ABC Genie Pilot Study: Transforming Early Vocabulary Learning Through Play-Based Innovation

In early childhood education, big ideas often start small. The **ABC Genie** pilot study at **Gyan Tarang School**, Mohali, India (May 2025) was designed with one clear purpose: to prove the concept that children can build stronger vocabulary, confidence, and joy in learning when we give them the right mix of play, structure, and data-backed observation.

Research Context and Methodology

This was not about testing a finished product. Instead, it was about asking a bigger question:

> 👉 **Can a simple, playful system help children recognize letters, use words meaningfully, and feel proud of their learning?**

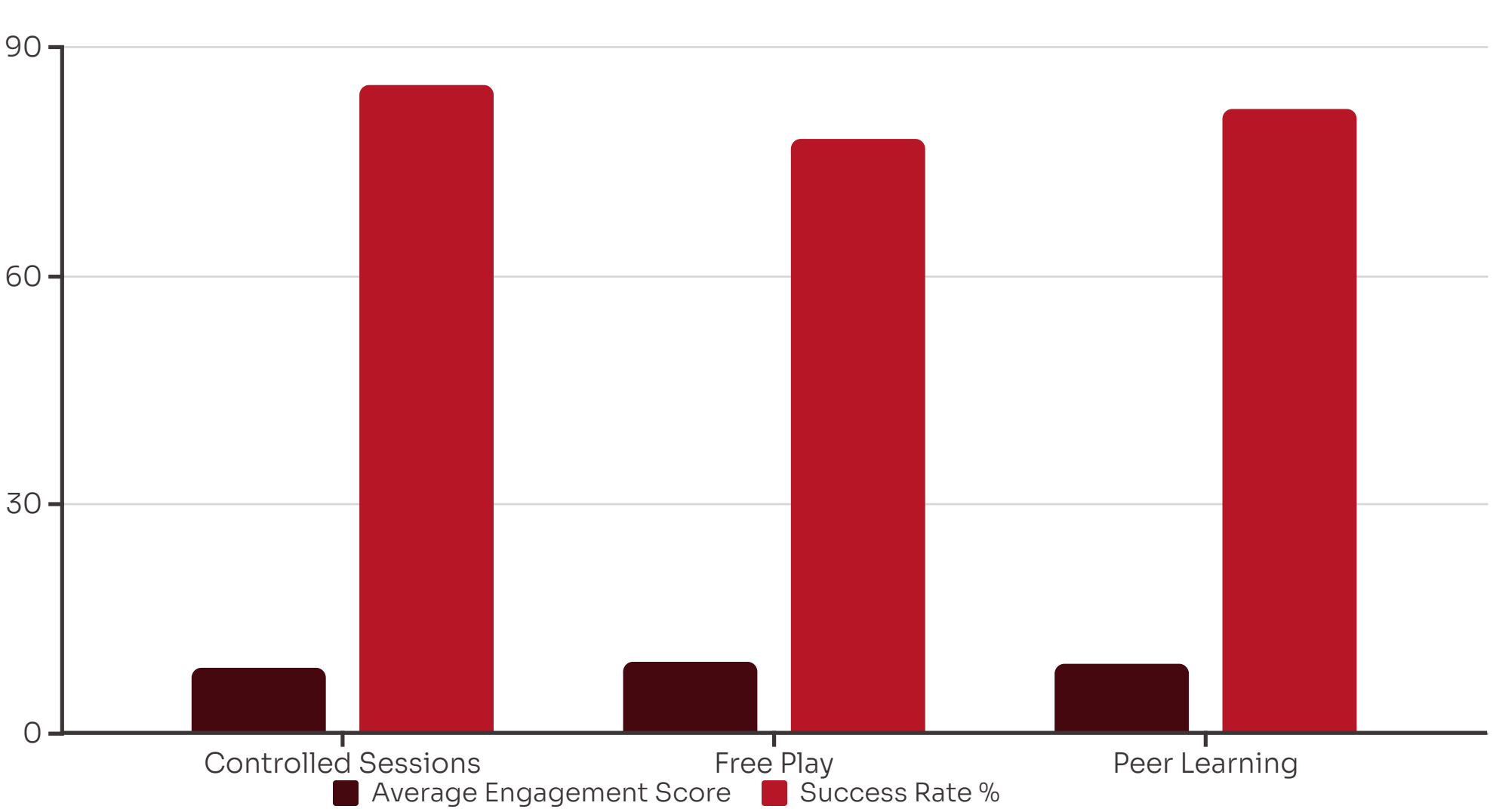
Over three days, five children at Gyan Tarang School—Aryan, Naaz, Simran, Kabir, and Ananya—took part in guided and free-play sessions using the ABC Genie learning approach. Teachers and administrators observed closely. Instead of an app, data was captured manually: teachers filled out observation logs, retry sheets, and mood trackers. These records gave us a snapshot of not just "what" children learned, but "how" they learned—how many retries they made, how their moods shifted, how engaged they stayed, and how they celebrated success.

