



AN ANALYSIS OF STANDARDIZED ACHIEVEMENT TEST RESULTS: INSIGHTS FROM IBA SUKKUR'S CLASS FIVE AND EIGHT ASSESSMENTS

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Abstract

The majority of the investigators have worked on the SAT, while a very few have concentrated their work on the IBA-SAT test in Sindh Government schools. This research is the first step towards the IBA SAT Test at Sindh Govt School. Objectives The primary focus and purpose of this study is to conclude effect of IBA SAT on Sindh Govt: schools, identifying which item is most improving the IBA SAT satisfaction, to evaluate teachers' reports of how preparation for the major annual standardized achievement test influences pacing, sequence, and presentation of their Language, Science & mathematics curricula and to implemented recommendations regarding IBA SAT to Sindh Govt schools. First, the Survey is conducted on those aspects of the SAT, and the latest research, current state of art, findings, and gaps of the research were compiled by collecting and analyzing the information observed from all the results that IBA Sukkur presented. The participants (the teachers, parents, students, and communities) are more satisfaction IBA SAT results. The Survey recommended that this study is beneficial for the School Education & Literacy Department (SELD) to minimize the domain of dissatisfaction & to address the problems of teachers, and students on the basis of IBA SAT Test Results. This paper is written in an attempt to give a description of the continuity of the modern standardized testing, its significance, and the good and the bad sides of standardized testing. In Sindh, back in 2012-2018, the SELD had made an arrangement with the IBA to develop and execute the standardized testing for classes 5 and 8th of all Sindh Govt Schools. This study shows the effect of standardized achievement tests on Primary & middle school Subjects of Language, Science & mathematics. The survey reveals that most elementary classroom teachers attempt to ensure their students are ready for the standardized achievement test by the time of testing by teaching all testable skills. This paper is an attempt to synthesize all of these sources that discuss standardized testing.

Keywords: *Innovative Training & Development, SAT, SAT Impact, School Education*

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1. Introduction

A standardized test like the SAT is a test that is “standard,” or the same, for everyone who takes the test, because they all took the test with the same questions and in the same amount of time. All variables must be controlled for it to be applicable. It enables a relative comparison between the students’ performances. While these tests tend to be in multiple-choice format so that they may be scored easily, the questions can be based on, but not limited to, such topics as true-false, essay questions, or short-answer questions (Zhou, Y., 2026).

Standardized tests are meant to be fitted to adaptable circumstances. These are based on achievement tests that measure knowledge, skills, and educational growth. Aptitude tests are also used to assess abilities in a particular field or skill area and to predict performance in a future situation. Just frequent international-comparison tests of samples of such students from different countries to track trends in achievement and compare the performance of nations' students (Bakhtiari, M. 2026). More personally, psychological tests quantify a person’s social, mental, and developmental traits and how they think. Content Mastery Tests Content mastery tests (Miller, J. E., et al. 2026) are designed to measure specific knowledge and skills and help determine how much material students have learned over a certain period of time. They may also want to understand how well a schools and teachers are doing, or what is the best or most appropriate academic setting for a student to be in (eg: what courses or programs they should engage in, or what types of academic supports may be needed). “backward-looking” tests they measure how well the students have learned that which they were expected to learn (de Lange, et al. 2026).

Standardized testing is defined by law as assessments that are given and graded in a consistent, or "standard" (way Campino, 2026). given in a regulated or standardized way that specifies the time, place, method, and duration of the children's response to questions. The questions, administration methods, scoring, and meaning of standardized examinations are all the same. A well-crafted standardized exam assesses a person's proficiency in a particular field of knowledge or ability.

Standardized tests are used to gauge a student's knowledge and proficiency in academic subjects, including arithmetic, science, and language. The "substance" and "administering" of standardized tests are presumed to be the same for all of them. With this consistency, fairness and objectivity are established, and elements of subjectivity are reduced. The same test with the same level of difficulty and the same way of grading it is then spread as the fairest and most objective test of how a student's learning is going. Because standardized tests are designed to be impartial and impartial, they are supposed to "control" to some extent just how much a student actually learns. Testing also gives teachers their own data around what they are bad at and where their lesson plans and focus areas come up short. Additionally, the standard of the state requires the teacher to be accountable to the school, the parents, and the government. Standardized testing is an economical and effective way to measure whether or not schools are meeting state standards, and can prompt the shift schools make to their curriculum and testing program in response to these standards.

