

# Rethinking Exams: India's New Era of Assessments Will Unlock Every Student's True Potential

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Every year, millions of futures are chosen in the quiet of an exam hall. A proctor's unblinking gaze and the cold light of a screen turn a student's potential into just one number: a percentile, a rank, or a score. This has been the way to get into college for decades. It works well, but it has a major flaw: it encourages conformity instead of curiosity, and it counts what students have recalled instead of what they can achieve. As a result, we have a generation of smart people who know how to find the one right answer in a world whereas the new world we are entering has more and more questions that have more than one right answer.

Is this system, which has been useful for a long time, fast reaching its expiry date? The future of work, which is being shaped by the unstoppable rise of AI and automation, will not reward people who can do the same thing over and over. Instead, it will recompense people who can think critically, come up with fresh ideas, communicate clearly, and work well with others. So, are we entering an era where the skills that regular tests don't test are the ones that will determine a person's career growth and success in future?

In this time of great change, a new notion has come to light: a revolution in assessment that is being developed. This isn't just a small change to an outdated model. This is a complete rethinking of what an exam can and should be. This is the story of India's first semantically adaptive test, which is an assessment that looks beyond the grades and really sees the mind.

## **The Semantically Adaptive Leap: From Fixed Answers to Fluid Questions**

We need to know how computerized testing has changed throughout time in order to understand this new way of doing things. A typical test is a straight line of questions that are the same for everyone and have only one answer. The quickest runner wins in a race where everyone runs on the same course.

The Computer Adaptive Test (CAT) was the first big new idea. A CAT is more like a game of chess. Based on how the student answered the last question, the next question's level of difficulty changes. The next question is harder if you get the first one right, and easier if you get it wrong. This is a great step forward because it lets you test a student's skills with a lot fewer questions. It shows whether a pupil can handle things that are getting more complicated.

The CAT model can also work on next level paradigm: One can create a tough math question and then an even tougher question in the same mathematical concept. However, a CAT with semantic adaptivity can go another substantial step ahead. It can go about changing the problem's context and the way we think about it. It's a big jump from just changing the height of the hurdles to suddenly changing the event from a sprint on a track to a swim in a pool.

Think about a student who is able to solve a hard fluid dynamics problem in physics. A semantically adaptive test doesn't merely give you a harder fluid dynamics issue. Instead, it might recognize the main idea that the student learned—how to grasp flow rates and pressure—and then give them a new topic, like how to build a traffic system to avoid bottlenecks or how to look at the flow of information

in a social network. The basic idea is the same, but the situation is very different. This tests a student's genuine knowledge of an idea, not just their ability to apply a memorized formula. It's like a musician who can only play one song on one instrument and one who can make up a new melody on any instrument and in any key.

It is from here we can enter the next paradigm – the State Space concept, a process used in Artificial Intelligence (A.I). The State space search is a process used to find solutions by exploring different possible states of a problem. It works by systematically checking each state and moving to new states until the goal is reached. It considers the problem as a series of steps and it moves from one state to another until the goal is reached. This method can be applied to various AI tasks such as pathfinding, puzzle solving, game playing and more.

In other words, the State Space paradigm takes a student from one 'state' to 'another state' – basically use it to generate a "problem statement" that tests their critical skills. The problem posed would essentially ask the student as to how he/she would respond to a given situation. And the student could do so either by deduction or planning a strategy, which means a series of questions would lead the student through in a journey through different states.

Secondly, the state-space model could be used to generate more models of a problem or different problems in the same state.

When used in a computer adaptive test (CAT) the state-space paradigm can be an amazing tool for assessing a student's problem-solving abilities. Picture a large three-dimensional constellation where each point stands for a certain idea, skill, or sort of difficulty. The test takes students through this "knowledge constellation" as they answer questions, making a map of their own path. The AI picks the next question not only based on how hard it is, but also based on where it is in the state-space—the question that will best show how well a student understands one idea in relation to another. This makes a tailored, non-linear test that really shows how a student thinks.

