MPOWERME, LLC (Pediatric OT & SLP Services) Play To Do™ (Education Consulting • Toy/STEAM Design • Research) OT-Informed Project-Based Learning for Inclusive K–5 Classrooms

Qualitative Reflections & Learning Experience Summary

Introduction: Why Qualitative Insights Matter

While quantitative data shows measurable skill gains, qualitative insights reveal the lived experience of students engaged in OT-informed Project-Based Learning (PBL). These observations capture the emotional shifts, social interactions, moments of resilience, and changes in identity that cannot be represented by numbers alone. In the Zoo Pilot, student voice and facilitator observations illuminated how engineering challenges supported growth in confidence, collaboration, communication, and problem-solving.

The Learning Environment: What Participation Looked and Felt Like

Across six sessions, the Zoo Pilot became a dynamic environment where students explored ideas, tested solutions, and supported one another. Early sessions showed hesitation, cautious tool use, and uncertainty in decision-making. By Session 4 and beyond, students demonstrated increased ownership, joy, confidence, and willingness to take risks. The atmosphere grew increasingly collaborative as students noticed each other's strengths and celebrated design breakthroughs.

Student Voice: What Learners Said About Their Experience

A. Confidence & Capability

- "I didn't know I was a good engineer until this."
- "At first I didn't think I could build it, but when I tried again, it worked."

B. Collaboration & Teamwork

- "We got better every time we worked together."

C. Problem-Solving & Iteration

- "Mistakes helped us find a better way."

D. Emotional Regulation & Resilience

- "I didn't get frustrated today…I fixed it instead."

E. Creativity & Ownership

- "This is my design. I thought of it!"

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Facilitator Insights: What We Observed in the Learners

Facilitators documented numerous qualitative shifts throughout the pilot. These reflections highlight patterns of growth that align with executive function development, SEL competencies, and early engineering thinking.

• Students who typically hesitated began initiating tasks independently.

• Learners who struggled with frustration demonstrated increased tolerance and persistence.

• Peer-to-peer teaching naturally emerged, with students modeling connector techniques or stability tests.

• Engineering vocabulary appeared spontaneously in discussions (e.g., "reinforce," "support," "balance").

• Many learners demonstrated deeper engagement when using tactile materials and movement-based problem-solving.

Case Snapshots (Mini Vignettes)

Case Snapshot 1 — The Quiet Builder Who Became a Leader

This student preferred observing and completing small tasks independently during early sessions. By Session 4, they began explaining design choices to the group and actively helping peers troubleshoot structural challenges. Their confidence increased as they mastered connectors and used engineering vocabulary with precision.

Case Snapshot 2 — Flexible Thinking Through Failure

This learner initially reacted strongly when structures collapsed. Over time, they reframed mistakes as opportunities. By the final sessions, they were the first to say, "Something's wrong…let's figure out why," modeling calm, regulated problem-solving for peers.

Case Snapshot 3 — Tool Mastery Reduced Anxiety

A student with high baseline anxiety became noticeably calmer as they developed fluency using connectors and the cut-out materials. As material fluency increased, worry decreased. They began taking creative risks and contributing more actively in group tasks.

Case Snapshot 4 — Executive Function Growth in Real Time

One learner struggled with planning and sequencing during early sessions. By Session 5, they required minimal verbal & visual cues to create a build plan before starting, referenced materials intentionally, and adjusted the design when needed -- demonstrating meaningful EF growth.

Observed Growth Across EF, SEL, Communication & STEM Identity

Qualitative analysis across sessions revealed consistent growth across multiple developmental domains:

- Improved planning and sequencing skills (Executive Function).
- Increased frustration tolerance and emotional regulation (SEL).
- More collaborative communication and negotiation during group work (SEL).
- Clearer and more confident verbal explanations of design choices (Communication).
- A growing sense of identity as engineers, creators, and problem-solvers (STEM Identity).

Student Work Samples & Reflections

Students explain how habitat features support animal needs.

Habitat in progress showing intentional reinforcement strategies.

Students become familiar with the materials and discuss design, demonstrating early planning and idea generation.

What These Qualitative Findings Tell Us About Inclusive Learning

The qualitative reflections from the Zoo Pilot highlight the unique strengths of OT-informed PBL as an inclusive learning model. Multisensory materials created natural points of access for neurodivergent learners. Collaborative structures supported social-emotional development. Warm-ups reduced cognitive load, enabling students to take risks they might otherwise avoid. The result was a learning environment where diverse learners could thrive, express themselves, solve problems creatively, and begin to see themselves as capable engineers.