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# EXAMPLES FROM THE ASIA-PACIFIC

# Supporting schools' and teachers' use of assessment to inform learning of all students

NEQMAP
Network on Education Quality
Monitoring in the Asia-Pacific

Australian Government
Department of Foreign Affairs and Trade

Education
2030

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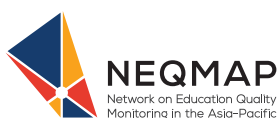
The Network on Education Quality Monitoring in the Asia-Pacific (NEQMAP), established in March 2013 in Bangkok, Thailand, is a platform for exchange of knowledge, experience and expertise on the monitoring of educational quality in countries and jurisdictions of the Asia-Pacific region. The network focuses on student learning assessment as a key tool for monitoring education quality, while acknowledging the importance of maintaining strong linkages with other enablers of learning in classrooms including curriculum and pedagogy. UNESCO Regional Office in Bangkok serves as the NEQMAP Secretariat.

# Supporting schools' and teachers' use of assessment to inform learning of all students

*In more than half of Asia-Pacific countries, a majority of learners in primary and secondary education do not have the required foundational skills.*

The fifth issue of the topical case studies series "Using Assessment Data in Education Policy And Practice: Examples From The Asia-Pacific" under the Network for Education Quality Monitoring in Asia-Pacific (NEQMAP), documents four promising practices from countries in the Asia-Pacific region on how education systems can better support teachers and schools in effectively integrating assessment practices in the teaching and learning process. The goal of this support is to identify and meaningfully address every learner's needs, so that every learner can learn successfully. The case studies look at a variety of levers that promote a better use of assessment for learning such as how to develop teachers' assessment literacy and capacity to design, implement and use assessment to inform their classroom teaching and learning; how to improve the use of standardized assessment data to inform teaching and learning and how to rethink the organisation of instruction to address the needs of all learners.

USING ASSESSMENT DATA IN EDUCATION POLICY AND PRACTICE:
EXAMPLES FROM THE ASIA-PACIFIC

# Supporting schools' and teachers' use of assessment to inform learning of all students

ISSUE 5, DECEMBER 2023

# FOREWORD

As we are publishing these topical case studies, countries around the world are aiming to ensure that by 2030, all learners in primary and lower secondary education have reached at least minimum proficiency in reading and mathematics (SDG 4.1). However, despite some improvement, progress with meeting this Sustainable Development Goal target is slow in the Asia-Pacific region. In more than half of Asia-Pacific countries, a majority of learners in primary and secondary education do not have the required foundational skills.

Since the massive school closures during the height of the COVID-19 pandemic, the year 2023 is the first full year of schools operating normally in almost all countries in Asia and the Pacific. With schools reopening, teachers are met with the expectation to lift students' learning levels quickly, especially among the most vulnerable populations. The challenges teachers are facing are not new: large, heterogeneous classrooms, with some students at a very high risk of falling behind and dropping out. At the same time, assessment for teaching and learning capacity is low, and tools that can be used to support each student to progress are scarce. It is therefore imperative to equip schools and teachers with the know-how, tools and adequate support to identify students' learning needs and to adjust teaching accordingly.

In this issue, we are documenting 4 case studies of promising and effective policies or practices on how education systems can better support teachers and schools in effectively integrating assessment practices in the teaching and learning process, to identify and meaningfully address every learner's needs. In particular, the case studies show how different tools, approaches and policies help promote and reinforce the use of assessment to support more learner-centred and differentiated approaches to teaching and learning.

The first case study highlights how teachers and school leaders in the Our Lady of Visitation School in Adelaide, South Australia, are using the Progressive Achievement approach developed by ACER to collaboratively analyse and use the results of a standardised diagnostic assessment to improve teaching and learning in mathematics. The case study from Andra Pradesh, India, documents the partnership between the civil society organisation Pratham Education Foundation and the government of the State of Andra Pradesh to implement an innovative approach to teaching called 'Teaching at the Right Level' (TaRL). The approach was implemented statewide to improve learners' foundational literacy and numeracy skills by rethinking through a learner-centred approach. The third case study, about teachers' perceptions of the adoption of standards-based assessment by the Delhi Board of School Education (DBSE) with support from the Australian Council for Educational Research (ACER) India, showcases how training teachers and providing support for the use of criterion-based assessment are improving teachers' capacity to identify and meaningfully describe their students' learning needs, and to provide adequate feedback in the learning process. Finally, the case study, from the Aga Khan University Examinations Board in Pakistan, looks at how examination results are analysed and documented in a School Performance Report to provide meaningful information for improvements in teaching and learning at the school level.

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**MARC KRALJ, PRUE ANDERSON & GRETA ROLLO**

## Introduction

### The context – Our Lady of Visitation

This topical case study reports on work conducted with Our Lady of Visitation, a Catholic primary school in Adelaide, South Australia. Principal Frank DeTullio; Leader of Learning, Tina Ida; Inclusive Education expert, Sandra Naismith; and lead educators in the school supported 22 teaching staff working with 360 students to improve learning outcomes aligned with the Australian Curriculum for F-6. The Australian Council for Educational Research (ACER) worked collaboratively with the school to support this intervention. This report briefly documents how the school achieved improvements in students' mathematics learning by using assessment data to inform teaching and learning.

Our Lady of Visitation has a diverse community of learners with wide-ranging needs. To assess student achievement, the school had been administering tests from ACER's Progressive Achievement (PAT) approach, but the data was not being used effectively. In 2016 the new principal and his leadership team realised that staff needed training, time and support to understand, interpret and use the PAT data effectively to inform their teaching program, drive improvement and monitor student progress. This case study focusses on implementation of this plan from 2017.

As a result of analysing PAT data, the school determined that the evidence identified both weaknesses and gaps across the school. Money and financial maths (worded problems) were identified as weaknesses, where skills had been taught, but not well understood; areas of geometry were identified as gaps, where skills had not been taught – a trend discovered across all year levels. The case study demonstrates how learning-assessment data has been used to improve teachers' understanding and knowledge of assessment; to target teaching and set goals to improve teaching; and to improve the learning outcomes of each student.

## 'What you do with the data to improve outcomes is the key … not just doing the test.'

Frank DeTullio, Principal, Our Lady of the Visitation

## The Progressive Achievement approach

The case study was based on using PAT data to inform teaching and learning plans that would support student improvement. This use of PAT data is called the Progressive Achievement approach.

PAT was developed by the Australian Council for Educational Research (ACER) to measure what students from the start of school to Year 10 (primary and lower secondary education)

**Figure 1: Student report: PAT Maths Adaptive**
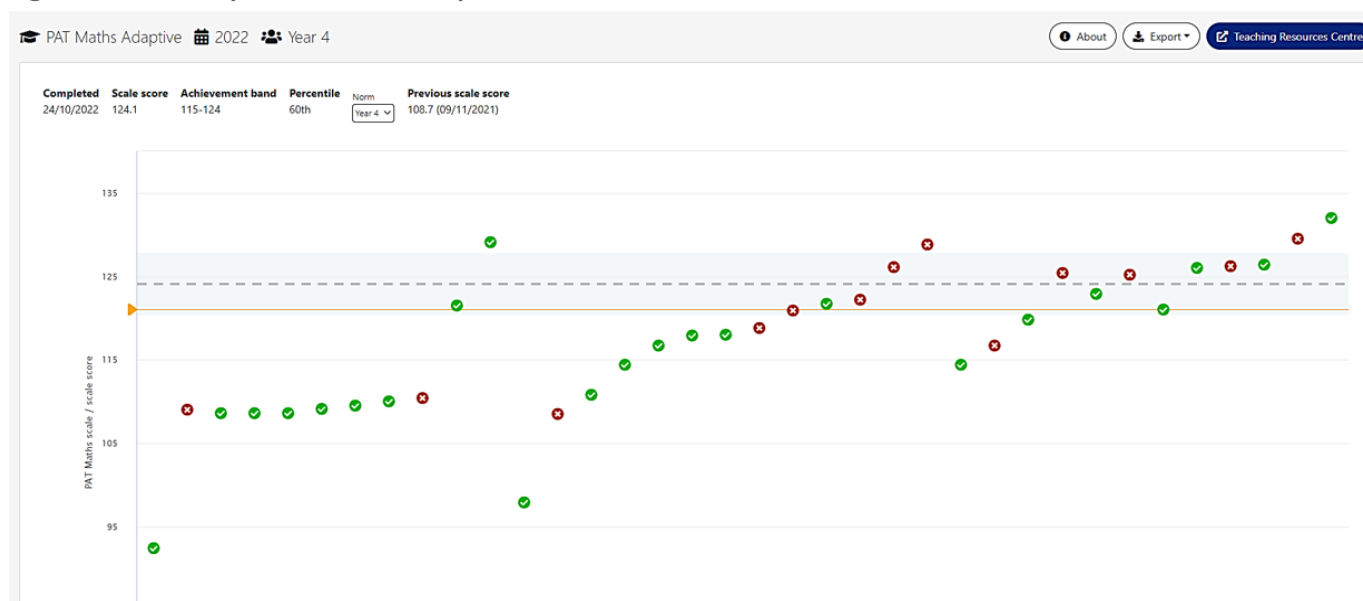


Source: ACER

know, understand and are capable of in the different domains of Reading, Mathematics, Spelling, Vocabulary, Grammar and Punctuation, Science, STEM Inquiry and Critical Reasoning. PAT is designed to be comparable across years of implementation, and therefore can be used to monitor progress over time. Each assessment is administered in under 60 minutes through ACER's secure online platform or using paper-based tests.

PAT can be used to:
- establish what students are capable of, to challenge them at the appropriate level for effective learning
- assess students at recommended intervals to measure learning growth over time
- allow teachers to access student Individual reports to establish what maths strands and proficiencies have been mastered and what students need to learn next; and to access Item Performance reports to establish the strengths, weaknesses and gaps of groups and cohorts of students in different learning domains.

Figure 1 shows a student report from PAT Mathematics. Each circle is a test item. This student answered the green items correctly and the red items incorrectly. The teacher can click on each circle to see the item so they can see what this student could or could not answer.

On the left side of this report (see Figure 1) is the mathematics scale. Easier items are at the lower end of the scale and harder items at the higher end. This student answered most of the easier items correctly, showing these are skills that they have mastered, but there are a couple of examples of easier skills that they might need to revisit. The harder items that this student answered incorrectly show the skills that they need to learn next.

The yellow line on the report shows the norm, or average, score for students in this grade in Australia and the dotted line shows this student's test score, which is just above average.

PAT tests are scaled, which means all the mathematics test items from primary through to secondary tests are on the same mathematics scale. When students sit a PAT Mathematics test, they receive a scale score. A year later, when they sit a different PAT Mathematics test, they get a score on the same scale so the scores can be compared. This allows the teacher to see how much the student has improved. ACER has divided the scale into levels and described the development of skills for each of these levels based on the items at these locations on the scale. This means when teachers know students' scale scores for their most recent mathematics test, teachers also know on which level of the described scale students are located. Figure 2 shows a class report with the number of students located across different levels of the PAT Mathematics scale for that class.