For teachers, the pilot offered a new lens to see learning in action: not just "Did the child get it right?" but also "How did the child try, react, and grow in the process?" For administrators, it offered a chance to see whether such a system could fit into their broader goals for early learning—play-based, inclusive, and measurable.

Participant Engagement and Learning Dynamics

The children brought the concept to life. Each of them interacted differently—some cautious, some bold, some curious, some playful—but together they painted a clear picture: when learning feels like discovery, children engage more deeply and teachers gain richer insights.

This pilot was the first step toward proving that **ABC Genie** isn't just another teaching aid. It's a concept that combines hands-on play, teacher insight, and data-driven reflection into a system that could shift how we think about **vocabulary** and early literacy in the classroom.



Individual Learning Profiles and Behavioral Analysis

Over three days at Gyan Tarang School, we didn't just see children identifying letters. We saw curiosity, persistence, pride, and play come alive around the ABC Genie board. Below is a closer look at how each child engaged with the concept.

Aryan (5 years)

Aryan started cautiously. On Day 1, he hesitated when asked to find the letter "G." It took him three retries before he succeeded on the fourth attempt. But what mattered more than the final success was his reaction — when he got it right, his face lit up, and he exclaimed, "It's like a treasure hunt!"

What this shows: Aryan's journey proved the value of retries and resilience. The system encouraged him to keep trying until success, making the final moment joyful instead of frustrating.

Naaz (4 years)

Naaz was instantly drawn to the pegs. The letter "V" became her favorite, and she proudly repeated, "V for Van!" several times across the sessions. By Day 3, she wasn't just learning for herself — she started pointing out letters to her peers, gently guiding them as if she had become a teacher.

What this shows: Naaz highlighted the peer-learning potential of ABC Genie. When children are excited, they naturally share their discoveries, spreading confidence and reinforcing their own learning.

Simran (5 years)

Simran began shyly, hanging back in the group. But during smaller activities, she warmed up and found her voice. She identified M, O, and U correctly after prompts, though she needed extra support with S. By Day 2, she was more engaged when playing alongside Kabir, celebrating small wins with him.

What this shows: For children like Simran, social learning matters. The system created space where she could learn not just from teachers but also from her peers, proving the flexibility of the approach for different personality types.

Continued Individual Analysis and Retry Pattern Data

Kabir (4.5 years)

