

# Research Reveals Best Practices for Teaching ELL Students Playing WePlaySmart® (WPS)

## Study Background:

Dr. Catherine Miller completed her doctorate research at the University of California at Berkeley where she explored ways digital technology can successfully support language interventions with English Language Learners (ELL) in Pre-K.

Dr. Miller has over 20 years in education. Her experience as a teacher and later working with classroom teachers has propelled her interest and motivation in accelerating the English language and literacy skills of ELL children. In Spring 2014, she discovered the WePlaySmart multi-touch table in a classroom in Modesto, CA. It was at this time, she formed the premise for her dissertation research.

The reason for choosing the multi-touch table for her research was obvious to her. “There is a narrative involved with the WePlaySmart software that makes it a little like an e-book. Children are presented with a scenario that provides a lot of context for a theme, like tidal pools, a forest, or outer space. As the children solve the problems by the different games, they also have opportunities to see and hear new vocabulary in context, just like a book. Once the children solved the set of problems, the “story” was over. I used the multi-touch table as a tool to structure our small group interactions like a read aloud.”

Dr. Miller continues, “Children need to be encouraged to talk in early childhood, especially when they are English Language Learners. And I wanted to explore the ways a teacher can accomplish important language learning at a multi-touch table by staying connected to the process. Social interaction and language modeling is easier with a table because you can easily join the children and participate as a member of a group.”

**Study Premises:** Will preschool children whose home language is Spanish acquire language while playing technology?

**Study Protocol:** Three test groups randomly assigned, two classrooms (one with WePlaySmart, one without), children spoke rarely in the classrooms with little or no verbalization, consented children, gold standardized test measures administered (pre-and post-), teachers same education, same curriculum  
Three conditions: Control classroom-no table, second classroom had two groups in study: Group 1-table with unguided play (some intervention with teacher), Group 3-table with guided play (teacher available during play at all times. Groups 1 and 2 played on average 15 to 20 minutes per week.

**Study Findings:** In Group 1 and 2, children increased their emergent academic development in concept and content. In the pretest, all children in all three groups were at the floor in the test measures which is as low as you can go. The WPS children rose to baseline in both groups. However, the children with guided play with the teacher, tested out the same or exceeded the high language children (non ELL) in the classroom.

**Additional Findings:** The amount of language generated during the small group sessions playing the table’s software, and children remembering the vocabulary from these sessions up to seven weeks after the study. The adult scaffolding of how to advance in the activity and how to talk with each other about what was occurring enhanced used of the table.



Another finding was how eager the children were to help each other navigate the activities. A key element of the study design was getting children to talk to each other. Children in the study were paired in high-and low-language teams. When playing “teacher”, children shifted from an aggressive to a collaborative stance. Where only a few moments before they were grabbing for their partner’s baby orca, for example, they shifted to modeling how to move it and explaining patiently to “bring it to the mommy.”

Theories show that another child modeling language can be just as effective as an adult. This peer-to-peer modeling has the additional benefit for allowing children to practice academic language in an authentic context, so ‘expert others’ are designed in all activities. Even though, Dr. Miller changed some of the function when she was assisting them, children displayed social-emotional benefits of working together. They learned quickly. Their interactions evolved as they began sharing and talking. The effect scaffolding peer-to-peer conversations on collaborations was surprising.

### **Summary of Study:**

The final dissertation was completed and presented to Catherine Miller’s doctoral board the summer of 2015. Below are some of the benefits of the WePlaySmart multi-touch table.

- ELL children can gain strong academic language skills with scaffolding in preschool with the routines and tools that are on hand. Technology should be used as a tool for early learners to learn essential language skills for their transition into kindergarten.
- Answers to some of the struggles inherent in underserved populations can be assisted with appropriate technology.
- Ideas for strategic use of technology if appropriate can transition from teacher-directed to independent play.

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