The class report in Figure 2 helps the teacher to group students by their learning needs, and target teaching for students at each level on the skills they need to learn next. It is clear from Figure 2 that the majority of students in this class are working in 2 adjacent levels of the mathematics scale, but there are a few students working well below this and some who are working well above this. Teachers can use the skill descriptions for each level of the mathematics scale to identify the skills that students need to learn.

**Figure 2: Achievement report: PAT Maths Adaptive**
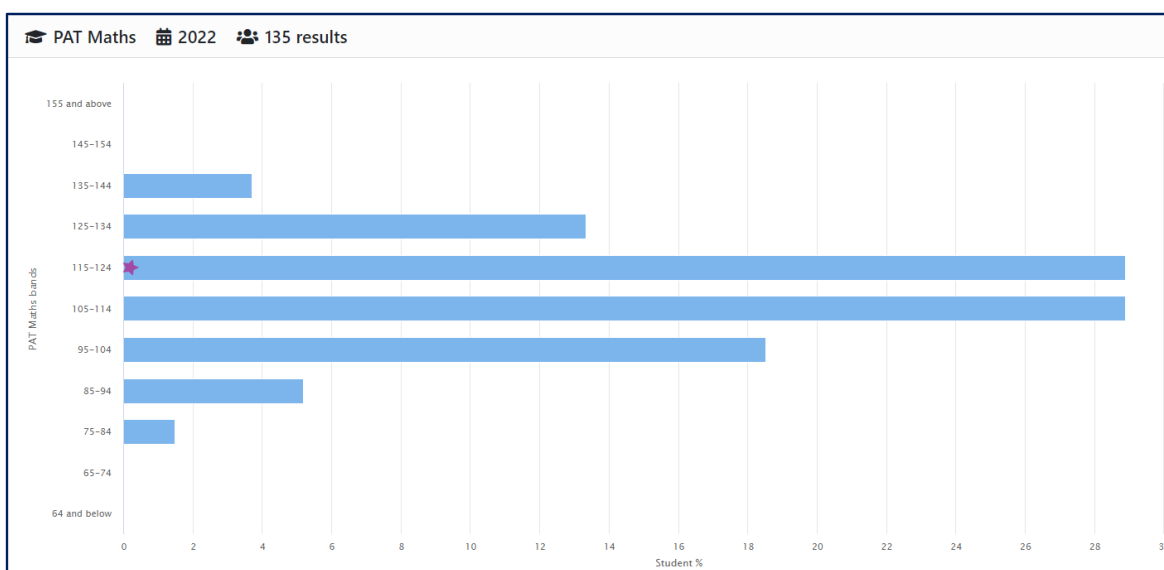


Source: ACER

Figure 3 illustrates how PAT reports show progress over time.

**Figure 3: Progress report: PAT Maths Longitudinal**
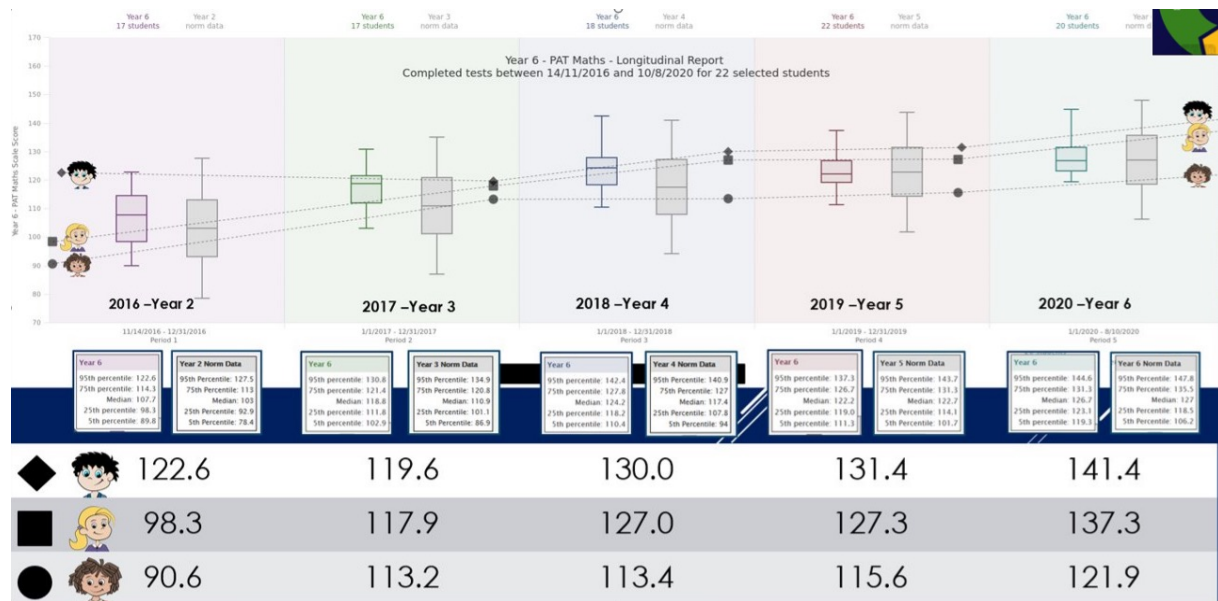


Source: ACER

The report in Figure 3 shows the mathematics scale scores for 3 different students over 5 years of school. Over this period all students progressed, but not necessarily by the same amount each year. Teachers can use these progress reports to track and monitor the growth students have made over 9–12 months of teaching and learning. The box plots show the range of scale scores for students in this grade at this school (in colour) as well as for all students in this grade across Australia (in grey and based on the norm data).

The PAT reports provide detailed diagnostic and interpretative data that teachers can use to inform their teaching and help students to improve.

## Case study methodology

Our Lady of Visitation (OLV) wanted teachers to change the way they approached teaching and learning so that it was informed by data. OLV wanted teachers to pay close attention to what the PAT Mathematics data was telling them about their students. They wanted to use a whole-school approach to mathematics that staff and leadership participated in to:

- ◣ build a greater understanding of assessment, learning progressions and progress through professional learning
- ◣ implement a Progressive Achievement approach to use data to inform teaching and target students' strengths, weaknesses and gaps
- ◣ build and develop a professional staff culture.

The case study methodology was to document the process of change as part of a collaborative engagement with the school to support this intervention. The purpose of the intervention was to change a situation where staff collected PAT data but did not use it, to one where staff know how to interpret and analyse the PAT data, how to understand the implications for their teaching, and how to change their teaching and learning programs so that student learning would improve. The purpose was for the whole school to adopt a data-driven approach to teaching and learning.

The methodology was based on implementing the principles of ACER's Progressive Achievement approach. The tests are integral to this approach, but are not sufficient on their own. Teachers need a much broader understanding of teaching mathematics in order to use the test data effectively, hence the focus on the progressive approach. The focus of professional development workshops and key school decisions was documented, along with staff feedback about their challenges and successes in implementing and refining their changed approach to using assessment to inform learning. Staff completed a questionnaire at the end of 2017 to evaluate the effectiveness of their learning, and the school leadership team also shared PAT data that showed improvements to student learning.

Figure 4 shows the 3 stages of ACER's Progressive Achievement approach.

**Figure 4: ACER's Progressive Achievement approach (ACER, 2022)**



Source: ACER

The 3 stages of this approach are briefly outlined here.

**Stage 1: Collecting and using the evidence**

Classroom work, quality assessment instruments such as progressive achievement tests, and our own expert knowledge combine to produce a wealth of data that tell stories about students' abilities. These data tell us what students know, understand, and can do at a particular point in time, and what they are ready to learn next.

**Stage 2: Supporting next steps**

The evidence and understanding that educators collect informs the next steps in teaching and learning by shaping personal stretch targets for every student. This process needs to be supported by learning resources and targeted support for a) students who are yet to master certain skills, b) students consolidating their current skills, and c) students requiring extension. At the same time, this approach helps develop and strengthen educators' own capabilities and confidence as professionals who effectively use data to identify and meet students' immediate needs.

**Stage 3: Tracking student progress**

Monitoring student achievement over time is essential to see progress. The regular practice of collecting and reflecting upon data, including classroom work, observations, and results from reliable assessment tools, continues to build the narrative of every student's learning and therefore track what progress has been made over select periods of time (every 9–12 months is recommended for PAT assessments). This tracking also serves

as a source of ongoing feedback to students and reporting to parents that supports further progress. A growth mindset approach in assessment includes 'a belief that, regardless of where students are in their learning at any given time, every student is capable of making further progress' (Masters, 2016a).

## The intervention

**Purpose:** The intervention comprising professional development training, with supported consultation and planning with the leadership team, was intended to improve staff data literacy, especially report interpretation and teachers' use of PAT data to inform their teaching plans, guide informal classroom assessments and use student feedback effectively so that students made good progress. Teachers were also supported to better understand the sequence of conceptual development that underpinned the skills they needed to teach, described in the PAT reporting levels.

**Features:** Based on the 2016 PAT data, mathematics was nominated as the subject of focus for improvement for 2017, specifically the learning areas of problem-solving, geometry and using money. As noted previously, staff had used the PAT data to identify these as areas where students needed the greatest support, and they subsequently set goals for teaching and learning that aligned with the curriculum. They focused on using and interrogating the PAT Mathematics data effectively to identify students' starting points for learning. They also started using the PAT Teaching Resources Centre (TRC), which provides a range of teaching activities targeting each of the levels of student achievement across the Mathematics scale.

The teaching activities are linked to the levels of the PAT report shown earlier in Figure 2.

**Development:** In 2016–17, staff received professional development training in how to use the PAT data from the tests in Mathematics and Reading as well as the accompanying PAT Teaching Resources Centre materials to improve student learning. ACER provided the professional development training, and supported consultation and planning with the leadership team. Staff worked in collaborative teams across the year to implement the intervention.

### What did the school leaders do?

As part of the intervention, the school leaders challenged staff in the following ways:

- Engage with the Mathematics curriculum more effectively by working collaboratively to discuss the relationship between PAT data, the skills in the curriculum and effective teaching strategies.
- Discuss using PAT and other assessment data for different purposes – formative, summative and diagnostic– to expand teachers' understanding of how to interpret and use evidence of learning achievements and needs, including interpreting informal interactions with students, student responses to small group and whole-class tasks, and formal tests.
- Differentiate their teaching instruction for students with different levels of learning needs across their classrooms by using their improved curriculum and assessment knowledge to recognise how skills develop, where students are in their learning and what they need to learn next.