There has been a growing use of standardized tests "to decide on important matters about students, like high school graduation or grade promotion," reads the position of Educators for Quality Alternatives, Clinton's education think tank. Increasingly, they're also meant to influence curriculum and instruction." A test is designed to measure only what a student knows; therefore, test scores do not reflect a student's total academic performance.

1.1. Background

Keeping in view the Global perspective research, SELD, Government of Sindh, for the first time in the history of Pakistan, started the SAT project funded by the World Bank and executed by Sukkur IBA University for 06 years, i.e., 2012-2018, consecutively. Sukkur IBA was assigned SAT by SELD, Government of Sindh, by competitive bidding process. The agreement was signed on 02 January 2012. Phase I of the SAT project proceeded and was accomplished in 2012.

Under this project standardized test was developed on the basis of the National Curriculum 2007 for Classes V & VIII in the subjects of Language, Science & Maths. This project had a tremendous impact, given the costs of half a billion, and potential impact on the entire target population. The papers were given in 45,000 public sector schools, and around 350,000 to 400,000 students take these tests annually. It is to the credit of Sukkur Iba University, whose name is synonymous with merit and quality, and which made a great effort to put in place complete transparency in the whole activity.

The large-scale assessments of these kinds were supposed to assist in evaluating students' learning outcomes, like one that was initiated in Sindh in 2012 under the SAT project. SAT-I (2012) was held over the entire Sindh province, covering only one major subject like Language area of English, Mathematics, and Sciences. The assessment results

provided a foundation for pinpointing and analyzing the chasms in the quality of education provision in the province and will eventually unfold to analyze actual gaps and problems of the public sector education quality in the province. At last it will help in the quality education delivery process as well, through proposing some research-based and evidence-based solutions in the form of reform initiatives.

The SAT was administered to a large number of students under uniform conditions and in a standard manner. To ensure uniform test topics, objectives, task-requirements, control variables, and time, students were presented with the same or very similar questions. Sindh province introduced the Standardized Testing in order to assess the Sindh education system, measure the abilities and knowledge of class V and VIII Students and to assess the best and more improveable schools in the province in light of the SAT.

SAT was an innovative reform programme of RSU, SELD, as a very good strategy to open up the process of children learning for the entire province. To evaluate the performance of students of classes V and VIII in Public Schools in Language, Maths, and Science. The aim was to influence attitudes in teachers by the process of SAT itself and by the outcomes to help teachers in a shift from rote learning to activity-based teaching, e.g., which would develop problem-solving and analytical skills in students.

"SAT offered an opportunity to bring district-wide testing systems into the 21st century.

Demographic information, including those factors that may serve as facilitators and/or barriers to student learning, was obtained through surveys in districts. Test items were constructed at low, middle, and high levels of cognitive understanding with the weightages of 40 %, 35%, and 25%, respectively. For each of the topics/concepts, a set of four item versions (in English) was created, deliberated, and revised. A team was assembled to do testing. This examination was held in the presence of SAT staff, through the coordination of sub-district level education officers known as Taluka Education Officers (TEOs), in sequence. The TEOs liaise with in-country contacts and confirm operational details, including field plans, invigilation requirements, security, and logistics. For seamless administration, the SAT staff offered them a 2-day orientation training. Tests were e-marked by markers using E-markers 'scoring scheme, which includes an analytical rubric with a model answer to every CRQ that a candidate can view on screen' (Education Monitor III, 2016). Reports generally consisted of detailed descriptions of scores school-wise, taluka-wise, district-wise, province-wise, and subject-wise. Additionally, comparisons between other schools in the same district and/or sub-district were also made, which, though, does not explain properly what tools are to be used to analyze demography. According to the reports, teachers were given information about the test center and the test date the week before test (SAT Report 2015/16 p: 20). A summary of results of the provinces showed negligible difference among the subjects

results for the past six years performance of participating schools in mathematics, science and language has been relatively normal over past five years.

