Impact of Interactive Technology on Kindergarten Children’s Engagement and School Readiness

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Agenda

• Interactive Whiteboards and Student Engagement
• Pilot Background
• Pilot Goals, Features, Timeline, and Evaluation
• Findings & Learnings
• Results
• Next Steps
Interactive Whiteboards and Student Engagement

The Technology Effect
- Technology boom has led to a dramatic rise in the amount and type of technological tools available to educators
- Technology engages students and captures their attention
- As a result, there is higher motivation to integrate technology in classrooms

The Research
- IWBs positively impact student engagement and visual learning (Beeland, 2002)
- IWBs positively impact student motivation and involvement (Cogill, 2002)
- IWBs successfully enhance kindergarten students’ learning in science (Preston and Mowbray, 2008)
- IWBs positively impact kindergarten students’ achievement in mathematics and early literacy skills (Park et al., 2011)
Background

• Budget cuts in the K-12 setting have reduced many kindergarten programs from full-day to half-day settings
  – This practice could be negatively affecting students’ first-grade readiness
• Knowledge Universe® (KU) operates over 450, private, full-day kindergarten programs across 39 states
• To meet children’s and families’ full-day educational needs and to strengthen its current kindergarten offering, KU piloted a new, full-day, academic kindergarten program
• The program incorporates the use of interactive whiteboards and online kindergarten content from K12 Inc.
Goals of Pilot

Goals

1. To determine whether the new solution positively impacts student learning and engagement with the program
2. To determine whether the new solution positively impacts program quality and teacher engagement
3. To determine whether the inclusion of interactive technology positively impacts families’ perceptions of program quality
4. To determine whether the new solution positively impacts students’ first-grade readiness
Features of Pilot

Program Features

1. New curriculum, books, manipulatives, and other educational materials sourced through K12 Inc.
2. Interactive whiteboard and computer solution installed in each classroom
3. Direct instruction, interactive games, and online activities through the whiteboard combined with use of materials/manipulatives and hands-on activities in large-group, small-group, and individual settings
4. Training in use of whiteboard and curriculum implementation provided to all classroom teachers, program assistants, and center directors
5. Ongoing, monthly support provided to teachers
Timeline and Evaluation of Pilot

Timeline
Phase 1: Proof-of-Concept test (November 2010 through June 2011)
   Launched in two centers; implemented for six months.
Phase 2: Pilot Program (August 2011 through June 2012)
   Launched in 15 additional centers.

Evaluation
Data gathered through family and teacher surveys, and comparison of students’ assessments/performance in prekindergarten and kindergarten
Goal 1 - Findings

Impact of IWB on Students' Learning and Engagement
(Teacher survey; sample size = 18)

- Students participate with interest and enthusiasm: 50% (Strongly Agree), 50% (Agree)
- Students display positive attitude and motivation toward learning: 89% (Strongly Agree), 11% (Agree)
- Students retain information better: 56% (Strongly Agree), 17% (Agree)
- The use of the IWB along with traditional teaching methods enhances students' ability to learn: 88.9% (Strongly Agree), 11.1% (Agree)
My students love it!

My students want to practice skills already mastered! It adds more depth to their learning...

The whiteboard has changed their world … it allows them to make connections.

It gives the children more ownership of their learning… allows them to participate in lesson planning and teaching.

They love to touch it… sing things they heard on it.

What's on your feet? 1-18-2012

Boots
**Goal 2 - Findings**

**Impact of IWB on Program Quality and Teacher Engagement**
(Teacher survey; sample size = 18)

- **The program has gone to a whole other level!**
- **It (IWB) allows me to interact with the children in different ways.**
- **..such an asset...makes teaching fun and interesting.**
- **The whiteboard keeps us competitive!**

The IWB provides a high-quality educational experience:
- 67% Strongly Agree
- 28% Agree
- 6% Neutral
- 0% Disagree
- 0% Strongly Disagree

The IWB has positively influenced the way I interact with and teach my students:
- 56% Strongly Agree
- 44% Agree
- 0% Neutral
- 0% Disagree
- 0% Strongly Disagree

The use of the IWB along with traditional instructional methods enhances students' outcomes:
- 78% Strongly Agree
- 22% Agree
- 0% Neutral
- 0% Disagree
- 0% Strongly Disagree
Goal 3 - Findings

Impact of IWB on Families' Perceptions of Program Quality
(Parent survey; sample size = 70)

- Provides a high-quality educational experience for my child: 67% Strongly Agree, 29% Agree, 3% Neutral, 0% Disagree, 1% Strongly Disagree
- Is an effective way to engage my child: 70% Strongly Agree, 25% Agree, 4% Neutral, 0% Disagree, 1% Strongly Disagree
- Has increased my child's motivation to attend school: 48% Strongly Agree, 22% Agree, 25% Neutral, 1% Disagree, 1% Strongly Disagree
- Has enhanced my child's ability to learn: 57% Strongly Agree, 22% Agree, 19% Neutral, 1% Disagree, 1% Strongly Disagree
- Is a key component in the successful delivery of the curriculum: 48% Strongly Agree, 32% Agree, 16% Neutral, 1% Disagree, 1% Strongly Disagree
- My child receives the right balance of online and offline learning experiences: 58% Strongly Agree, 25% Agree, 14% Neutral, 1% Disagree, 1% Strongly Disagree
Goal 4 - Findings

Does the inclusion of interactive technology enhance students’ first-grade readiness?

Prekindergarten End-of-Year Scores

# of students = 71

% Students Exceeding Kindergarten-Level Expectations

Language Arts = 9%
Math = 10%
Science = 7%

Kindergarten Midyear Scores

# of students = 71

% Students Exceeding Kindergarten-Level Expectations

Language Arts = 9%
Math = 10%
Science = 7%
Results and Next Steps

Results
  To date, the new solution demonstrates positively influenced on:
  - Students’ learning and engagement with program
  - Program quality and teacher engagement with program
  - Families’ perceptions of program quality
  - Students’ first-grade readiness

Learning's
  - Training and follow up support are paramount for teachers
  - Training beyond technology is necessary (classroom management, grouping methods, differentiated instruction)
  - Children need to be taught and accountable for appropriate tool usage

Next Steps
  Based on the success of the pilot, the interactive kindergarten program will be expanded to 30 additional kindergarten classrooms, beginning Fall 2012.
Thank you!

Questions?