### What did the teachers do?

Teachers decided what they needed to prioritise:

- Focus on mathematics as a matter of priority. As a result of initial analysis of PAT data, the teachers, together with the leaders, determined that the evidence identified both weaknesses and gaps in mathematics across the school. Money and financial maths (worded problems) were identified as weaknesses where skills had been taught, but not well understood, and areas of geometry were identified as gaps where skills had not been taught. This trend was discovered across all year levels.
- Interrogate their data for different purposes, such as identifying students' learning strengths that could be built upon and give students confidence, recognising gaps in students' learning that required targeted instruction, and identifying students with different learning needs and

grouping them together to facilitate effective teaching. Teachers also worked collaboratively to improve the way they reported data, including feedback they gave students and parents.
- Use data to focus on developing student goals, such as helping students to identify the mathematics skills they had mastered, and to understand what they needed to learn next in order to progress, so students had more ownership of their learning and a greater understanding of their own progress.

## Findings

### Challenges

An initial challenge for staff was to access the online PAT data and use the online functionality to interpret student reports. Staff also varied considerably in their own understanding of the core mathematics concepts that were nominated as the focus of the intervention. Working collaboratively meant more skilled staff could provide appropriate guidance to others about how to understand the relevant aspects of the curriculum, use a variety of assessment strategies and ask for feedback from students. An ongoing challenge for staff was to cater for a diverse range of students with different starting points in their learning in the same class.

### Achievements

During the intervention, staff overcame the challenges of accessing online PAT data. They also made progress in their understanding of the core mathematics concepts and continued to work collaboratively to try to find effective ways to cater for a diverse range of students with different starting points.

On average, students at Our Lady of Visitation substantially improved their mathematical understanding. This was clearly shown in improved PAT Mathematics scale scores that tracked progress over 4 years.

Staff feedback in 2018 – after 2 years of the intervention – was that teachers had learnt how to interpret PAT data to find student weaknesses and strengths. Teachers now recognised gaps in some students' learning in mathematics that they had not previously been aware of, and that could now be addressed.

Staff reported that targeted professional learning and development had improved their teaching practices and resulted in an improved professional culture in the school.

Teachers now understood the benefits of taking time to analyse, investigate and interrogate data so they could target teaching instruction with the appropriate 'next steps' to meet the needs of individual students as well as cohorts with the same learning needs.

Teachers could see that taking a team-based, whole-school approach had improved student learning outcomes. They also recognised that students were beginning to understand where they were in their learning and what they needed to learn next, and were able to communicate and celebrate success and progress confidently.

## Conclusion

The intervention of supporting teachers to adopt the Progressive Achievement approach in their interpretation and use of PAT data to inform teaching and learning for mathematics, was highly effective and established a sound foundation for ongoing school improvement. Our Lady of the Visitation is a school where staff continue to develop their understanding of assessment:

- PAT data is being used more to systematically modify learning and teaching programs.
- All staff engage in the analysis and interpretation of PAT Mathematics data. School leaders schedule training sessions and targeted professional learning meetings for staff to analyse and interpret PAT data. They use all evidence collected and discussion as a staff and in professional learning communities to make informed decisions on next steps in their teaching and learning.
- All staff engage in professional learning and development, which is reflective of student needs and goals for improved learning outcomes. Professional learning is scheduled with leadership, and staff members are trained in the use and implementation of PAT. Our Lady of the Visitation call on outside support and expertise, such as ACER, to continue to develop their knowledge and understanding of assessment, using PAT.
- Best practices, success and progress of students across the school are celebrated within the school community. Our Lady of the Visitation makes learning and the progress of students visible through sharing examples of student achievements at whole-school assemblies. This includes, for example, displaying learning from students, and how weaknesses and gaps are supported. In this way the whole school community, including parents, gains a better understanding of the curriculum being taught and the progression of skills from early years through to year 6. Parents are also informed through teacher-student-parent discussions and shared examples of work.

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# 2. TaRL IN ANDHRA PRADESH: USING ASSESSMENT FOR INFORMED TEACHING-LEARNING PRACTICES

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**PRATHAM EDUCATION FOUNDATION[1]**

## Problem identification

India is close to achieving universal school enrolment, with 98 per cent of children aged 6–14 years enrolled in school. However, a decade of Annual Status of Education Report (ASER) survey data highlights a flat learning trajectory over time. Years of schooling are not effectively translating into years of learning across the country. Although an increasing number of children are completing extended periods of schooling, learning remains stagnant. According to ASER 2022, less than 50 per cent of all children in grade 5 can read a simple text at the grade 2 level of difficulty. This alarming figure suggests that more than half of all the children in grade 5 in India require immediate support.

Unacceptably low learning levels of children across grades and massive variation between learning levels of children within grades are causes for concern. The business-as-usual teaching-learning approach of the Indian schooling system, organised by age and grade, emphasises the completion of the grade-level curriculum and, in turn, ends up catering to teaching at the top of the class. In the absence of basic literacy and numeracy skills, children are lagging behind.

| ASER 2022: % children at different reading levels | | | | | |
|---|---|---|---|---|---|
| All children: All India (rural) | | | | | |
| Level | Beginner | Letter | Word | Para | Story |
| Grade | Cannot recognise letters as yet | Can recognise letters but not read words | Can read words but not sentences | Can read sentences at grade I level | Can read text at Grade II level or higher |
| III | 12.1 | 22.6 | 20.8 | 17.3 | 27.2 |
| IV | 7.6 | 15.9 | 16.6 | 19.3 | 40.7 |
| V | 5.9 | 11.7 | 13.0 | 19.1 | 50.3 |

Source: The Annual Status of Education Report (ASER) 2022

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## Pratham's TaRL: An effective solution to address student's learning needs

### Introduction

An innovative teaching-learning approach has evolved through Pratham's 3 decades of working in the education sector in India. This evidence-based and internationally recognised approach is widely known as Teaching-at-the-Right-Level (TaRL) (Banerjee et al., 2016). The approach suggests that regardless of age or grade, teaching should begin at the child's level. The TaRL approach is suited for children aged 7 or 8 and above. It helps children improve their basic language and arithmetic skills in a short period of time.

In the span of 13 years, between 2001 to 2014, Pratham in collaboration with Abdul Latif Jameel Poverty Action Lab (J-PAL) conducted 6 randomised controlled trials (RCTs) in 6 states across India (J-PAL, 2016). The results of these RCTs showed that TaRL led to learning improvement when directly implemented by Pratham staff or volunteers, and indirectly through government partnerships delivered through teachers.

### What makes TaRL different?

In the Indian context in a business-as-usual classroom setting, the teacher's primary objective is to complete the grade-level curriculum. Teachers assess students using pen-and-paper assessments aligned with the curriculum during and at the end of the year. Instruction occurs as one large group, with a focus on whole-class teaching driven by textbooks that prioritise the grade-level curriculum, often resulting in the teacher primarily addressing the needs of the top of the class. The teaching materials are typically limited to grade-level textbooks.

Furthermore, teacher training programs primarily focus on theoretical knowledge and are typically conducted by individuals who are not active teaching practitioners. Administrative officials serve as supervisors for monitoring and support. The learning outcomes measurement system relies heavily on pen-and-paper assessments conducted at the beginning and end of the academic year, offering little feedback to guide course corrections or inform teaching and learning practices.

Pratham's TaRL approach has several core elements that notably differ from the business-as-usual approach of the Indian schooling system. The key elements are divided into in-classroom elements, and supporting and enabling elements.

# TaRL in-classroom elements

## Clearly articulated and achievable goals

Regardless of grade, the objective of TaRL is to help children 'catch-up' on basic reading and math skills. For example, the goal for language is for the child to read a basic text (according to the assessment tool, a grade 2 level text at the 'story' level). A similar pattern is followed for basic arithmetic.

## Simple one-on-one assessment

Before beginning to work with a group of children, it is important that the instructor spends time with each child to understand the child's current level. The instructor and the child sit together and are encouraged to read and do some simple arithmetic tasks. The one-on-one interaction between the teacher and each child is an essential first step. This assessment is also used to group children for instruction and for tracking children's progress. Figure 1 shows an example of a reading assessment for language with the corresponding levels.

**Figure 1: ASER reading assessment tool and levels**
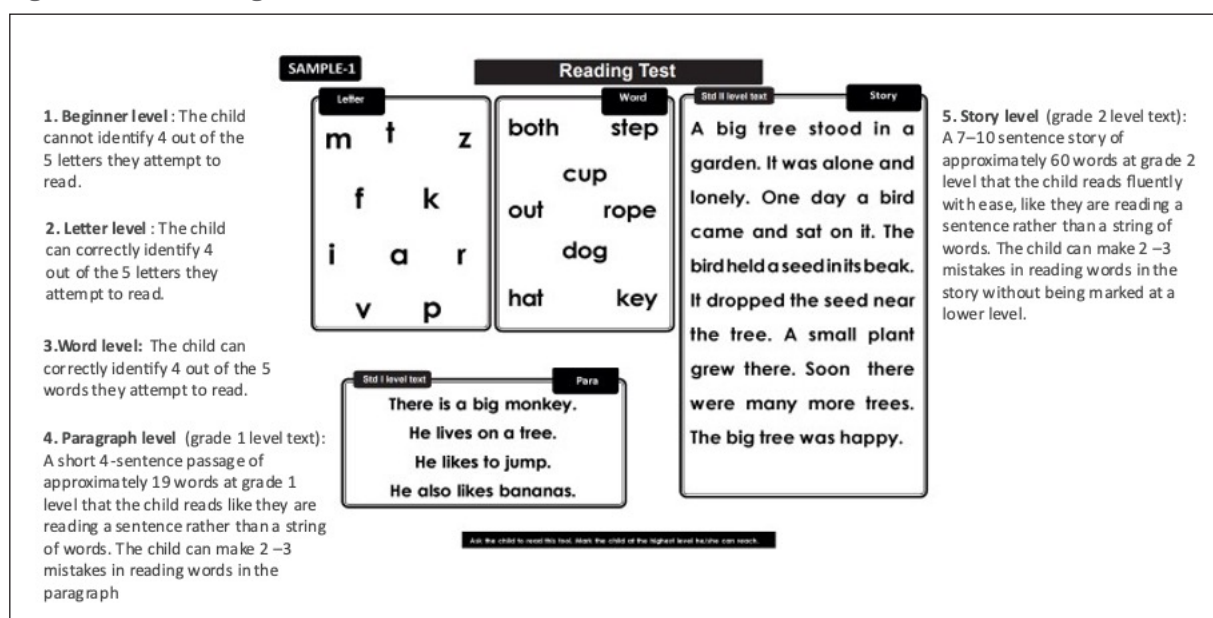


Source: Pratham Education Foundation and ASER Centre

## Grouping as per level

Children are grouped according to their learning level based on the assessment, and not by grade (see Figure 1). This is where assessment translates into action. Children quickly move from one group to the next as their learning progresses.

## Teaching learning activities and material

Specific group activities focus on helping each child progress to the next level. Combining a variety of activities in big and small groups has proven to be effective for maximising learning. Some activities are similar for all groups, and some are tailored to the level of the group. For example, in a reading period of about an hour, a number of basic activities are done. Common activities include reading and discussing stories aloud. Phonetic activities, word games, and mind-mapping activities are played, keeping in mind the level of the group.