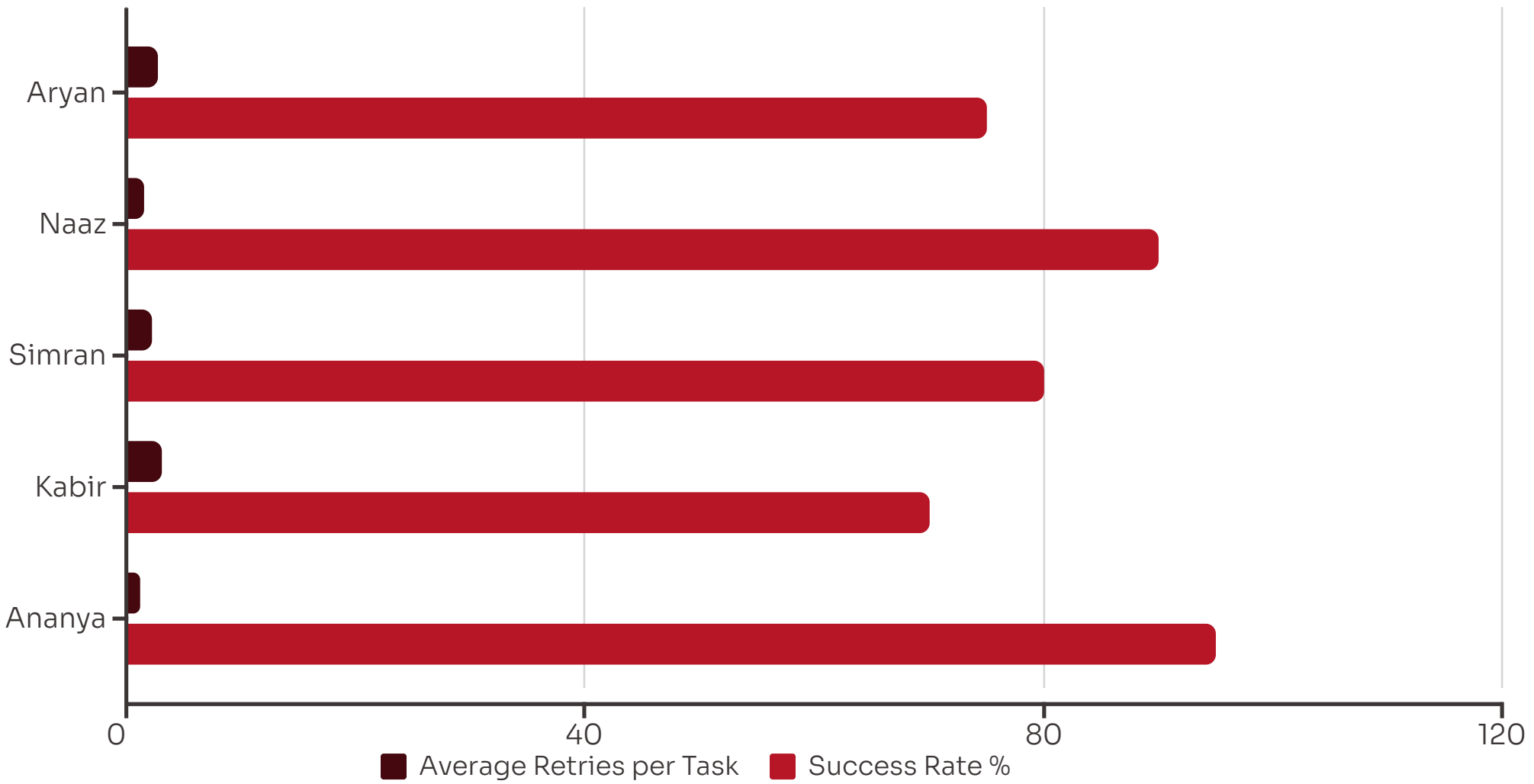
Kabir was full of energy. He often rushed ahead, grabbing pegs before the teacher finished asking. While this meant retries were common (especially with K), his enthusiasm was undeniable. At one point, he started making patterns with pegs — stars and shapes — before returning to the activity.

What this shows: Kabir demonstrated that learning isn't linear. Playful detours are not distractions but part of how young children engage. The ABC Genie system's open-ended design allowed him to express creativity while still anchoring back to vocabulary.

Ananya (5 years)

Ananya was calm and focused throughout the sessions. She carefully followed prompts, quickly recognizing letters like F, H, and N, and even tested herself by covering letters and uncovering them again to "quiz" herself. She rarely needed retries, but when she did, she corrected quickly without losing focus.

What this shows: Ananya showed us the potential for independent, self-directed learning. The system is not only engaging in groups but also supportive of children who prefer structured, personal exploration.



Group Learning Patterns and Mood Analytics

Controlled Sessions (teacher-led)

Helped children stay on task, leading to higher accuracy and recall (especially Aryan and Simran).

