generally conducted at mid-or end-term. A high-level view of students' learning as reported in state or district assessment reports will help a teacher to identify the content domains and skills where most of the students have misconceptions and gaps in learning in one particular region, but these reports will not help in tracking individual student's learning levels. As NEP 2020 recommends, these assessments must not be used to evaluate/grade individual teachers, students, and/or schools, and they should not be used as a means of tracking or labelling individual students or schools. Therefore, these assessments have very low stakes for students as they do not impact their final grades or percentage.

# Summary

Despite several policy initiatives to improve the assessment practice in schools, students' learning levels measured against class-specific learning outcomes in assessments conducted for accountability purposes, like NAS and ASER, indicate poor average learning levels across different classes. Average learning levels are very poor and there is a dip in the scores as students' transition from primary to upper primary and from upper primary to secondary (Chomal, Banerjee, 2019).
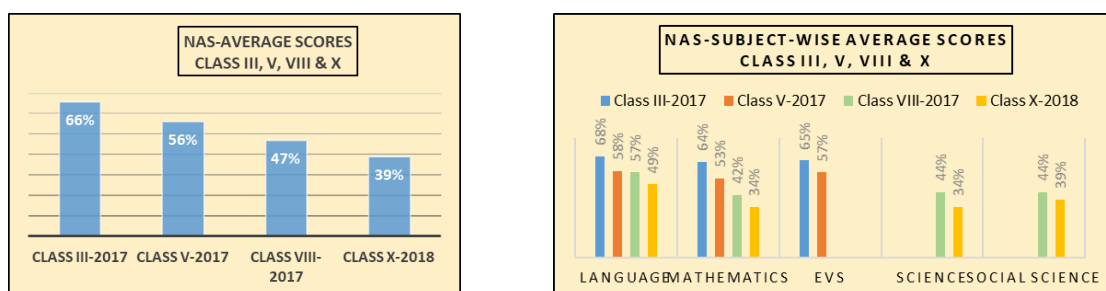
Figure 4. NAS average scores and subject-wise average scores

There can be several reasons behind low average learning levels which include the approach of teaching and learning followed in the classroom, kind of textbooks used or the lack of teacher capacity development initiatives. One of the reasons is also the way assessments are conducted and used in classrooms to improve learning. Some research studies on CCE implementation conducted by ASER (Sinha, 2016) and TESS (McCormick, 2014) in various states of India provide ample evidences that assessment is mostly used for grading purposes where the primary focus of assessments is recalling and reproducing from textbooks. In most of the schools in India, formative assessments continue to be a series of short written tests and the marks obtained in these tests are aggregated to grade students. The idea that formative assessment results could be used to better learning and, thereby, improve summative results in the end, is almost absent (Raj, Banerjee, 2019). A clear understanding of the core purpose of conducting assessment and using the results to improve students' learning is missing in our classrooms.

Each purpose of assessment plays an equally important role to support quality education. It is important to design the right kind of assessment based on its purpose and usage. The entire purpose of assessment is lost when there is a misalignment between the purpose of the assessment and the usage of its results, for example, a certification assessment used for the rank ordering of students or formative assessment used for grading purposes. In the current era of high-stakes assessment, there is considerable pressure to focus only on student performance and minimal on the extent to which self-assessment is taught, experienced, and encouraged. However, it is important to understand here that students' performance in assessments conducted for accountability,

certification and selection purposes will enhance only when the formative assessment is practiced to tightly integrate pedagogy, learning and assessment in classrooms. School should not prepare students for just one kind of assessments instead it should prepare them for life by providing them with meaningful educational experiences for attaining the higher aims of education.

| Purpose of assessment | Function | Usage of results | Timing | Assessor | Stakeholders | Nature | Stakes | Limitation |
|---|---|---|---|---|---|---|---|---|
| **Accountability** | Understand health of education system | Take corrective measures at systemic level | Periodic | Central and state government, NGOs | Policymakers<br><br>Curriculum developers<br><br>Administrators<br><br>Teacher educators<br><br>Teachers | Norm referenced | Low | Lacks diagnostic value |
| **Certification** | Certification of attainment of certain knowledge, skills and dispositions | Transfer credits, Predict student performance | End of Class 10/ Class 12 | Board of examination | Policymakers<br><br>Curriculum developers<br><br>Administrators<br><br>Teacher educators<br><br>Teachers<br><br>Parents<br><br>Students | Criterion referenced | Very high | Teach and learn for test |
| **Selection** | | | | | | | | |
| Scholarship | Providing monetary benefits | Provide scholarship | Any class | Scholarship offering body | Parents<br><br>Students | Norm referenced | High | Based on just one assessment |
| Entrance | Predict student's performance in future course | Selection for higher education | After Class 12 | Higher institutions | Institutions Students | Norm referenced | High | Based on just one assessment |

| Supports teaching and learning | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Assessment of learning | Measure students' attainment of learning outcomes | Grading and reporting | At the end of chapter/ unit/ year | Teachers | Administrators Parents Teachers Students | Criterion referenced | High | Non-remedial |
| Assessment for learning | Improve students learning and teaching | Provide feedback to students, Make necessary changes in the pedagogy | Throughout teaching and learning | Teachers | Teachers Students | Criterion referenced | Low | Time consuming |
| Assessment as learning | Improve students learning | Self-monitoring Self-judgement Self-revision | Throughout teaching and learning | Students | Students | Criterion referenced | Low | Challenging to train lower grade students |