Additionally, appropriate materials are provided to support the teaching-learning process. For TaRL, Pratham has developed special supplementary materials (see examples in the Annexure), as textbooks for a particular grade are often more difficult than the child's current ability to read. Moving away from the usual age-grade organization of teaching to level-wise groups for instruction is an important element of the effectiveness of this approach. As children make progress, they move to the next group.

Figure 2 shows how the TaRL process unfolds in the classroom.

**Figure 2: The simple process of TaRL unfolding in the classroom**



1. **Assessment**
Simple one-on-one assessments help group children by level, instead of grade, for instruction.

2. **Appropriate activities and material**
There are a set of activities and materials for reading and arithmetic that are appropriate for the level of each group and that enable children to progress.

**4. Tracking progress**
Similar assessments are used to track children's progress and reorganise groups.

3. **Big group and small group**
Children do activities in groups and also individually. Children progress quickly and move into the next level group.

Source: Pratham Education Foundation

## Supporting and enabling elements

### Leaders of practice

Creating a cadre of leaders of practice within the government system is crucial to the approach. Leaders of practice conduct practice classes for at least 20 to 25 days in order to gain a deeper and hands-on understanding of practising TaRL in the classroom. The aim is for leaders of practice to provide informed on-site academic support and to mentor teachers.

### Measurement and review

Simple assessment is used to group children, organise classroom instruction, and track children's progress over time. Accessible data is used to aid frequent discussion around children's learning outcomes with teachers, and is reviewed in order to ensure movement towards goals and guide any changes that need to be made.

Pratham's TaRL approach has evolved while keeping in mind scalability. All available resources are used frugally and deployed as efficiently as possible. Effective use of time is another key element of the approach. While working at scale, 2 hours are blocked to teach children as per their level. with the grade-level curriculum set aside.

## TaRL partnership in Andhra Pradesh

An example of Pratham's TaRL government partnership has been underway in the south Indian state of Andhra Pradesh since 2022. Pratham, in collaboration with the Education Department of Andhra Pradesh, is implementing the remedial learning program to help children in grades 3–5 improve their basic language and arithmetic skills. The section below elaborates on the insights from this partnership.

### Statewide learning status check

The academic year 2022–23 marked the return of children to school after 2 years of school closure owing to the pandemic. As children missed 2 years of formal schooling, the Education Department of Andhra Pradesh was keen to conduct a rapid learning status check before deciding on the course of action for the remainder of the school year.

In July 2022, in collaboration with Pratham, the department conducted an ASER-like census for all children in grades 2–10 in government schools across the state to assess children's basic language and arithmetic skills. It was conducted by government school teachers in an oral one-on-one setting. Pratham team conducted virtual orientations for government resource personnel and teachers on the ASER assessment tool and the assessment process. The assessment was conducted

across 43,000 schools with a variety of languages as medium of instruction, covering 33,00,000 children across grades. This mammoth task was undertaken within 3 weeks across the state.

The initial results from the July baseline highlighted low learning levels of children across grades in the state. The department made a decision to implement a TaRL partnership for children in grades 3–5 in partnership with Pratham. Additionally, the baseline helped the department plan for learning recovery interventions for children in grades 6 and above as well. The statewide baseline data helped inform decision-makers of the action required in order to course correct. This was a great case of the use of assessment in supporting teachers and schools to account for the learning of all students.

The baseline assessment had a definite outcome as teachers tested children by themselves using the ASER tool. The matter of low learning levels was visually apparent and shifted from a data point to an in-classroom reality for teachers. This awareness in the form of evidence of low learning levels resulted in the smooth and effective implementation of the TaRL program across Andhra Pradesh.

## A case for practice classes

As part of the partnership, Pratham provided materials and training to 128 proactive teachers and resource personnel, identified by the government and termed 'master trainers', who led the program implementation. Master trainers trained 2,615 mandal level resource persons (MLRPs).[2] As part of their training, they implemented the program in the classroom themselves for 18 to 20 days. Thereafter, master trainers and MLRPs trained 65,634 primary school teachers, who reached about 11,19,572 children across 36,183 schools.

**Figure 3: TaRL in action: Children doing a big group activity with the number chart**
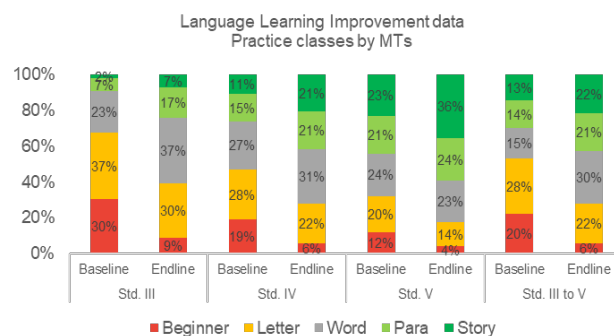


Source: Pratham Education Foundation

Both master trainers and MLRPs conducted practice classes, and the data collected from these practice classes pointed towards improved learning outcomes in children within a span of just 18 to 20 instructional days. These practice classes helped trainers gain a deeper understanding of the approach and its classroom implementation, leading to improved quality of training assistance, mentoring and monitoring of the program.

The graph below shows learning outcomes as reported by government master trainers through their practice classes. Similar results were noted in the data gathered from practice classes conducted by MLRPs. As can be seen in Figure 4, the proportion of children reading at the paragraph and story levels increases during that period.

**Figure 4: Learning improvement data from practice classes**



Source: Pratham Education Foundation

## Data collection and usage

Data collection was an essential part of the program's design. Baseline and endline assessment data was collected through the government's data entry portal. Master trainers and MLRPs conducted monitoring visits to provide on-site support to teachers. Previously conducted practice classes factored into classroom visits and smooth program implementation. Monitoring data was collected based on clear indicators related to teacher training, appropriate usage of teaching-learning materials, grouping of children by level, program awareness, etc. School visits were prioritised based on assessment and monitoring data. Additionally, both data sets were discussed during regular review meetings conducted at the state, district and block levels with relevant government stakeholders to course correct and plan ahead.

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2    Mandal is an administrative unit in Andhra Pradesh, similar to a block in a district. Mandal level resource persons are responsible for providing decentralised academic supervision and support to teachers in their respective mandal.

The learning improvement observed at the end of the intervention was as follows:

**Figure 5: Learning improvement data from baseline and endline assessment**



Language Learning Improvement data
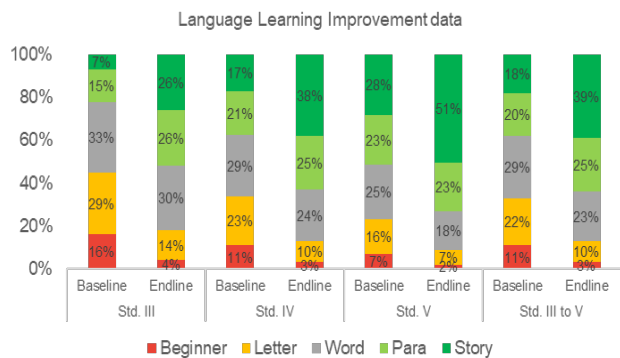
Source: Pratham Education Foundation

## Key findings

The key program findings were as follows:

- The state-wide baseline assessment of children based on the ASER tool led to a better understanding by government officials on low learning levels, which then resulted in the data-driven decision to implement learning recovery interventions.
- A dedicated team of government officials appointed at the state and district levels for training, mentoring and reviewing enabled smooth communication, coordination and course correction.
- Practice classes by government trainers enhanced the quality of teacher training and program monitoring.
- Continuous review of assessment and monitoring data through review meetings at block, district and state levels helped provide quick action for supporting progress. The data helped provide need-based academic support to schools.

The success of the program in 2022–23 convinced the department to continue implementing the TaRL program in Andhra Pradesh. In 2023–24, the partnership entered its second year.

## Conclusion

The TaRL approach enables significant and quick improvements in basic reading and arithmetic skills, as observed in the case of Andhra Pradesh. Lessons from the state of Andhra Pradesh are applicable to other TaRL programs implemented across different geographies.

A simple assessment tool is essential for and at the core of the TaRL approach, which helps children improve their basic skills.

The oral assessment tool is easy to administer and interpret, making immediate action possible. It allows the teacher to instantly identify the child's basic learning levels, providing an opportunity to adjust instruction according to the child's needs, group children appropriately, and track their learning progress. This approach enables children to build foundational skills in a short period. The TaRL approach emphasises that assessment plays a crucial role in the teaching and learning process by providing the necessary evidence of students' learning levels. This evidence can be used to adapt teaching and learning strategies, ultimately leading to improved learning outcomes for all children.

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## Annexure

For more details: see https://www.pratham.org/ and https://asercentre.org/

# Sample teaching and learning material








**Q.14. : Understand the pattern given below and write the appropriate numbers in the empty boxes.**


**Q.1. : Match the shapes based on the given numbers.**




**Q.2. : Count the given pictures and draw a circle to the correct number.**

Source: Pratham Education Foundation

# 3. TEACHERS' PERCEPTIONS OF THE ADOPTION OF STANDARDS-BASED ASSESSMENT AND THE USE OF LEARNING DATA IN DELHI

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## Abstract

The Delhi Board of School Education (DBSE) has introduced standards-based assessments for assessing students in schools affiliated with the Board. Standards-based formative assessments help teachers provide actionable feedback to students and adjust classroom strategies, enabling effective pedagogical support based on the learning needs of every student. In this case study, the authors describe teachers' perspectives on adopting standards-based assessments in their own classrooms and the use of assessment data to inform teaching and learning. The participants in the case study include teachers from DBSE schools in Delhi. The case study found that participants' attitudes towards standards-based formative assessments are encouraging, suggesting that there is buy-in for the practice among practitioners.

## Introduction

Today, the Indian education system is facing 2 significant challenges. There is evidence that learners are not gaining the expected levels of foundational language and numeracy skills (ASER Centre, 2022). Also, learners are not acquiring the skills essential for work and life (MHRD, 2020).

The National Education Policy (NEP) 2020 proposes system-level changes to improve teaching and learning practices in India. It recommends focussing on regular formative assessments and the measurement of competencies, including higher-order thinking skills, during the school years (MHRD, 2020).

The Delhi Board of School Education (DBSE), established in 2021, has adopted a standards-based assessment system. In a standards-based assessment system, formative assessments are expected to regularly monitor a student's learning progress, supporting students to master prerequisite knowledge and skills corresponding to the appropriate level of standards. Such assessments are meant to help teachers identify standards where students struggle (Stiggins & DuFour, 2009).

The assessment system of DBSE is aligned with the recommendations of NEP 2020. It is based on the assessment guidelines of the Government of Delhi, which emphasise the need for tracking student progress, the use of multiple methods of assessment, and fairness. Currently, all DBSE-affiliated schools are run by the Government of Delhi and are located in New Delhi.