The obvious next question is: Where can we use this computer adaptive test model with these paradigms, and do so effectively!

Till recently, cramming information was the basic function of education. It made sense because knowledge was scarce. Today a motivated learner can gain information and knowledge at the least cost. In fact, censoring and misinformation are the real hurdles for learners today amid the of information explosion. That is precisely why, today's education should focus on giving students the ability to make sense of all the information that they get in a 360 degree fashion.

And here's the point where the critical skills for the future, namely, Critical thinking, Creativity, Collaboration and Communication, come to the fore.

## The 4Cs in Action: Beyond the Textbook

The semantic adaptivity paradigm of a computer adaptive test can focus deeply on the 4Cs, which are the key to success in today's environment.

- **Critical Thinking:** Traditional tests usually give you an issue with only one proper answer. A computer adaptive (CAT), on the other hand, will employ AI to give you complicated, unclear case studies. A student could be given a case study about a new medical technique and encouraged to think about how it affects people, society, and the economy. The system would look at more than just their final response. It would also look at the processes they took to get there, the assumptions they questioned, and the counterarguments they thought about. It shows how well a young person can think when they don't know what to do.
- **Creativity:** Creativity is more than just being good at art; it's the capacity to come up with new and useful ideas. The test may provide a student a group of data items that don't seem to be related, such a historical trend, an economic report, or a change in demographics, and then ask them to come up with an interesting story or a new way to solve a social problem. The AI, which would be a very advanced evaluator, would not only give the final product a score, but also look at how the student got there, how original their connections were, and how willing they were to look into different avenues.
- **Collaboration:** In the real world, no big problem can be tackled alone. But our tests are done alone. The CAT evaluation tries to change this by putting students in fake team situations where they have to cooperate with AI-powered agents to solve a hard problem. As an example, a student would have to negotiate with and respond to AI agents that stand for different stakeholders in a fake corporate setting. Then, the system would check how well they can persuade others, take feedback, and work together to reach a common goal.
- **Communication:** Good communication is what makes a great idea have an effect. The CAT will do more than just check grammar. The test might use advanced natural language processing (NLP) to look at the subtleties of how a student communicates, such as how persuasive they are, how well they can change their tone to fit a certain audience, and how well they can explain complicated ideas clearly and concisely. The AI could rate how well a student writes a memo for the CEO and a press release for the public on the same subject.

## The Diagnostic Compass: Finding Your Way to Progress in Your Mind

The semantically adaptive CAT can also make the output of the exam or assessment richer and more complete. Traditional tests give a rank, which is just one point on a line. Here it is possible to offer a full, multi-dimensional diagnostic report. It's the difference between a doctor saying, "You are healthy," and giving you a full report on your blood pressure, cholesterol, heart rate, and metabolic function, along with advise on what to do next.

The diagnostic map output is akin to a personalized compass for each student's education. It will show off a student's best skills, including how well they are at logical reasoning or coming up with new ideas in a certain area. More significantly, it will find weaknesses with pinpoint accuracy. It can tell whether a pupil doesn't fully understand a concept or when they have trouble using a skill in a new situation.

This data is not only for the student. For universities, it makes the admissions process more detailed and well-rounded, which helps them find people who have the natural ability to do well in their programs. It gives parents and teachers a clear plan on how to help their students and make learning more personal. It is a great way to fill in gaps in knowledge and help people develop their skills where they are most required.

### A Final Point

The Semantically adaptive assessment is more than just a new test; it shows what we think is important in education and what we think makes a successful life in the 21st century. It recognizes that the world is changing faster than ever before, and our ways of testing or judging things need to change to keep up. It is not merely making a test more efficient by getting rid of predefined questions and linear scoring. It can make a system that respects how each student thinks, helps them learn more deeply, and gives them a clear path to follow to keep becoming better. It makes a strong case for a future where education isn't just about giving students information, but also about giving them the skills and tools they need to navigate and build a world that hasn't been built yet.

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