Uncontrolled Sessions (free play)

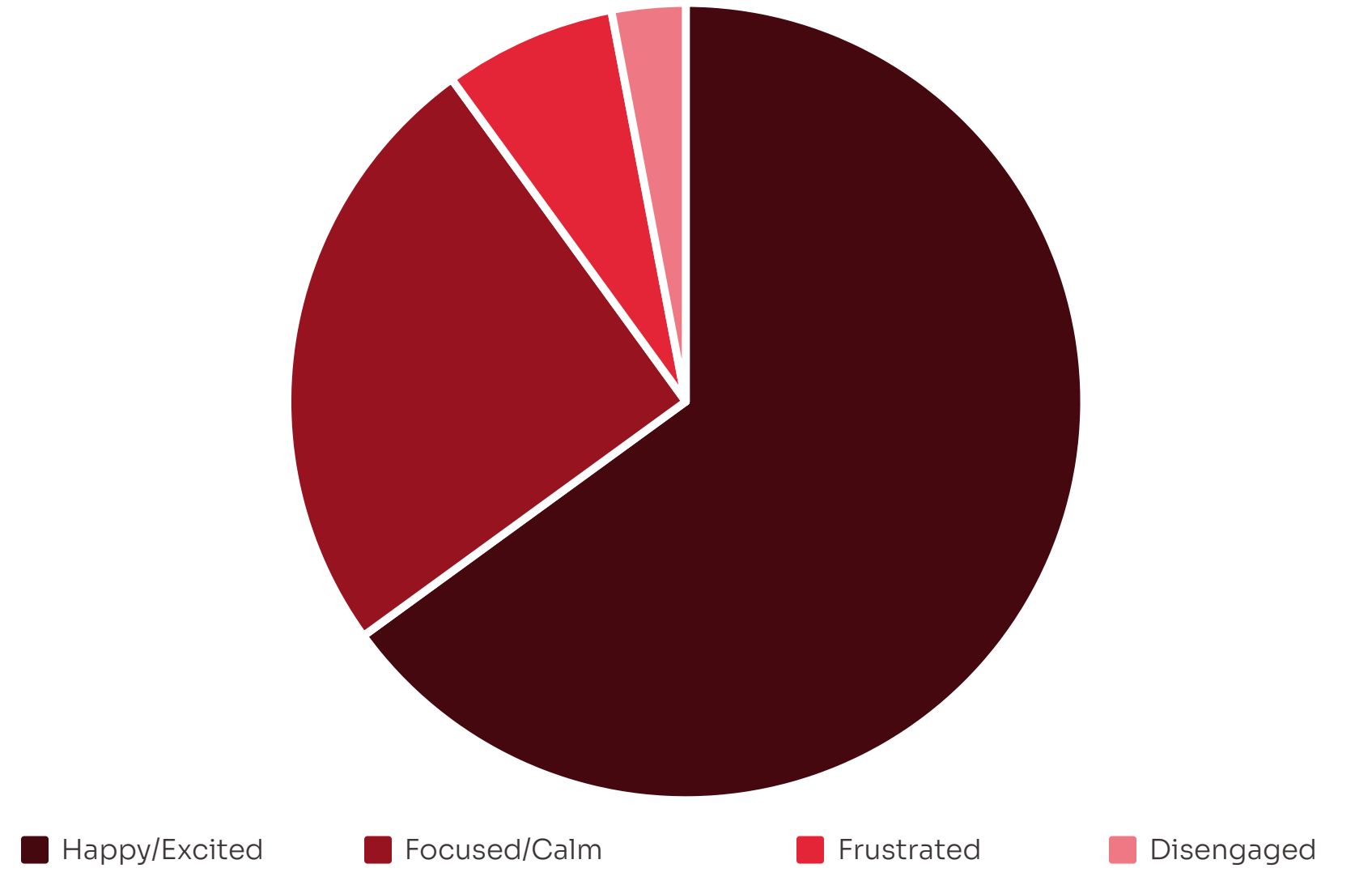
Sparked creativity, ownership, and peer-to-peer teaching (especially Naaz and Kabir).

Mood & Engagement

Children consistently showed happiness or excitement when they succeeded. Frustration was brief and often flipped into joy after retries.