1.2. Significance

SAT has been of immense assistance to the Department of Education in one of the biggest and long-awaited transformations in thinking and action, the discard of pedagogic model of rote learning/suppression, absence of sense of shared accountability & responsibility among parents, the teaching of the curriculum and connecting the change to output and not to the input, the change to output base Accountability. Standardized tests are necessary in order to assess students and schools; to help improve instruction and learning; and to produce vital data upon which policies are built. The results of standardized tests are simply a powerful driver of how the public believes our students are doing and how our public schools are performing.

Additionally, a record of each student's accomplishments from their involvement in a learning program and experience throughout the SAT year. They provide information on each student's strengths and weaknesses in relation to national standards, which teachers, curriculum developers, authors, and policymakers can use to create plans and systems for raising student accomplishment. Students' knowledge from the academic year is gauged by the SAT. The National Curriculum and student learning outcomes, as represented in it, will be the basis for the Sindh SAT. Every student in classes V and VIII must complete the full battery of accomplishment tests in language (the school's medium of instruction), mathematics, and general science. These tests cover subject knowledge and skills, 21st-century skills, and other skills that are applicable both nationally and internationally.

1.3. Objectives

Since then, students have regularly appeared in tests for an empirical assessment of the education quality being offered. To consider the talent of the students.

Project Objectives were to:

- Investigate and cater for the following main purposes: Knowing students' achievement, Focusing on reforms in education, rather than input and output, Educating parents, educational authority, society, and state about the education situation in the province. Their idea is to have world-level competitive students at the school level who are not just knowledgeable, but have practical skills, research skills, and analytical skills.
- To sensitize parents & communities to monitor & guarantee the performance of students.
- To assess the effect the education progress is having on the students' lives and how much students are profiting.

- To find concerns and suggest practical measures to comprehend the situations.
- The focus of the outcomes is to identify areas in which students are underachieving and to inform interventions to enhance the delivery of education at the district and provincial levels. Based on these findings, several policy and programmatic reforms are suggested to enhance the quality of the education delivered and thereby to increase the learning attainment of public sector school students of the province.
- To connect our command-and-control reform agenda, which was largely input-driven, to outcomes.
- How to use SAT procedures and results to change teachers' attitudes, such as weaning them off the rotary learning concession to an active learning approach that can help students develop their analytical, problem-solving, critical-thinking, and communication skills. The findings of the tests can also be used to examine the curriculum, syllabus, and textbooks of educational institutions and teacher training programs, as well as the hiring practices for teachers at various levels and service groups.
- To inform policymakers, development partners, planners, and implementers, and gradually transition to evidence-based policy making, planning, and implementation.
- Communicate with parents, the education administration, civil society, and the government.
- To move toward a result-based responsibility system.
- The test's goal is to identify high achievers and to help low-performing pupils reach their full potential by mentoring and nurturing them.
- To find out the good districts and good practices to replicate in other districts.

1.4. Benefits of IBA SAT

There are many advantages to the institutions, teachers, and parents of schools and students who take part in standardized testing. The benefits are summarized below:

The result is that teachers teach to the tests to demonstrate their level of performance, and to also skew the performance of schools toward the positive end of the scale. It may mean that teachers are ignoring parts of the curriculum that are valuable, but are being neglected, perhaps because they are not one of the limited number of subjects that standardized tests measure.

Standardized tests cannot measure growth of students over a period of time, but at given points in time, and teachers' contributions and efforts that have been expended in developing students to the level that they have attained.

a. It provide a overview of the student strengths and weaknesses in comparison to the similar average with the national average with students with similarly aged and in same level of Education.

b. It allows for setting the teachers' and schools' measurements, as usually the test results are made public. So we can further investigate schools and educators who just are not cutting it.

c. Standardized testing has enhanced efficient use of study time by directing attention to the learning outcome for a specific area of the curriculum and targets for teachers.

d. It can compare the level of and effort of students between schools, talukas, districts, and provinces.

e. Its standard form makes this comparison desirable.

f. Standardized testing makes students the same-level at a school in different districts and therefore changes schools without being ahead or behind.

g. university-level standardized testing would provide an equal chance to students of all any city of the province to get into university.

h. The neutral way that standardized tests are graded; that is, whether machines or people, not in any way related to the student who has taken the test. The tests are also constructed after numerous phases of expert review and inspection to eliminate bias.