Table 1. Summary of different purposes of assessment

# References

1. Andrade, H., & Valtcheva, A. (2009). Promoting learning and achievement through self-assessment. Theory into practice, 48(1), 12-19.
2. ASER Reports - ASER Centre. (n.d.). Annual Status of Education Report. Retrieved August 28, 2020, Retrieved from https://www.asercentre.org/p/51.html?p=61
3. Baker, E. L., Barton, P. E., Darling-Hammond, L., Haertel, E., Ladd, H. F., Linn, R. L., ... & Shepard, L. A. (2010). Problems with the Use of Student Test Scores to Evaluate Teachers. EPI Briefing Paper# 278. Economic Policy Institute.
4. Black, P., & Wiliam, D. (2005). Inside the black box: Raising standards through classroom assessment. Granada Learning.
5. Brookhart, S. M., & Nitko, A. J. (2014). Educational assessment of students. Pearson Higher Ed.
6. Freeman, R., & Lewis, R. (1998). Planning and implementing assessment. Psychology Press.
7. Gagne, R. M., & Beard, J. G. (1978). Assessment of learning outcomes. Advances in instructional psychology, 1, 261-294.
8. Government of Karnataka (n.d.) Census-based state achievement survey (CSAS). Bengaluru, Karnataka School Quality Assessment and Accreditation Council, Retrieved from, http://kseeb.kar.nic.in/docs/KSQAAC/CSAS_2017_Report.pdf
9. Government of India (2009). The Right of Children to Free and Compulsory Education Act 2009, New Delhi, Ministry of Education.
10. Government of India. (2017). Learning outcomes at elementary stage. New Delhi, Ministry of Education, Retrieved from, https://www.mhrd.gov.in/sites/upload_files/mhrd/files/Learning_outcomes.pdf.
11. Government of India. (2020). New Education Policy (NEP 2020). New Delhi, Ministry of Education Retrieved from, https://www.mhrd.gov.in/sites/upload_files/mhrd/files/NEP_Final_English_0.pdf
12. National Council for Educational Research and Training (2017). National Achievement Survey (NAS). Retrieved from http://nas.schooleduinfo.in/dashboard/nas_ncert

13. Government of Madhya Pradesh, (n.d.). *प्रतिभा पर्व : प्रतिभा पर्व प्रबंधन प्रणाली..* Retrieved from http://www.educationportal.mp.gov.in/PratibhaParv/default.aspx

14. OECD (2010), PISA 2009 Results: Executive Summary. Retrieved from https://www.oecd.org/pisa/pisaproducts/46619703.pdf

15. Paris, S. G., & Ayres, L. R. (1994). Becoming Reflective Students and Teachers With Portfolios and Authentic Assessment (Psychology in the Classroom: A Series on Applied Educational Psy) (1st ed.). Amer Psychological Assn.

16. National Achievement Survey (NAS), http://nas.schooleduinfo.in/dashboard/nas_ncert

17. Annual Status of Education Report (ASER), https://www.asercentre.org/p/51.html?p=61

18. Karnataka, census-based state achievement survey (CSAS), http://kseeb.kar.nic.in/docs/KSQAAC/CSAS_2017_Report.pdf

19. Gunotsav, Gujarat, http://www.gunotsav.org/index.html

20. Pratibha Parv, Madhya Pradesh, http://www.educationportal.mp.gov.in/PratibhaParv/default.aspx

21. Aanchal Chomal, Shilpi Banerjee. A chain of falling numbers. Deccan Herald. May 11, 2019

22. Anupama Raj, Shilpi Banerjee. Mistaken identity of assessment. Deccan Herald. Nov 28, 2019

23. Sinha, S., Banerji, R., & Wadhwa, W. (2016). Teacher performance in Bihar, India: Implications for education. The World Bank.

24. McCormick, B., Walsh, C., Moore, R., Palai, R. K., Gogoi, M., & Pareek, S. (2014). TESS-India Baseline Report 2013: Uttar Pradesh, Madhya Pradesh and Bihar: baseline study of teacher educators, teacher trainees, head teachers, teachers and students.

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