Formative assessments are widely acknowledged to be essential in the teaching and learning process (Black & William, 1998; Madison-Harris et al., 2012; Miller, 2019), and the data from formative assessments can be used to adjust instructions to target specific learning gaps among learners (Gillies, 2014). This case study aims to understand the perspectives of teachers from schools of the DBSE on the adoption of standards-based formative assessment and the use of data in teaching and learning.

Traditionally, across schools in India, assessments have been used to report student achievement under 'pass' or 'fail', or marks or percentages that do not provide a meaningful understanding of student achievement. They only make sense when compared to scores of other students (Sharma, 2015). Further, the assessment system places a disproportionate emphasis on the grades 10 and 12 exams. These exams are conducted centrally by different education boards and often function as gatekeepers to higher education. The grade 10 assessment performance decides which stream of education – science, commerce or humanities – a student is qualified to enter, and the grade 12 assessment performance is instrumental in gaining admission to higher education institutions. This exam-driven school education leads to excessive stress among students.

Acknowledging the challenges due to the existing assessment culture in the country, the DBSE model of assessment employs a combination of internal (classroom) and board-led term-end assessments. This allows students to demonstrate their understanding of the curriculum throughout the academic term and also provides a holistic evaluation of their progress (DBSE, 2022).

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[1]   Australian Council for Educational Research (India)
[2]   Delhi Board of School Education (DBSE)

## DBSE standards-based assessments

Standards-based assessment (SBA) systems give meaning to students' performance on assessment tasks by referencing them with predetermined standards, and reporting performance with detailed descriptions of the standards and performance levels. Comparing formative assessment data against such standards helps teachers to modify teaching to support students to move from a lower achievement level to a higher achievement level (Sharma, 2015).

The DBSE standards-based assessment process, developed by the Australian Council for Educational Research (India) is based on the DBSE curriculum, which is aligned with the International Baccalaureate (IB) curricular approach. The IB approach defines assessment criteria for each subject and provides descriptions of achievement levels in each of those criteria (see examples in Figure 1). DBSE has adopted the IB system for the standards-based assessments in grades 1 to 10. The curriculum, assessment tasks and associated rubrics have been developed by DBSE subject experts (see example

in Figure 2). For grades 11 and 12, DBSE subject experts in collaboration with ACER India have developed an assessment approach in alignment with the IB system. An appropriate IB program may be adopted in the future. The level descriptions for grades 1 to 12 have been used as the standards for reporting the DBSE assessments.

All DBSE teachers underwent training in delivering the IB curriculum. Further, DBSE organised a series of co-creation workshops involving teachers and curriculum developers, to develop unit plans for each grade as well as the formative assessment tasks. These tasks were designed to assess the different criteria derived from the level descriptions.

In 2022–23, there were 11 schools with students enrolled in K–8, and 20 schools with students enrolled in grades 9–12 under DBSE. All 31 schools implement standards-based assessment practices for different purposes.

Our case study focuses on the use of formative standards-based assessments, which are developed by teachers and implemented to inform the teaching and learning process.

## Criterion A: Knowing and understanding

At the end of Year 3, students should be able to:

**i.** describe scientific knowledge
**ii.** apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations
**iii.** analyse information to make scientifically supported judgments.

**Figure 1: Sample level descriptions from IB Source: IB Sciences Guide (MYP), 2014**

| Achievement level | Level descriptor |
|---|---|
| 0 | The student does not reach a standard indicated by any of the descriptors below. |
| 1–2 | The student is able to:<br>• recall scientific knowledge<br>• apply scientific knowledge and understanding to suggest solutions to problems set in familiar situations<br>• apply information to make judgments. |
| 3–4 | The student is able to:<br>• state scientific knowledge<br>• apply scientific knowledge and understanding to solve problems set in familiar situations<br>• apply information to make scientifically supported judgments. |
| 5–6 | The student is able to:<br>• outline scientific knowledge<br>• apply scientific knowledge and understanding to solve problems set in familiar situations and suggest solutions to problems set in unfamiliar situations<br>• interpret information to make scientifically supported judgments. |
| 7–8 | The student is able to:<br>• describe scientific knowledge<br>• apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations<br>• analyse information to make scientifically supported judgments. |

Source: ACER India

**Figure 2: Sample rubrics from a science task for grade 8 students developed by DBSE subject experts**

| Criterion A | 0 | 1-2 | 3-4 | 5-6 | 7-8 |
|---|---|---|---|---|---|
| **(i) Explain scientific knowledge.** | The student does not reach a standard identified by any of the descriptors. | Can enlist some of the constituents of biodiesel. | Can enlist all the constituents of biodiesel. | Can outline the components of biodiesel. | Can explain the difference in components. |
| **(ii) Apply scientific knowledge and understanding to solve problems set in familiar and unfamiliar situations.** | The student does not reach a standard identified by any of the descriptors. | Apply scientific knowledge and understanding to enumerate the advantages and disadvantages of biofuel and petroleum diesel. | Apply scientific knowledge and understanding to suggest which one is a better fuel in a given set of conditions by comparison with other diesel. | Apply scientific knowledge and understanding to ascertain what kind of fuel is good in current context. | Apply scientific knowledge and understanding to ascertain what kind of fuel would meet the energy demands of the future world. |
| **(iii) Analyse and evaluate information to make scientifically supported judgments.** | The student does not reach a standard identified by any of the descriptors. | Can understand that the product of combustion of either carbon or hydrogen. | Can understand the product of combustion of both carbon and hydrogen. | Can express his/her answer in the form of a word equation. | Can relate the product of combustion with environment. |

Source: ACER India

## Case study methodology

This case study describes the perspectives of teachers on adopting standards-based formative assessments in DBSE schools, their own perceived readiness for the adoption, knowledge and skills on SBA, and the use of assessment data for learning. This case study is insightful for researchers, policymakers and practitioners considering the Board is newly established, with 2023 being the first year when students appeared for school-leaving examinations. The findings from the case study will help the Board identify areas where additional support and training may be required in the area of standards-based assessment. Teachers' perceptions can also help refine the newly adopted assessment system.

A qualitative case study was deemed appropriate because the purpose was to gain thorough knowledge of how standards-based assessments are implemented, and the difficulties teachers face with the implementation. The aim was also to bring out the voices of teachers who are at the heart of delivering this assessment reform.

Purposive snowballing was used to select the participants (Campbell et al., 2020). In total, 11 teachers from government schools affiliated with DBSE participated in the case study. They were either involved in training other teachers or teaching

in secondary classes (grades 6–10) in DBSE schools. They were all involved in teaching at least one of the core subjects– English, Hindi, mathematics, science, and individuals and societies. There are approximately 500 teachers and 20 teacher trainers for these subjects under DBSE.

Data on teacher perceptions were collected using semi-structured interviews to gather in-depth information from the respondents. The interviewers provided direction to the respondents while being flexible and adaptable in their approach (Pathak & Intratat, 2012). Participation was voluntary and consent of participants was taken before starting interviews. Three researchers independently reviewed the transcripts twice to interpret the data and derive insights from the interviews (Stake, 1995).

While the findings from the case study cannot be generalised, they provide some insights into teachers' perceptions of the new approach. To have sound evidence on the impact of the SBAs on classroom practices or learning achievement, it would be worth considering developing and implementing an accompanying monitoring and evaluation process going forward.

## Reflection of teachers' perceptions

This section reports the findings from the interviews conducted with 11 teachers from DBSE-affiliated schools who participated in the case study. The findings can be broadly classified into 3 categories: teachers' perceptions of the adoption of standards-based assessments; teachers' perceived knowledge, skills and readiness to adopt standards-based assessments; and teachers' use of assessment data.

### Teachers' perceptions of positive impact of SBAs on students' learning and well-being

Teachers in this case study suggest that the standards provide clear descriptions of current student achievement and allow teachers to access descriptions of the path ahead. All of this leads to better student self-reflection. These excerpts from the interviews capture teachers' thoughts:

**'Yeah. They [the students] are reading it [standards, descriptions and criteria]. And that has made a difference to their understanding [of their own learning].'**

(English Teacher[3], Delhi Government School, MA (English & Psychology), 26 years of experience)

**'And even students, they are able to understand why they are able to get that grade or what they need to do to achieve that level. They have become comfortable. They now know that it is not the grades that matter. It is the level that they achieve that is more important.'**

(Science Teacher, Delhi government School, MSc, 12 years of experience)

The teachers also believed that students were less stressed under the assessment system as the quote below shows.

**'… they feared about getting a particular percentage. Only when you get 80 per cent or 90 per cent plus, only then you'll be considered good … This cut-throat pressure is not there. Cut-throat competition and pressure is a bit reduced, which is a positive sign, I believe.'**

(English Teacher, Delhi Government School, MA (English) & BEd, 30 years of experience)

### Teachers' perceptions of positive impact of SBAs on students' learning and well-being

Participants expressed a clear understanding that standards-based formative assessments provide actionable feedback to teachers. They also mentioned using the standards to set goals in their teaching. The quote below illustrates this point well. Knight and Cooper (2019) also suggest that teachers understand how to use the results of SBAs for teaching.

**'I was amazed to see that. I was very clear where I went wrong, what was missing because the points they were not able to explain and then questions were coming … So, it was very good feedback for me to understand the level of understanding of my students.'**

(Mathematics Teacher, Delhi Government School, M.Sc. Maths, 16 years of experience)

Participants were asked about how the new system had affected the development of assessment tasks, and they suggested that they now have a clearer understanding of what each task is supposed to assess. In terms of task development, the need to link tasks to specific standards has changed practices. Now teachers are required to consider how tasks relate to specific outcomes, rather than repeating patterns or tasks from assessments developed in earlier years.

### Teachers' perception of readiness to adopt standards-based assessments

It is well established that teachers' assessment literacy has an impact on student achievement (Xu & Brown, 2016, Brookhart, 2011, Stiggins, 1995). Despite the evidence, teachers are tasked with being responsible for assessments without sufficient training (DeLuca, 2012; Lam, 2015). Therefore, it becomes vital to understand teachers' perception of their own knowledge, skills and confidence to implement SBAs.

Participants reported receiving training on standards-based assessment; however, they also expressed a need for further training and support, especially as many are shouldering additional administrative responsibilities. They also reported receiving support from their headteachers and through peer support groups:

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[3]  Teacher refers to both male and female teachers in this case study report.

**'… resource group is like we are added on our WhatsApp group. So whatever help is required, we help each other instantly, you know … So it's very good.'**

(Mathematics Teacher, Delhi Government School, MSc (Maths), BEd, 16 years of experience)

As noted in the literature (Spencer, 2012; Swan et al., 2014), parents can find reports based on SBAs difficult to understand. This was mentioned by participants and many of them identified communicating with parents as an area that requires support. The form of the support may extend beyond training as necessary.

## Use of assessment data by teachers

Using formative assessment data to modify teaching strategies is essential for improving student achievement (Gusky, 2010). However, in South Asia, assessment is often an end object itself, without considering its use in further teaching (Kaushik, 2020).