i. Drawbacks and limitations of standardized tests were mentioned too, to know the potential failures in connection with the results.

j. One day, preset tests inaccurately measure a student's skill and mastery level with no consideration for the influence of other outside factors. It is possible the student is sick on the day. And it also ignores the fact that many students just do not test well for reasons such as anxiety, a bad night's sleep, family issues, etc. In countries in which standardized testing is more prominent, I only hear teachers teaching the test to show off how good I am and how I will increase the number of good performances of the colleges and high schools. That could mean that maybe teachers aren't emphasizing one section of the curriculum that is necessary but not typically tested on the standardized tests.

k. The teachers and what the teachers have to do to get the students to where they are performing.

1.5. Role of IBA SAT in Sindh Schools Education Project

This study uses standardized achievement tests to determine the effect of curricular interventions in Language, math, or science. The tests share three common features. First, the tests are standardized: Each test is a component of an assessment system with an established procedure for the creation, administration, scoring, and reporting of test results. Examples of the tests referred to in the presented data are the state-developed and administered tests and subject matter tests. Two, the norm-referenced achievement

tests are criterion-referenced. The tests are developed to gauge proficiency at a grade level in a key subject such as math or science. The exams tend to be between several dozen and more than a hundred items that sample from a year's worth of academic content and skills. Developers and/or end users engage in alignment research to help confirm whether tests of these standards adequately sample the breadth of academic content and balance of skills found in the standards. The product is a general measure of the achievement of all students in a key graduation subject area, which represents the general academic skills and knowledge that all students will be expected to master during a school year.

When well-validated standardized achievement tests are used, grade-level proficiency can be regarded as an acceptable indicator for student groups. Therefore, SATs may be well-suited as a measure of intervention impact if one's goal is to narrow the differential between grade-level proficiency and the proficiency of a comparison group. Even though some testing systems report subscale scores after disaggregating scores by content strand, it is critical to be careful when interpreting these subscale scores. For instance, a standard mathematics test may yield subscale scores for fractions, geometry, statistics, and so forth. Nonetheless, the number of items for each subscale is generally low, so psychometric reliability and issues are feared.

The third significant feature of the standardized tests addressed in this paper is that they are "legacy". Standardized tests are the tests used by project investigators to assess the educational gains of new interventions, and they were designed to serve a different, earlier purpose (e.g., grade-level academic achievement). Issues of validity in program evaluation with regard to the possibility of a preexisting test not matching an intervention are quite salient. Those that have existing standardized achievement tests, however, need to critically assess the validity of the test for each application.

The use of standardized tests has been problematic, but it has been a valuable check on the power of teachers, school administrators, and education officials. The neutrality in these tests has helped in pointing out that schools are meeting state requirements and providing equal educational opportunities. In that case, students, teachers, schools, and districts can all be judged on how well they perform. This could also result in accountability of teachers and school administrations to the standards set by the state in education, if a certain group of students fails to achieve the desired score.

The test results are significant as they demonstrate the level of learning attained in the school.

The tests are not inexpensive to develop, but they've long ago paid for themselves. "A benchmark assessment from standards gives teachers a starting point on what students know and know how to do both as individual students and as a class at various points during the school year." If the tests are taken at the beginning of the year, teachers will know what students are beginning with and what they are coming in with. They will know

exactly what they need to teach the students throughout the year. So if the students have mastered a subject, the teachers might not have to teach them that and concentrate on where they need help. Also, the timing of tests is critical.

Teachers might be able to assess based on the standardized test and teacher could be trained in the same for the interim and final throughout the year (compare how the students testing at the beginning of a school year have progressed compared to the standard) The results of the tests will permit the teachers to pick out those children who need the more detailed attention which those qualifying for tuition either have or can get: more time, counseling, help from the parents, etc.

Test results can be used to inform national education authorities about which preparations are consistently low in performance, and so are sensitive to particular attention from the national bodies. This increased scrutiny could mean anything from finding out what results are driving your low performance, and why this is happening.

We also believe that although standardized test data are useful to document the performance of schools and to hold teachers and administration accountable, standardized testing is not an appropriate measure for the quality of education provided by schools.