Retries as Growth

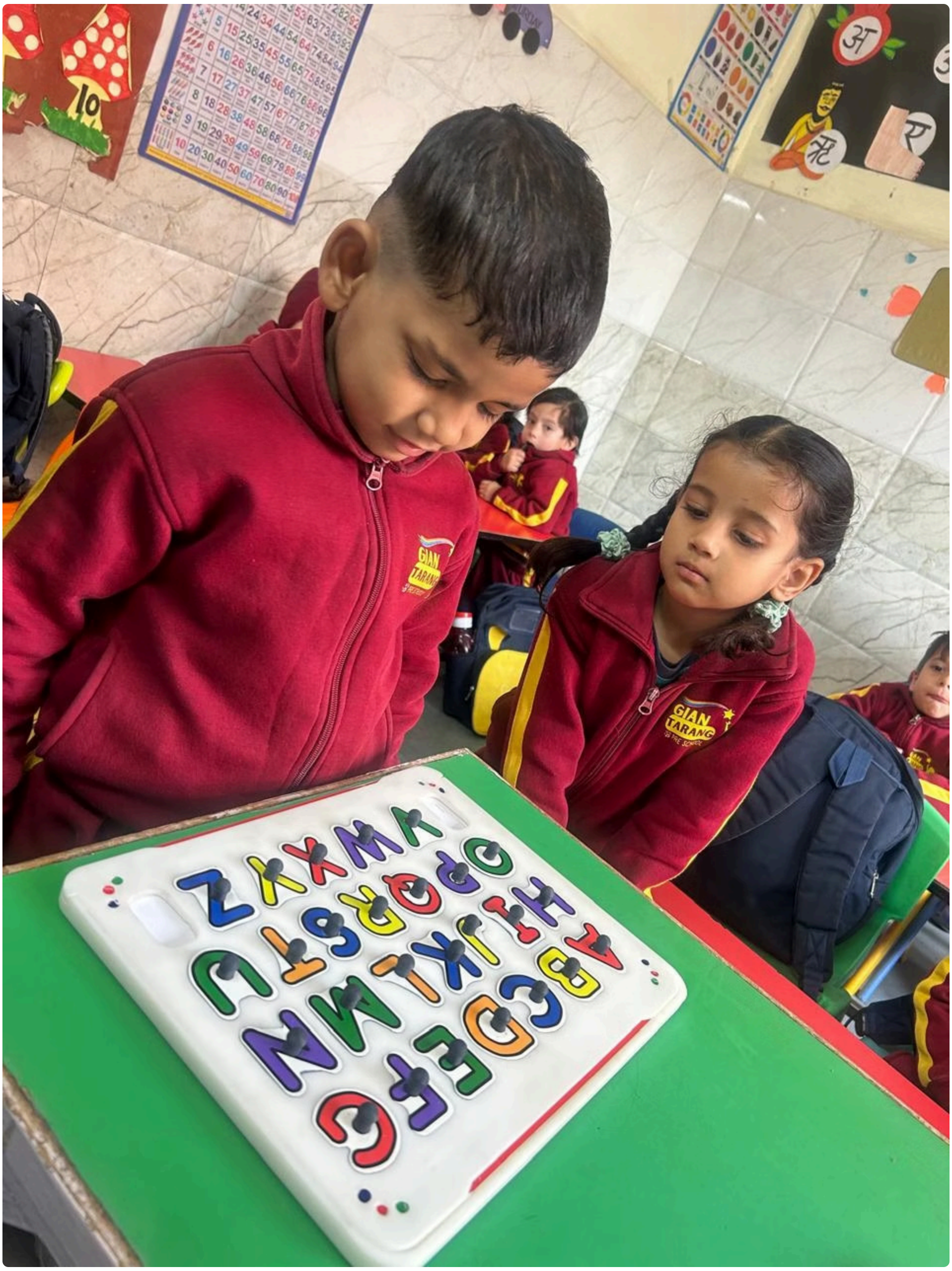
The act of trying again became a central feature of learning, shifting "failure" into resilience.



What We Learned from the Observations: The pilot proved that the concept works: Children stayed engaged. They showed measurable progress in letter recognition over just three days. Emotions — pride, joy, excitement — were part of the learning process. Teachers observed new dimensions of learning (perseverance, collaboration, independence) that traditional worksheets or flashcards don't reveal.

In short: ABC Genie transforms vocabulary learning from a memorization exercise into a joyful, social, and emotionally rich experience.

Educator and Administrative Perspectives



While the children gave us the clearest picture of how ABC Genie works, the adults in the room offered the lens of practicality, scalability, and alignment with educational goals. Their voices matter because teachers and administrators are the ones who will bring this concept to life every day.