In this case study, teachers mentioned changing their teaching strategies based on assessment results. Further, some teachers also reported adapting their teaching to the abilities of specific children based on the assessments:

**'It has obviously made a difference because as I said, we know exactly like among 40 students, like, say, 10 students are at level 1. So we … we can clearly make our pedagogical changes. What we can do to shift that student from level 1 to level 2 and level 2 to level 3 and so on.'**

Teacher, Delhi Government School, MPhil (Economics), MA (Political Science), MEd, 15 years of experience)

## Conclusion

Participants' attitudes towards SBAs are encouraging, suggesting that there is buy-in for the practice among practitioners. This is the crucial first step for the effective implementation and scaling of SBAs in DBSE schools. Teachers have remarked on the overall positive impact of SBAs on students, suggesting not just better self-evaluation but also a reduction in stress related to assessments.

In order to ensure the sustainability and scaling up of SBA practices in the schools affiliated with DBSE system, the

most critical need identified by teachers is implementation support through professional development. The findings in the case study do suggest that there is initial acceptance of this educational reform among teachers. Further research is needed to establish a link between teacher professional development and data-informed teaching strategies. In the long run, data on student learning outcomes will help to determine if formative assessments and assessment-informed teaching methods are helping students achieve higher standards as they progress through the school years.

## Informing teaching practices

### Enhancement of assessment literacy

The findings suggest that participants are better able to integrate assessments into their teaching-learning processes when they use SBAs. Participants mentioned being better able to identify gaps and also changing their teaching strategies based on assessment data. Use of SBAs and the associated training has enhanced teachers' confidence and ability to use the information provided by assessment.

While teachers are confident about their ability to implement SBAs, they do remark on the need for additional training and support. In particular, they want help in communicating the changes in the assessment system to parents. Research suggests that partnership with parents is a key aspect of improving learning outcomes (Epstein, 2018).

In order for the implementation of SBAs to inform the teaching-learning process to succeed, it is essential that both teachers and school leaders are provided with adequate support and training. Teachers, especially, need to be provided with support to develop appropriate tasks based on the standards and to ensure that their interpretations of results are consistent and appropriate. Community or parental involvement exists to some degree, though it needs to be strengthened, particularly through proper communication.

### Assessment-informed teaching practices

Brinkman mentions in the 2019 study that teachers' culturally shaped beliefs have influence on their own practices. Therefore, the first step towards any reform is to ensure that teachers believe in the proposed change. This case study suggests that there has been acceptance of the new assessment system in schools under DBSE among the participants. However, only a small proportion of teachers were interviewed for the case study. Therefore, it is essential to understand how prevalent the change in attitude is among teachers in the DBSE system through a large-scale study.

DeLuca and colleagues (2019) suggest that teachers often procedurally implement assessments for learning without shifting their overall pedagogical approach. Future studies must, therefore, include a more in-depth examination of the teaching-learning strategies in classrooms, through implementation research etc., to shed light on whether this change has truly taken root in the system.

An element not addressed in this case study is school leaders' perception of SBAs. There is evidence to suggest that school leadership has an impact on student outcomes, especially through direct impacts on teachers and their work (Day et al., 2020). It is therefore valuable to study what the attitude of school leaders is towards the SBA approach.

## Informing learning

### Student self-regulation

Improved student self-regulation is associated with higher student achievement (Zimmerman & Schunk, 2011). A significant finding brought out by the case study is that teachers perceive a higher degree of student self-learning and self-regulation. SBAs allow students to understand their own performance better and can also help in understanding what the next step in their learning looks like.

This approach needs to be strengthened, and systematic discussion of criteria and descriptions of achievements should be carried out with students prior to assessment activities. This will strengthen student self-regulation and self-improvement.

### Reduced stress among students

An unexpected but positive finding was teachers' perception that stress levels related to assessments among students have reduced. This is surprising because the introduction of a new system is expected to increase stress levels for teachers and students (Vatterott, 2015).

The amount of stress on students due to assessments is a matter of concern in India. A significant recommendation of NEP 2020 is to reduce stress on students, as far as possible. This approach of assessment is an important step in that direction.

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# 4. FOSTERING LEARNING THROUGH ASSESSMENT: AGA KHAN UNIVERSITY EXAMINATION BOARD CASE STUDY ON SUPPORTING TEACHERS AND STUDENTS IN PAKISTAN

SHEHZAD JEEVA
MUNIRA MUHAMMAD RANGWALA
ALI ASLAM BIJANI

## Introduction

Aga Khan University Examination Board (AKU-EB) is the first private-sector university-led, trans-provincial examination board in Pakistan, operating within the K–12 education system. It aims to shift the focus from rote learning to higher-order thinking skills, preparing students for higher education and lifelong learning.

AKU-EB is entrusted with the authority to confer 2 distinctive qualifications by the Government of Pakistan. These are, Secondary School Certificate (SSC) and the Higher Secondary School Certificate (HSSC), catering to students in grades IX–X and XI–XII, respectively, before applying to universities for undergraduate studies.

AKU-EB administers 2 examination sessions each year, in May and October. As per the government policy, at the SSC level, students choose between 2 distinct academic streams: science and humanities. To achieve the certificate in each stream, a student must attend 16 examinations over 2 years, i.e., 8 examinations per year, consisting of the same 8 subjects (5 compulsory and 3 elective subjects). Similarly, at the HSSC

level, students can choose to pursue their academic journey within 5 specialised streams: pre-medical, pre-engineering, science general, commerce, and humanities. To achieve the certificate in each stream, a student must attend 14 examinations over 2 years, i.e., 7 examinations per year, consisting of the same 7 subjects (4 compulsory and 3 elective subjects).

AKU-EB designs a set of 2 test tools for each subject that encompasses multiple-choice questions (MCQs) and constructed response questions (CRQs) / extended response questions (ERQs). In addition, subjects requiring the demonstration of practical skills are evaluated through a set of test tools based on practical objectives for evaluation of students' practical proficiencies. Each year, AKU-EB delivers around 260 test tools country wide.

At the conclusion of the May examination session, we share a comprehensive customised report known as the School Performance Report (SPR) with affiliated schools. This report offers detailed feedback on students' performance, including insights down to the item level for each paper. Additionally, we provide marking notes that contain qualitative analyses of students' responses to constructed and extended response questions.

## Data generation at AKU-EB and analysis

At AKU-EB, examination data (students' responses) is captured using OMR scanning for multiple-choice questions and screen marking for constructed / extended response questions. The examination data undergoes a rigorous analysis using item response theory (IRT) and classical test theory (CTT) to examine various psychometric indicators. IRT is primarily used for decision-making, while CTT is employed for decision-making and reporting purposes. The results are communicated to stakeholders via the examination board's website, and

**Figure 1: Process of data generation**
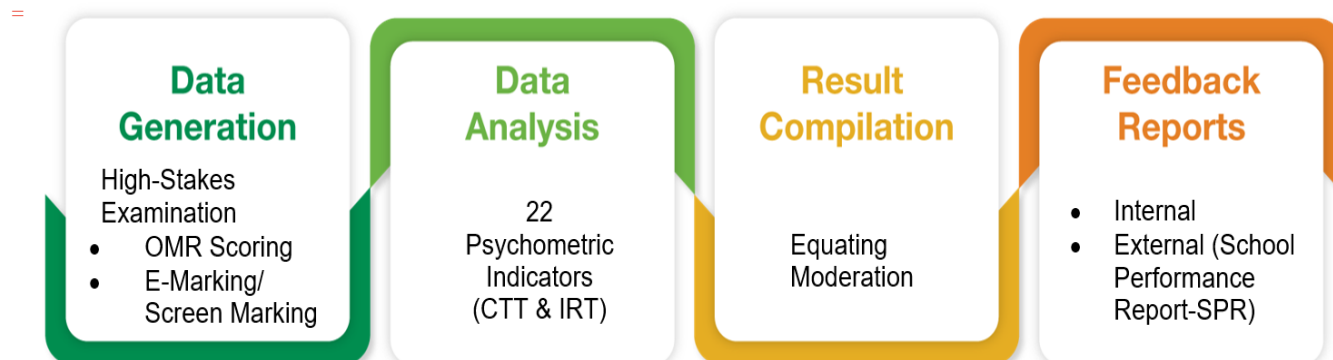


Source: AKU-EB

each student receives a transcript reflecting their personal achievements. Figure 1 shows AKU-EB's process of data generation.

## The purpose of the School Performance Report

The objective of the development and dissemination of the School Performance Report (SPR) has 2 aspects:

The developmental aspect:

- ▶ encourages continuous improvement in teaching, learning and assessment in schools through reflective approach
- ▶ promotes the culture of data-driven decision-making in schools
- ▶ fosters motivation among school leadership and teachers.

The building trust and credibility aspect:

- ▶ ensures the transparency of the examination scoring processes
- ▶ develops customised and need-based trainings based on country-wide and region-wise performance
- ▶ develops customised and need-based trainings based on country-wide and region-wise performance

**Figure 2: Purpose of the SPR**
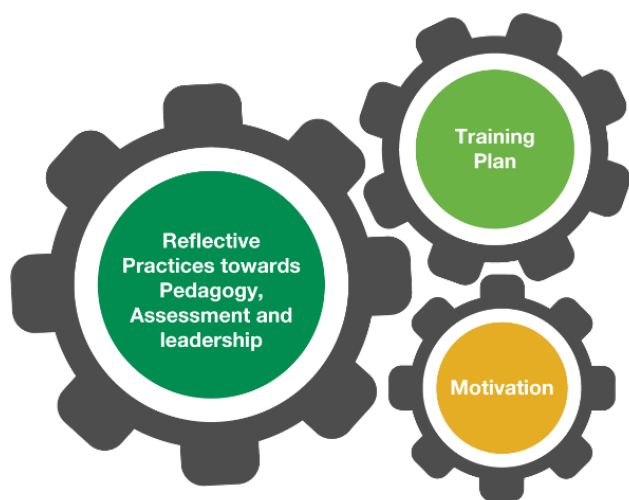


The key focus of this case study is the developmental aspect to explore how the SPR is used by different stakeholders to improve teaching, learning and assessment practices.

## Features of the School Performance Report

SPR is generated using big data gathered during the May exam session (for the October exam session, the report is not generated because the candidate count is low), allowing for performance trends over the years at different certificate levels and analysis to provide meaningful outcomes in both qualitative and quantitative form. The SPR offers valuable comparative feedback, comparing each school against the national norm, on student learning outcomes assessed in the examination.

In the SPR, the data is reported in the form of grades (A-1 to F)[1] and in terms of scores (average scores). The flow of SPR is carefully designed using a funnel approach for reading and comprehending the data. The report initially provides an overview of performance trends over the 3 years. This is to provide a glimpse of the performance achieved by the school over the years (see Figure 3).

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[1] The details of grades A-1 to F with reference to scores are given in Appendix 1.