2. Results

The test results have given a platform to identify and examine the achievement discrepancies among pupils and help diagnose the real gaps and issues with educational standards. By offering some research-based, scientifically driven reform ideas that can be implemented, adjusted, and altered to suit the circumstances, assessment results can be used to address issues and challenges in the delivery of high-quality education. To create a widespread and grassroots awareness of students' accomplishments, the SAT results were promptly shared with the students, parents, instructors, head teachers, principals, and other educational stakeholders. Results are described below in Tables 1 and 2.

S.No	SAT Test Phase & Year	Subjects Wise Result %			Provincial Overall Average %
		Language	Math	Science	
1	2012-13 1 st phase	31.98	15.09	19.24	-
2	2013-14 2 nd phase	37.01	13.73	17.07	22.60
3	2014-15 3 rd phase	40.48	17.62	17.17	25.09
4	2015-16 4 th phase	36.93	21.95	24.37	27.25

5	2016-17 5 th phase	39.79	20.95	25.84	28.86
6	2017-18 6 th phase	46.16	15.85	21.92	27.98

Table 1: SAT Results for Class Eight

S.No	SAT Test Phase & Year	Subjects Wise Result %			Provincial Overall Average %
		Language	Math	Science	
1	2012-13 1 st phase	32	15	19	22
2	2013-14 2 nd phase	30	17	18	21
3	2014-15 3 rd phase	32.81	18.22	15.26	22.10
4	2015-16 4 th phase	32.80	24.09	23.68	26.87
5	2016-17 5 th phase	-	-	-	-
6	2017-18 6 th phase	33.46	21.72	19.14	24.77

Table 2: SAT Results for Class Five

It also describes the content strand scores for Language (Reading & Writing), Science (Physical Science, Life Sciences, and Earth & Space Sciences), and Maths (Numbers and Operations, Measurement, Information handling, Geometry & Algebra). The reports were available at the link <http://satsindh.net.pk/Downloads/Reports>.

Students' results were also communicated to the provincial/regional/district/tehsil & school level authorities so that everyone of them should be aware of the attainment scores of the students for whom they are working. The mark sheet of all students who participated in the exam has been dispatched to the school of all students, along with a

copy for the parents. The outcomes were clearly communicated to all partners at every level, in lay terms.

The primary reasons for the normal results of this system were: incomplete infrastructure, acute shortage of specialized teachers, no role of technologies in teaching methods, old classic rote system of learning, obsolete syllabus, no answerability, lack of leadership.

However, there were still schools where effective administrations were there with sincere teachers who pushed up to reach the last lesson of the book, convinced the parents to send their child, and give extra time to students to minimise their difficulty so that at least some sparks of light in the darkness.

Provincial SAT results showed that the Department of Education needs to transform the education system from a rote-learning system to a modern system.

The SAT IBA Test results could be googled, and the scores are as given below for taking remedial measures in the future, in conducting the SAT, and improving the Science skills of the Students and learning for the teachers. Provincial results for the SAT are telling the department of education that it is time to transform the education system from memorization to a contemporary system.

3. Discussion

Standardized testing is a valuable and effective tool for measuring what a student has learned, but it has to be used correctly. The vast majority of education reform policy should come from teachers, even though that is a supposedly messier process. Perhaps standardized testing is not entirely useless, but once we acknowledge its limitations, more appropriate approaches can be developed, and it could be the first step in making the education system better at preparing all of us to be good students.

The fundamental problem statement of standardized tests is that appropriate recognition of a student's total academic capacity can not be based on the data gathered from the student's performance on assessments. School district administrators appear to rely on testing, not as one measure, but as the last measure to use in making educational decisions. One hoped-for benefit of testing is that students and teachers get more useful feedback on how they're doing. But that's if the test is a measure of every element of your life. This is a ton of information that any kid is likely to know, and poses an enormous challenge for test makers who must constrain the test to a content domain, otherwise the test would go on forever!

By paying great attention to items on tests that discriminate most effectively, designers of tests construct assessments that are excellent at making relative comparisons of students' content mastery across the nation. By this approach, we can find the teaching and learning strengths and weaknesses of the students in various subjects. It can also be used to identify which areas a student is particularly strong in across different subjects.