👩‍🏫 Teacher Reflections (Jeniffer & Chhaya)

Both teachers noted how quickly children adapted to the ABC Genie sessions.

- **Ease of Use:** "The system felt natural to use — no complicated setup, no steep learning curve. We could jump straight into activities, and the children picked it up even faster than we expected."
- **Engagement:** "Children didn't want the sessions to end. Even the quieter ones leaned forward and paid attention when the pegs came out."
- **Clarity of Materials:** "Everything was intuitive. We didn't need lengthy instructions — the board and pegs spoke for themselves."

👨‍💼 Administrator Reflection Arjit Singh)

Mr. Arjit observing as the school's administrator, focused on the bigger picture:

1. **Learning Experience:** "The children were not just learning letters. They were enjoying the process, laughing, and sharing discoveries. That is rare in literacy activities."
2. **Support for Teaching Goals:** "Yes, this aligns with our vision of play-based learning. It moves away from rote memorization and creates real engagement with language."
3. **Scalability:** "I can see this working across multiple classrooms. If teachers receive consistent training, it could be integrated into our early years program easily."

Professional Validation and Implementation Insights

What Worked Well

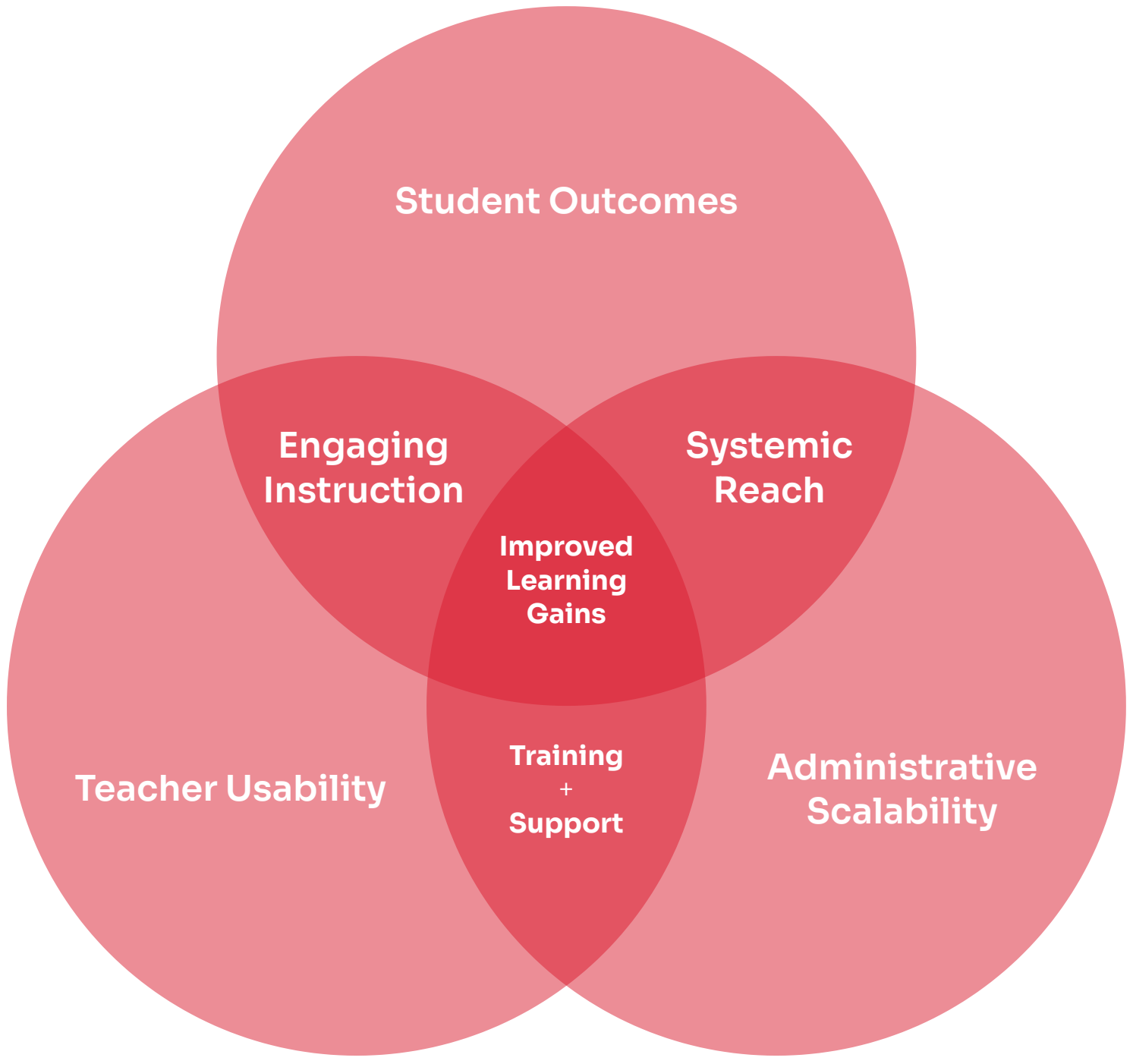
"It's interactive, playful, and children get instant feedback. The retries weren't setbacks, they were moments of determination. That was new to see."