**Figure 3: Trend of a school's performance over 3 years**
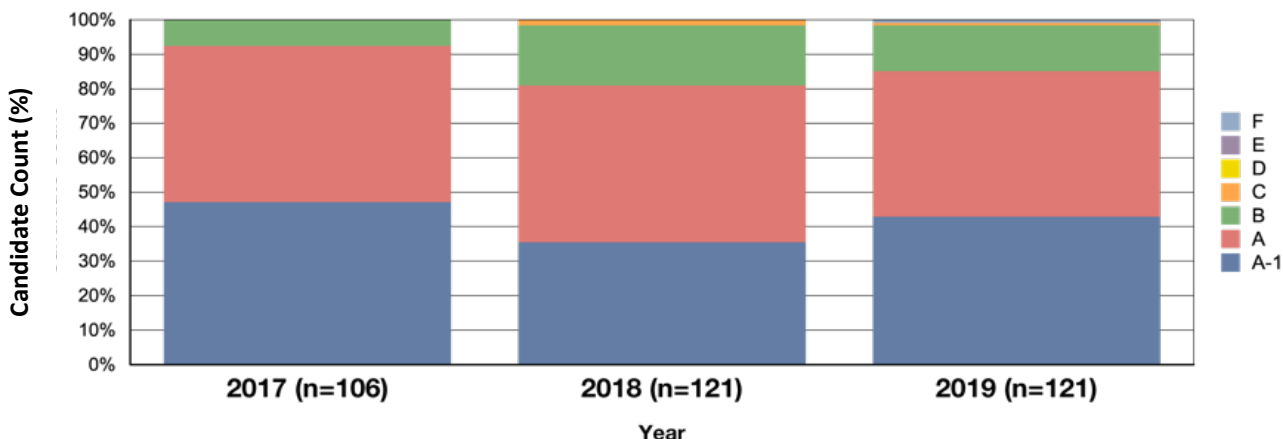


Source: AKU-EB

For comparison with other schools of overall performance, the report provides an insight into how a school has performed against the national norm represented against each grade boundary (see Figure 4).

In addition to the overall performance, if the school offers multiple streams (science, humanities etc.), the performance of the school in comparison with the national norm is also provided against each stream.

The report also shows the comparison of the school in each subject with that of the national norm. This is based on the average scores obtained by a school in a particular subject against the national norm. This helps school leadership and subject teachers to evaluate subject-specific performance (see Figure 5).

**Figure 4: Overall performance of a school in comparison with national norm**

| Grade | Your School | All Schools |
|-------|-------------|-------------|
| A1 | 43.0% | 18.1% |
| A | 13.2% | 24.0% |
| B | 13.2% | 23.5% |
| C | 0.8% | 18.0% |
| D | - | 5.0% |
| E | - | 0.1% |
| F | 0.8% | 11.3% |

Source: AKU-EB

**Figure 5: Subject-specific performance of a school in comparison with the national norm**

| Subject | Max. Marks | Average Marks | | Average Marks Differences (Your School - All Schools) | | | |
|---|---|---|---|---|---|---|---|
| | | Your School | All Schools | Overall | MCQ | CRQ | Practical |
| *Compulsory* | | | | | | | |
| English Compulsory | 75 | 58.24 | 47.08 | 11.16 | 4.74 | 6.43 | |
| Urdu Compulsory | 75 | 57.88 | 51.4 | 6.48 | 1.89 | 4.59 | |
| Islamiyat | 50 | 39.4 | 33.87 | 5.53 | 1.99 | 3.54 | |
| Ethics | 50 | 43.5 | 33.28 | 10.22 | 4.28 | 5.94 | |
| Pakistan Studies | 50 | 32.67 | 28.73 | 3.93 | 0.67 | 3.28 | |
| Mathematics | 75 | 63.42 | 49.22 | 14.19 | 7.93 | 11.23 | |
| | | | | | | | |
| *Science* | | | | | | | |
| Physics | 75 | 60.18 | 48.37 | 11.81 | 4.12 | 7.19 | 0.57 |
| Chemistry | 75 | 66.74 | 51.32 | 15.42 | 6.45 | 8.61 | 0.97 |
| Biology | 75 | 66.22 | 51.64 | 14.58 | 5.98 | 8.73 | 0.48 |

Source: AKU-EB

The report delves further into item analysis to show the strength and weaknesses of the students. This is shown by the comparison of a school performance on each item against the national norm. Separate tables are provided for MCQs (Figure 6) and CRQs/ERQs (Figure 7) items so that teachers can get an overview of the students' skills. Furthermore, Figures 6 and 7 include the student learning outcome (SLO) numbers as specified in the syllabus document developed and shared by the examination board. The cognitive level of each item is also indicated. This is done to provide information about the concept (SLO) the item aligns with, as well as the level of cognitive ability it tests.

For example, in Figure 6, the item 1 is aligned with the SLO number 1.1.3 and the correct answer key of the item is 'C'. The cognitive level of the question is 'application' (A) and the performance of the school is that 79 per cent of their students have attempted this question correctly. However, the national performance shows that 84 per cent of students got this question correct. Thus, against the national norm, the school performance is slightly lower, and the teachers could reflect upon teaching, learning and assessment practices of the aligned concept.

**Figure 6: Mathematics item performance compared with the national norms (MCQs)**

## Performance in Mathematics MCQ in 2019 SSC Part-I

Table 6c: Comparison of your school with all other schools

No. of Candidates: 65

| Question ID | SLO No. | Answer Key | Level of Question | Your School Prop. Correct | All Schools Prop. Correct | Proportion Difference |
|---|---|---|---|---|---|---|
| 1 | 1.1.3 | C | A | 0.79 | 0.84 | -0.05 |
| 2 | 1.2.2 | B | A | 0.81 | 0.82 | 0.00 |
| 3 | 1.2.1 | D | U | 0.85 | 0.81 | 0.04 |
| 4 | 1.5.2 | D | K | 0.96 | 0.85 | 0.11 |
| 5 | 1.6.3 | A,B | U | 0.79 | 0.75 | 0.04 |
| 6 | 2.5.5 | D | A | 0.85 | 0.84 | 0.02 |
| 7 | 2.6.1 | B | A | 0.98 | 0.95 | 0.03 |
| 8 | 2.1.1 | B | U | 0.71 | 0.65 | 0.06 |
| 9 | 2.4.1 | U | A | 1.00 | 1.00 | 0.00 |
| 10 | 3.1.1 | D | U | 0.77 | 0.72 | 0.05 |

**Proportion Difference**

Q1. ⯆ -0.05

Q2. ▬ 0.00

Q3. ⯅ 0.04

KEY:
K = Knowledge
U = Understanding
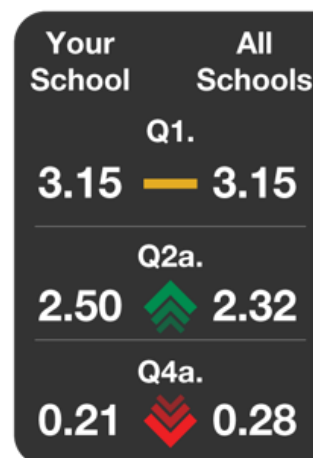A = Application

Source: AKU-EB

Similarly, the performance of CRQs and ERQs are also reported; see Figure 7.

**Figure 7: Mathematics item performance compared with the national norms (CRQs and ERQs)**

## Performance in Mathematics CRQ in 2019 SSC Part-I

Table 6d: Comparison of your school with all other schools

| Question ID | SLO No. | Total Marks | | | Average Marks of Your School | | | Average Marks of All Other Schools | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | K | U | A | K | U | A | K | U | A |
| 1 | 1.6.3 | | | 5 | | | 3.15 | | | 3.15 |
| 2 | 2.4.2 | | | 3 | | | 2.50 | | | 2.32 |
| 3 | 3.4.2 | | | 2 | | | 1.65 | | | 1.57 |
| 4a | 4.7.2 | | | 1 | | | 0.21 | | | 0.28 |
| 4b | 4.2.9 | | 1 | | | 0.69 | | | 0.66 | |
| 5a | 5.1.1 | | | 7 | | | 4.03 | | | 3.73 |
| 5b | | | | 7 | | | 2.78 | | | 3.18 |

| | Your School | All Schools |
|---|---|---|
| Q1. | 3.15 | 3.15 |
| Q2a. | 2.50 ⟰ | 2.32 |
| Q4a. | 0.21 ⟱ | 0.28 |

KEY:
K = Knowledge
U = Understanding
A = Application

Source: AKU-EB

In addition to the quantitative analysis, the report also includes qualitative feedback in the form of the marking notes. The notes are developed by the principal markers who are senior subject teachers involved in the marking and validation process along with the internal AKU-EB subject experts. The marking notes are developed using selected responses of the students to provide feedback that entails expert opinion with respect to the marking criteria on the characteristics of good and weaker responses. This helps to communicate the expectations of the question and to provide suggestions to deliver the particular concept in the classroom (see Figure 8).

**Figure 8: Example of the marking notes**



**Write any ONE similarity and TWO differences between the given atoms A and B.**

Similarity between atoms A and B: Atom A and atom B are the isotopes of the same element having same proton number i.e the atomic number.

Differences between atoms A and B: Atom A and atom B have different neutron number i.e 20 and 18, due to which they also differ in their mass number which is the sum of atomic number and number of nuetrons present in the nucleas.

**Better responses showed the clarity of concept regarding isotopes. In many responses, candidates identified the given atoms A and B as isotopes of each other/ isotopes of chlorine atom. Beside that these responses distinctively mentioned the basic similarities between isotopes, i.e., same atomic number/ same proton number/ same number of electrons/ same number of valence electrons/ same electronic configuration/ same number of electrons are required in valence shell/ both can form anion by accepting one electron. As for the differences between the given isotopes, candidates mentioned that both the atoms have different mass number and the number of neutrons.**

Source: AKU-EB

## Case study methodology

This case study aims to understand the benefits of the SPR for decision-making, evaluating performance, and improving teaching, learning and assessment among others. For this, we used purposeful sampling method and 3 schools were selected to participate in the study. The criteria for selection were:

- socio-economic background of the students attending that school
- affiliation of the school with AKU-EB for at least 5 years
- the school has been using the SPR document for decision-making.

Based on the criteria, the following schools were selected:

- School 1 (low socio-economic background, located in a fishing village in the outskirts of the city)
- School 2 (middle socio-economic background, located in the centre of the city)
- School 3 (middle to high socio-economic background, located in the centre of the city).

Data for the case study was gathered using semi-structured interviews with the school leadership, and quantitative and qualitative surveys along with semi-structured interviews with the teachers. In addition, semi-structured interviews were conducted with AKU-EB's subject experts involved in school support and document analysis to understand the utilisation of the SPR for designing trainings for teachers.

## Findings
### Utilising the School Performance Report: The role of the School Performance Report in improving teaching, learning and assessment in schools

The findings related to schools' utilisation are categorised into 3 sections: school leadership, teachers and capacity development.