For instance, in a standard math test, 20 questions will primarily be focused on Algebra, 20 on Geometry, and 20 on Trigonometry. By separating these questions, an approximate measure can be made of a student's ability in these spaces.

And the general notion that assessment tests give a true measure of student knowledge is also still true, but that needs to also be qualified as understanding that it is just that, a general measure. Nonetheless, while assessment tests are very effective at producing a wealth of information about what students know, the people who make use of that information to create policy, and school officials react as though assessment tests are just as good at generating numbers to track along other lines.

SAT occupies an expanded role in public schooling in the United States. When it comes to an emphasis on school reform and student learning, standardized test results are used in numerous fundamental ways:

Holding schools and educators responsible for educational outcomes and student performance. In this context, test performance has been established as a proxy for quality, with poor test performance potentially resulting in a range of negative implications for schools and educators. See the high-stakes test for a more elaborate discussion.

To determine if students have learned what they were expected to learn, such as times tables, facts about a particular subject, etc.

To determine areas of student learning and academic progress. Accordingly, test scores, accompanied by information about student background and work habits, are used to diagnose learning needs to tailor services, instruction, or academic assistance.

To monitor achievement gaps between various groups of students, such as students of color, non-native English speakers, those from low-income families, and students with physical or learning disabilities. So, in this instance, identifying and shining a spotlight on achievement gaps may well serve as an important initial move towards better educating all students, and this, in turn, can drive greater public understanding and changes to educational policy and practice.

To compare whether education policies are delivering the intended outcomes. Officials and education policy makers could use the results of standardized tests to decide whether their laws and policies are, in fact, working or not, or to compare how students are doing in school to school. They may also invoke the results to persuade the broader public and other officeholders that their policies are justified in terms of what is best for children and for society.

3.1. Recommendations

- A teacher's license is a must for every teacher, Primary, Secondary, and also for college level Lecturer, because no compromise in the education field.
- Stop all Private, Distance learning based B.Ed and teacher training course make all these courses regularly on weekened basis, etc.

- After every three years Provincial Teachers conference, as teachers can define all the scenarios of education, syllabus, curriculum, etc.
- In SAT, the Teacher should try as above, for differences may be found between the teacher and pupil.
- Schools must be given world-class Science Laboratories access.
- Teachers should be evaluated each school year, and then be required to train and improve their skills accordingly.
- The Teacher's and HMs Award presentation programme should be conducted every year.
- Students should also fill in the ACR of the teachers at the end of the school session every year on how teachers delivered lectures in the subject, as students are the best judges of educators.
- The SAT must include the English Subject as well.
- These tests must be taken at the colleges as well.
- Online tools and Apps must be used in the current digital era.
- During the summer vacations each year Practical work training may be imparted to the teachers, particularly bound teachers, to carry out and practice the lessons while the classes are in progress will this work. Everything taught is a waste without lesson plans in the classroom.
- One measure that contributes to unbalanced minds among students is the delay in the announcement of results, or even SAT results that were announced late.
- The result or Benefit of the IBA SAT is that it opens the transition of students into Govt schools by itself.
- Focus or top priority on the IBA SAT and facilities of the IBA SAT at the rural area schools where we have rich talent.
- Supply schools with multimedia projectors for science activities.
- The study results suggest that, within the formal school system, teachers' training can be grounded in new and creative methods depending on the writing and numeracy skills.
- For a non-formal school system, the training of the teachers may be based on word recognition, while the children will develop creative writing skills.
- Programmed assignments and programmed quizzes are recommended for instruction in the formal school system to foster numeracy among students. For writing and numeracy skills, game-based learning could be used.
- Suggested events, quizzes, games, competitions, Declamation contests, etc. that could be organised in school to help children develop numeracy basic skills (in a

non-formal school setting). The curriculum of the 4th. Curriculum can be written with attention to the more recent that reflect writing in numeracy skills.

