



Using cognitive data for accurate class placement, LO integration, and pedagogical support in the South African classroom.

1. The Case for Cognitive Streaming

The transition from Grade 7 to Grade 8 is a critical juncture in a South African learner's academic career. Traditionally, schools have relied on primary school marks to determine class placement. However, this approach faces significant challenges:

Rote Learning Trap

High primary school marks often reflect memory and effort rather than underlying cognitive capacity for more abstract high school concepts.

Standardization Gap

Marking standards vary wildly between different primary schools, making it difficult to compare learners fairly on numerical data alone.

The SkillsPassport Solution

SkillsPassport moves away from *retrospective* data (what they've done) to *prospective* potential (what they can do). We measure the three pillars of cognitive reasoning:

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Verbal Reasoning

Assessing comprehension, linguistic deduction, and the ability to process complex instructions. Essential for Languages, History, and LO.
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Numerical Reasoning

Testing pattern recognition and mathematical logic. The primary indicator for success in Mathematics, Accounting, and Science.
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Non-Verbal Reasoning

Evaluating spatial awareness and abstract logic without language dependence. Critical for EGD, Art, and Technical subjects.

The Benefit

Data-driven streaming reduces classroom friction, ensures teachers can pitch lessons at the correct level, and prevents learners from being overwhelmed early in the year.

2. The Assessment Architecture

The platform is designed to be resilient to the realities of South African infrastructure while maintaining high pedagogical standards.

2.1 Offline Resilience (Loadshedding Ready)

To accommodate infrastructural challenges, the system includes built-in local caching:

- **Local Save:** If the internet drops during a quiz, answers are saved directly to the device's browser memory.
- **Auto-Sync:** As soon as connectivity returns, the platform silently syncs all data to the cloud dashboard.
- **Zero Data Loss:** Learners never have to restart a quiz due to power cuts or connectivity drops.

2.2 The "Soft Nudge" Intervention

To combat rushing, the system uses automated pedagogical support. If a learner scores below a set threshold but has attempts remaining, the system intercepts them:

"Your score is okay, but your school uses this for Grade 8 class placement. You have one more attempt—do you want to try for a higher score?"

This forces the learner to reflect on their effort and take accountability for their final result.

2.3 Educator Controls & Overrides

While the system is automated, the Educator remains in control:

- **Unlock Requests:** If a learner fails all attempts, they can click "Ask Teacher to Unlock."
- **Teacher Dashboard:** Educators can see the exact reason for the failure (via Telemetry) and choose to grant a final attempt or lock the score with a written rationale.

3. Deep Behavioral Telemetry

SkillsPassport looks beyond the final score. The **Telemetry Engine** records how a learner interacts with the assessment to give educators context on *why* a score was achieved.

Rushing vs. Dwelling

We track the time spent on every single question. A 40% score from a "Rusher" (3 seconds per question) means something very different than a 40% from a "Dweller" (3 minutes per question).

Distraction Tracking

The system detects if a learner switches tabs, minimizes the window, or clicks away from the test environment, flagging potential disengagement.

Class Placement Strategies

Using this data, schools can create highly effective class groups:

Cognitive Profile	Ideal Stream
High Numerical + High Non-Verbal	STEM / Technical Stream (Maths, Science, EGD)
High Verbal + High Non-Verbal	Humanities / Design Stream (Languages, Art, History)
Consistent Balanced Profile	General Academic Stream

LO Integration

The results from these assessments automatically populate the learner's **World of Work Explorer**, showing them which careers are "Available" based on their academic potential.