Suggestions for Improvement

"The board could be lighter for easy handling, especially if we move it between classrooms. And training sessions for teachers would help us explore even more creative activities with it."

Scalability Concerns & Recommendations

"Portability is key. Boards should be manageable for teachers to carry around. Also, given our diverse classrooms, adding bilingual support (English + Hindi) will be essential. If those adjustments are made, this system could scale district-wide."



💡 **What the Feedback Proves**: Teachers validated the concept's usability — simple to set up, intuitive for children, engaging across different personalities. The administrator validated its scalability — with small adjustments, this isn't just a classroom tool, but a system that could grow across schools. Both groups emphasized training and bilingual content as natural next steps, reinforcing that ABC Genie is not a "toy" but a platform for structured, measurable, and inclusive learning.

✨ In the words of Teacher Jeniffer: "This didn't feel like another activity we had to 'manage.' It felt like the children were managing themselves — and we were there to celebrate with them."

Research Conclusions and Strategic Recommendations

🌟 Conclusions

The three-day pilot at Gyan Tarang School, Mohali proved more than just whether children could recognize letters. It proved that learning can be joyful, resilient, and measurable when children are given tools that honor both their curiosity and their agency.

Across five children — Aryan, Naaz, Simran, Kabir, and Ananya — we saw:

Engagement that lasted

Children leaned in, laughed, and persisted through retries.

Confidence building

Successes were celebrated not just by the child but by peers.

Different learning styles supported

Shy, bold, playful, and structured learners all found their way in.

Peer learning

Children naturally began teaching each other, showing the potential for collaborative growth.

Teacher empowerment

Teachers found the system intuitive, freeing them to focus on observing and celebrating rather than managing behavior.

Administrative vision

Leaders recognized the potential for scaling — with some refinements — across classrooms and schools.

> **In short:** ABC Genie transformed vocabulary learning from memorization into discovery.

Implementation Roadmap and Future Directions

🚀 Next Steps

The pilot has given us clear direction for the path ahead:

Refine for Practicality

- Make the board lighter and easier to carry.
- Ensure durability of pegs and components for daily classroom use.

Expand Pilots

- Run similar proof-of-concept pilots in additional Mohali and Chandigarh schools.
- Gather broader data across different teacher styles and child demographics.

Bilingual & Inclusive Design

- Add Hindi alongside English to ensure accessibility in diverse classrooms.
- Plan for multilingual expansions in future phases.

Teacher Training & Workshops

- Develop structured onboarding for teachers, ensuring consistent and creative classroom use.
- Position training as professional development, not just "how-to" sessions.

From Manual to Digital

- Transition from observation forms to the ABC Genie app for automated data capture.
- Provide administrators with real-time dashboards and reports.

✨ **Final Word**: This pilot was never about testing a gadget. It was about proving a concept: that children thrive when play, data, and empathy meet in the classroom. At Gyan Tarang, in just three days, we saw **resilience, joy, and curiosity** come together — confirming that ABC Genie can help schools and systems reimagine **early vocabulary learning at scale**.

Privacy Disclaimer: In the interest of protecting student privacy and maintaining ethical research standards, the original names of participating students have been changed for this study. All observational data and findings remain authentic and unaltered, representing genuine learning outcomes and behavioral patterns observed during the pilot implementation.