- Both teaching methodology such as gaming techniques and playful pedagogical tools, and pencil grip strengthening exercise further with the help of new corner apps on writing and numeracy, have been suggested for formal and non-formal schools.
- More studies can investigate a larger sample consisting of gender based and different locations.
- CPD in the Mathematics and Science domain can also be started. Review by the Textbook Affliction Guide: The textbooks of Mathematics and Science should be revised on the basis of the National Curriculum 2006. Training material should be developed based on Students' Learning Outcomes (SLOs).
- One of the common strategies for improving teachers' capacity is a periodical use of in-service training for teachers, though a growing community of teacher educators is increasingly convinced that the employment of a range of strategies on an ongoing basis would be more effective in helping teacher knowledge and skills to remain updated. Thus, for the most part, other methods with in-service training should also be used, like giving teachers reading materials for learning, alternative textbooks, and books based on content knowledge, developing peer coaching and mentoring among teachers, organising exposure visits to other school systems in different provinces and across the nation, offering online resources, encouraging teachers to pursue small-scale studies, and publishing newsletters based on teacher districts, etc.

Few specific suggestions, Highlights about projects:

a) Generations of Professional Continuities from the Teachers of the Different Schools, UCs, Talukas, and Districts, who are working in the different Levels: Dispersion data and distribution of scores from the school level means, which revealed that there were intensely performing schools and a few level schools reached the highest level in the observed levels. A list of schools in each district that are fully operational should be created. Teachers in low-performing schools should interact with teachers from high-performing schools. Some district-based, or taluka-based sessions need to be planned where teachers of these good schools can visit (district-wise / block-wise) to tell their practices of teaching and learning in their school , so that other teachers can benefit from their practices. These contacts should have a permanent character so that the teachers also have the time to think about their teaching, reflect on it , and learn with and from their colleagues.

b) Restoring Balance of Focus between the "Reading" and "Writing" Skills and Training Teachers to Teach Genuine Writing Skills Rather than Teaching Writing as Note-dictating: Analyzing results based on content reveals that students excelled better on reading and performed terribly on writing. This is a clear sign of focusing on reading to the exclusion of writing. Curriculum, Textbooks, and Teaching-Learning need to be balanced between the two skills. Besides this, in most cases, teachers adopt the note-dictation method for teaching writing. Conversely, teachers tell students to write an essay, letter, or story from a written copy for their fair copy and then copy this into a teacher-made test or an exam. There isn't any real writing in this process, no thinking up ideas, outlining, structuring, writing sentences, or parts on their own. Note-dictating is an age-old practice of teachers in Pakistani schools. To modify teachers' practice, intensive in-service training needs to be organized for every teacher who teaches language on how to involve pupils in the production of their writing through the utilization of more modern student-centred approaches.

c) Re-Alignment of Math Instructions to Emphasize the Development of Children's "Conceptual Understanding" and "Problem Solving" Ability Rather than Mere Rote Learning of Rules and Procedure: Overall performance of students in Mathematics is not better. It has often been reported that teachers have a low level of subject matter knowledge and pedagogical content knowledge in the subject of mathematics when teaching this subject. The focus in teaching math is usually to encourage students to memorize rules and procedures, and conceptual understanding and actual problem solving are not taught or even studied by teachers themselves. Train teachers teaching math from class V to class VIII on "conceptual understanding" of math content and "problem solving" skill, and how to build these math abilities among students. Training should also be provided on pedagogies of teaching mathematics in a fun and attractive way." It is a well-known phenomenon that students do not like teachers' conventional ways of teaching: directly lecturing the content, dictating the notes, and concentrating on memorization of procedures. Teachers need to be trained on "better math" and be given reading material on better math pedagogies at the Primary and Upper Primary levels.

d) Sharing Powers of Mathematics: Teaching and Learning of Geometry to Schools and Capacitating the Teachers to Teach this Neglected Content Strand Effectively: Further to this it appears that the area of maths that least gets attention in teaching learners is geometry, as scores were extremely low in both grades. Special training in content and pedagogical content knowledge for the instruction of geometry should be implemented. So there should be a few different types of reading resources for teachers. Such UC-based and/or taluka-based interaction (workshops, reflective meetings, demonstration of successful lessons along with critical and reflective discussions) amongst math teachers

that would lead teachers to focus on the teaching and learning of geometry will also contribute to strengthening teachers' capacity to teach geometry effectively.