### School leadership

The school leadership mainly involves the owner of the school, the board of governors, the principal and section heads. The school leadership reviews the overall performance of their school, and performance at the subject and item level. Based on the information provided in the SPR, the school undergoes a self-assessment.

- Self-reflection: The overview of the school's performance and analysis of the progress made from year to year serves as a source of motivation, affirming that the school

is on a positive trajectory and reinforcing the importance of maintaining consistent effort and dedication.

- Identification of the problem: If the report shows an anomaly in the overall performance of the school, or in comparison to other schools affiliated with AKU-EB, the school leadership will delve into the report's specific details to identify the underlying factors contributing to the deviation. This analysis aims to ascertain the cause, and facilitate the provision of appropriate support and interventions to address the identified gaps.
- Strategising plans for development: The school leadership analyses performance within streams to gain insights into the progress of students within specific streams. This information guides decision-making regarding the inclusion or exclusion of certain subjects in the upcoming session.
- In addition to this, the item-specific performance enables school leaders to acknowledge the transparency and accountability of AKU-EB.
- One of the negative effects of the SPR is its utilisation for the evaluation and appraisal of teachers' performance.

'SPR helps not only in creating foresight towards future planning in terms of subject selection but also motivates us that despite being new to the system, we were able to perform better in some subjects. It provided us with new energy and a positive approach to move forward.'

(Principal, School 1)

'SPR provides a broader perspective to a principal: where is our school standing? What is the performance of the other schools and how have our students been able to perform in the examination? These questions are important as management and we need to know the answers to ensure smooth progress for the institution'

(Principal, School 2)

'When we look at the SPR, especially at the item-wise level, we notice the sharing of information regarding double key and awarding marks to all the students based on the analysis done by the board. This shows that AKU-EB considers all aspects and treats the questions in a manner as to not disadvantage the students.'

(Principal, School 3)

## Teachers

The findings revealed that when the SPR is shared with teachers by the principals and/or academic heads, teachers exhibit a general interest in evaluating the overall performance of students. However, their primary focus lies in analysing the specific performance indicators and feedback relevant to their own subjects.

Based on the information provided in the SPR, the developmental process for teachers undergoes the following steps:

- Appreciation and motivation: Teachers express their appreciation for the reporting of the overall performance of subjects across multiple groups. This provides them with a sense of achievement for their students.
- Self-reflection: The item-specific performance analysis shown in Figures 6 and 7 enables teachers to prioritise their lesson planning for the upcoming year, with a specific focus on areas where students are performing below national norms. This requires the adoption of diverse approaches to teaching and learning.
- The e-marking notes, in conjunction with item-specific analysis, occasionally present teachers with fresh perspectives or alternative approaches to certain concepts, which can be integrated into their teaching, learning and assessment practices.
- Engaging classrooms: The SPR, particularly the e-marking notes, provides teachers with valuable insights into students' performance in each item and highlights common misconceptions. These notes facilitate classroom discussions on various item constructs and contribute to an effective approach to teaching specific concepts.
- Improved performance: The SPR prompts the adoption or modification of existing teaching and learning activities, aiming to enhance student performance.
- Negative washback: Some schools use the comparison of students' subject performance for teacher appraisal. This evokes negative responses among teachers and creates unnecessary competition, which hampers students' learning.

**'The SPR provides 3 approaches: a pat on the back where students have performed better than the national norms; a sigh of relief where the students were able to perform at par with the national norm, and lastly a warning to change where the students have performed below the national norms.'**

(Teacher, School 3)

**'SPR helps teacher to understand where students are facing difficulties and how can they effectively overcome those difficulties.'**

(Principal, School 1)

**'The e-marking notes help us a lot in preparing students to attempt questions. The notes provide a glimpse of what is expected, as AKU-EB does not repeat questions, so the students can't rote learn.'**

(Principal, School 2)

**'E-marking notes in the SPR help us clarify the use of command word to the students while they are answering a particular question. It has also helped me as teacher to unpack the student learning outcomes with reference to the command word.'**

(Teacher, School 2)

**'SPR has helped us change our lesson planning. Like when we saw that our students are not performing well in listening exams in language subjects, we started using audio in the class instead of a teacher reading the passage. Also, we started exposing our students to listening practices in the earlier grades, such as from grade VI onwards.'**

(Teacher, School 1)

## Capacity building

Teacher capacity building is considered a fundamental aspect of the school's approach, and the feedback provided in the SPR helps with planning and monitoring the impact of training initiatives on an annual basis.

Based on the findings, the school leadership identifies subjects that exhibit weaker performance and arranges targeted training sessions accordingly. These training programs prioritise relevant areas such as pedagogy and assessment tool development. The item-specific report in the SPR plays a crucial role in identifying the specific content-based training needs of teachers, enabling them to address the identified gaps and align their teaching approaches with national performance standards.

## Utilising the School Performance Report: Designing customised teacher development modules by AKU-EB

The workflow for the utilisation of SPR to develop customised training across different regions is shown in Figure 9.

The process starts with the generation of the SPR, which reports on overall performance as well as region-wise performance for different subjects. Then this data is used to analyse items for difficulty, discrimination and distractor usage. This enables the school support team to identify concepts or cognition levels where the students struggled during the examination and there is a need for improvement. These items are then discussed with the AKU-EB subject experts and the principal / senior e-marker from the affiliated schools. The school support team than uses the identified concepts and design training modules with them.

At the conclusion of the May examination session, AKU-EB organises a series of professional development programs. These programs are divided in 2 segments. The first segment entails general training, which primarily focuses on student assessment; for example, development of assessment items, comprehending table of specifications (TOS), developing test tools, comprehending SPR. The second segment comprises subject-specific, regionally customised training to improve conceptual understanding of the outcome, based on evidence gathered from analysis as well as insights from the SPR.
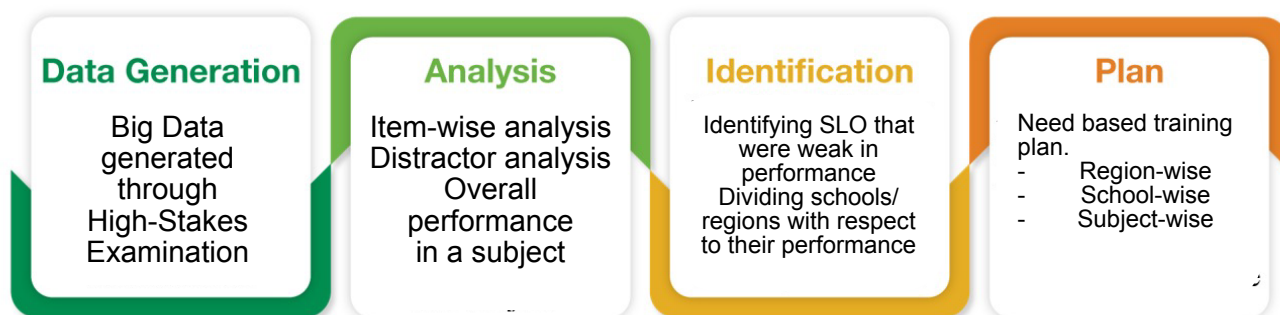
These professional development programs are conducted continuously, both through in-person sessions and webinars. The primary purpose of these programs is to enhance access and facilitate teachers' continuous professional development, thereby improving teaching and learning practices.

The manager of teacher support at AKU-EB, who manages the entire activity with the team of experts, stresses:

'The School Performance Report (SPR) serves as a vital tool for conducting training needs analysis, facilitating the development of targeted training programs in areas that require the most attention. By aligning the training offerings with the identified needs, teachers and schools are more motivated and committed to these professional development opportunities. As a result, these trainings have a positive impact in the classroom, enhancing teaching practices and student learning outcomes.'

(Manager, Teacher Support, AKU-EB)

Figure 9: Workflow for utilising SPR for design and development of teacher training



| Data Generation | Analysis | Identification | Plan |
|---|---|---|---|
| Big Data generated through High-Stakes Examination | Item-wise analysis Distractor analysis Overall performance in a subject | Identifying SLO that were weak in performance Dividing schools/ regions with respect to their performance | Need based training plan. - Region-wise - School-wise - Subject-wise |

Source: AKU-EB

## Conclusion

The School Performance Report (SPR) serves as a comprehensive feedback document that stands out as a unique resource in the educational context. This document completes the assessment cycle by providing timely feedback, and enables school leadership to continually monitor their performance in high-stakes examinations. With its targeted approach, the SPR guides school leaders in formulating strategic plans and addressing specific areas of improvement, such as understanding the syllabus, implementing effective pedagogical practices, and developing appropriate assessment tools to accurately measure student abilities.

For teachers, the SPR is a valuable resource that identifies areas of weakness. Rather than completely overhauling their teaching plans each year, teachers can systematically address the identified areas in need of attention. This approach allows them to enhance their teaching, learning and assessment practices progressively over time. In essence, the SPR acts as a ladder, facilitating continuous improvement and growth in schools.

However, this report itself has a negative washback regarding its use for teacher appraisal, as it can foster a 'teaching to the test' culture. To address this issue, we have implemented strategies such as raising general awareness and providing ongoing support to schools in understanding the SPR. Additionally, we conduct multiple webinars and in-person sessions to equip school leaders and teachers with the knowledge and skills to use the SPR as a tool for their professional development.

In conclusion, the School Performance Report serves as a unique and comprehensive feedback document that empowers school leadership and teachers to monitor and improve their performance through evidence-based decision-making. By providing targeted insights, it enables focused efforts in enhancing teaching, learning, and assessment practices. The SPR is an invaluable tool for promoting continuous improvement and progress in educational institutions.

## Appendix 1

Grading system, as per the directives of Government of Pakistan

| Percentage | Grade |
|---|---|
| 80% and above | A-1 |
| 70% and above but below 80% | A |
| 60% and above but below 70% | B |
| 50% and above but below 60% | C |
| 40% and above but below 50% | D |
| 33% and above but below 40% | E |
| Below 33% | F |

# Supporting schools' and teachers' use of assessment to inform learning of all students

*In more than half of Asia-Pacific countries, a majority of learners in primary and secondary education do not have the required foundational skills.*

The fifth issue of the topical case studies series "Using Assessment Data in Education Policy And Practice: Examples From The Asia-Pacific" under the Network for Education Quality Monitoring in Asia-Pacific (NEQMAP), documents four promising practices from countries in the Asia-Pacific region on how education systems can better support teachers and schools in effectively integrating assessment practices in the teaching and learning process. The goal of this support is to identify and meaningfully address every learner's needs, so that every learner can learn successfully. The case studies look at a variety of levers that promote a better use of assessment for learning such as how to develop teachers' assessment literacy and capacity to design, implement and use assessment to inform their classroom teaching and learning; how to improve the use of standardized assessment data to inform teaching and learning and how to rethink the organisation of instruction to address the needs of all learners.

## Stay in touch

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4 QUALITY EDUCATION

Sustainable Development Goals