e) Building teachers' science conceptual knowledge and science inquiry skills by involving them in an appropriate training programme, and making available effective science reading materials and effective science teaching and learning materials: the lowest level of response was observed in science, and almost in science and all the content strands, with a very low performance in physical science, particularly. In this regard, it is widely recognized that the majority of the teachers have adopted the teachers' practice 'sit and get' approach, which seems to be the act of rote learning by students from the science contents, rather than understanding of the science concepts and skills of inquiry and problem-solving. Effective reading materials to share with teachers on the teaching and learning of science, emphasising on the conceptual understanding as well as the inquiry skills and attitude. There are a lot of good tools that are available that teachers should be using.

f) Training Teachers in Test Development (Teacher-Made and Standardized Tests) and in the analysis of Test-based Data to Improve Students' Learning and Teachers' Teaching. Apart from enhancing teachers' professional development in subject matter, teaching skills development of teachers' professional skills as test developers should be done through involvement in workshops and be involved in the testing of teacher made test. Moreover, teachers' capacity to interpret student scores and put them into practice to improve students' learning and their teaching should be strengthened. In-service training, peer coaching, and guidance might be useful ways to boost teacher capacity in testing and assessment.

g) Improving Quality of In-service Teacher Education and Teacher Preparation: So far, in-service teacher education and teacher preparation programmes have been theoretical and disconnected from grass-root realities of the school. Although the time being taken up by the four-year B.Ed Honours programme for the teachers of elementary and secondary has been an issue, recently, there have been good initiatives to curb this and prepare good teachers. Programs need to be supported by relevant provincial educational policies, financing mechanisms for program participants, and teacher recruitment policies that are linked to the requirements demanded for good-quality teacher training. B.Ed 4-year is a successful attempt to lure the meritorious students to the field of teaching. But all steps must be taken to make the schools a place of work, and let grades and compensation be given to the graduates of B. Ed 4-year qualifications.

4. Conclusion

If we know the level of a student's performance and join educational reforms with output and educational administration to engage civil society, Head Masters, teachers,

parents, students, and government to enhance the education status of the province, we can do so.

The objective of this study was to learn more about how standardized achievement tests can be used to validate the summative evaluation of new mathematics and science interventions. For the present study, we required a high-quality sample of applied research.

References

Bakhtiari, M. (2026). Standardization Versus Adaptability: Where Is the Sweet Spot?. *Practical Radiation Oncology*.

https://www.researchgate.net/publication/319750369_Standardized_Achievement_Test_SAT_III_Sindh_Government_Schools_Achievement_Class_V_VIII_-_Subjects_Mathematics_Science_and_Languages [accessed Feb 21, 2018].

www.iba-sukk.edu.pk/SATSindh.

Campino, J. (2026). BERT takes the test: automated essay scoring in the age of AI. *Journal of Computers in Education*, 1-20.

<http://www.rsu-sindh.gov.pk/units/SAT.php>.

de Lange, F. P., & Press, C. (2026). Forward and backward prediction in learning and perception. *Current Opinion in Neurobiology*, 96, 103144.

<http://www.sindheducation.gov.pk/educationReforms/sat.jsp>. [Accessed in 2018]

Miller, J. E., Hodge, K. J., Yoo, H., Taylor, K., Phillips, B. C., & Zapparrata, N. (2026). Predicting Nursing Student Success Through Standardized Assessments. *Teaching and Learning in Nursing*.

[https://dailytimes.com.pk/471301/measuring-up-what-educational-testing-in-sindh-really-implies/23 Sept 2019 Hamid Ali Sheikh](https://dailytimes.com.pk/471301/measuring-up-what-educational-testing-in-sindh-really-implies/23%20Sept%202019%20Hamid%20Ali%20Sheikh).

Pakistan District Education Rankings 2017. Alif Ailaan 2017, Islamabad: Alif Ailaan. vi-66 pp., ISBN: 978-969-7624-06-5.

<https://officialnews.pk/162265/workshop-on-dissemination-of-standardized-achievement-test-sat-v-2016-17-result-conducted-by-sukkur-iba-university/>

Standardized Achievement Test (SAT) III: Sindh Government Schools Achievement Class V & VIII - Subjects Mathematics, Science, and Languages:

Zhou, Y. (2026). The totalizing tournament. *Higher Education*, 1-6.