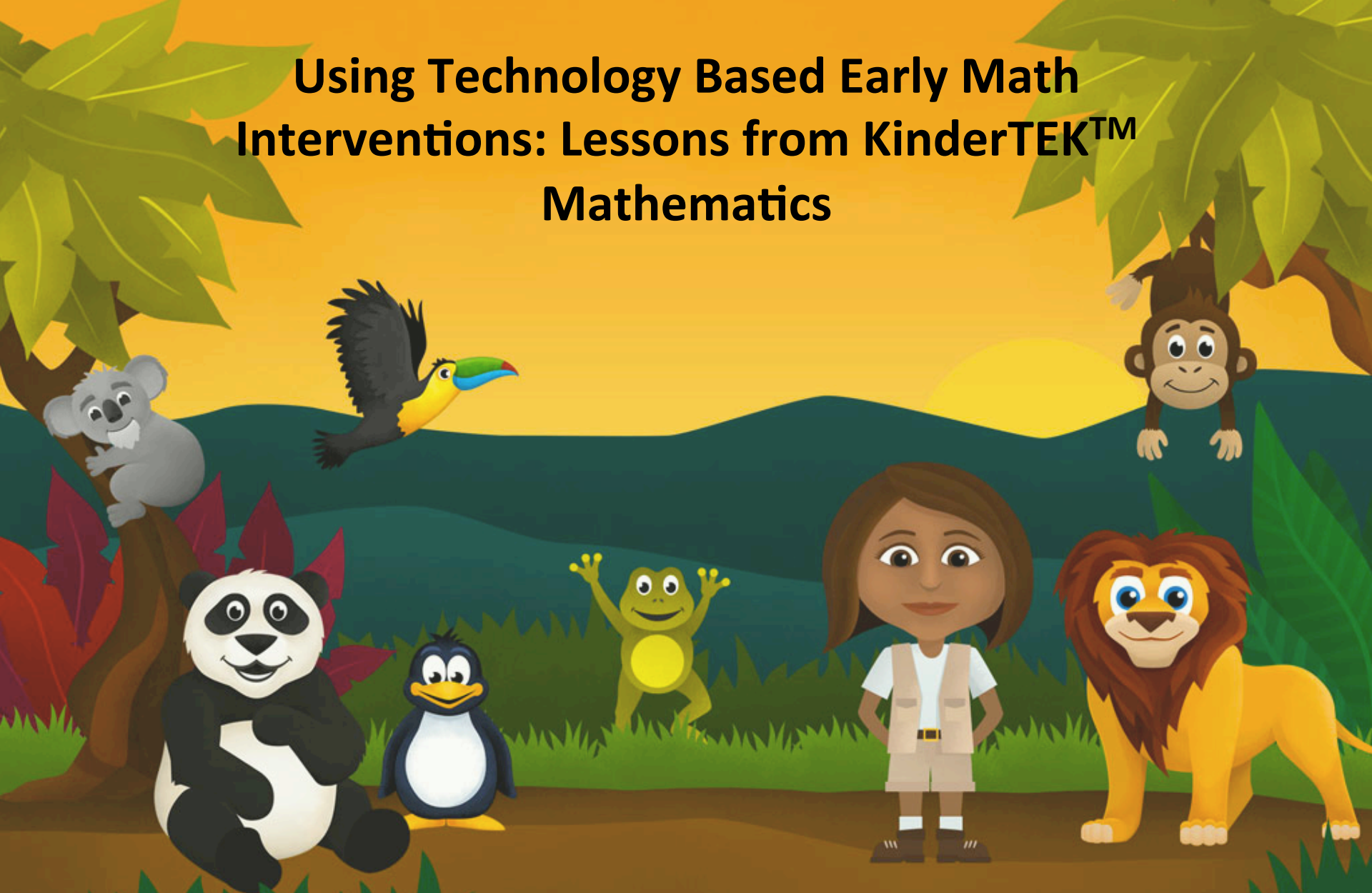


Using Technology Based Early Math Interventions: Lessons from KinderTEK™ Mathematics



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Center on Teaching and Learning, Univ. of Oregon
2015 COSA Statewide Starting Strong Conference (Eugene, OR)

Today

- **Early elementary mathematics**
 - (status, need, instruction)
- **Potential of technology**
- **Challenges of technology**
 - (dev't and delivery)
- **KinderTEK 1.0** (research prototype complete; funded by IES)
 - Overview
 - Pilot study results
 - Implementation study
- **KinderTEK 2.0** (public app in development; funded by OSEP)
 - Overview of planned intervention system
 - Iterative development and evaluation plan
- **Questions**
- **Demo & Scavenger Hunt** (current prototype)

Early Elementary Mathematics

- Providing students with solid foundational mathematics instruction in kindergarten is critical for future mathematics achievement (Duncan et al., 2007; Ma, 1999; Morgan Farkas, & Wu, 2009)
- Without early intervention, the mathematics achievement gap persists and often grows as students face increasingly complex mathematical tasks (Geary, 1993; Jordan, Kaplan, & Hanich, 2002; Lyon et al., 2001)

Early Elementary Mathematics

- To foster a strong start in mathematics, early elementary intervention curricula must provide focused instruction and targeted practice with whole number concepts that will improve numeracy and number sense (Wu, 2001; Gersten et al., 2009; Kilpatrick et al., 2001; Milgram, 2007)

Educational Technology Potential

- Decrease personnel demands
- Provide individualized instruction
- Provide consistent content in an engaging manner
- Provide extensive independent practice opportunities and timely academic feedback
- Generate and process performance data

**Tech gives
the quietest
student a voice.**

- JERRY BLUMENGARTEN



Educational Technology Challenges

- There is a relative lack of conclusive evidence as to the efficacy of educational technology programs (Cheung & Slavin , 2013)
 - Mismatch between tech development & ed research
 - Small effect sizes *
- Unique challenges around curriculum development (Strand Cary, Shanley, & Clarke, in press)

Ed Tech Research & Development

- Challenges Include:
 - Time
 - Navigating development of content and technology simultaneously
 - Appropriate study designs
 - “Fit” with the context
 - Participation and implementation

Promise of Ed Tech

“Technology can enable better learning when
(a) it provides a unique, new capability that supports human learning processes and
(b) interventions are designed to embed that capability within an integrated system that provides the supports students and their teachers need to enact the learning within the curriculum”

(OES, Learning Technology Effectiveness, 2014)

**Technology can become
the “wings” that will allow
the educational world to
fly farther and faster than
ever before—if we will
allow it.**

-Jenny Arledge



Promise of Ed Tech

Requires that *curriculum developers*, *curriculum evaluators*, *technology developers*, *educational researchers*, and *schools* engage in a comprehensive and systematic approach to development.

KinderTEK Development Context

- Kindergarten mathematics concepts are pivotal foundations for future achievement (Duncan, et al., 2007; Morgan et al., 2009).
- Whole number mathematics interventions are needed (Clarke, et al., 2011; Jordan, Glutting, Dyson, Hassinger-Das, & Irwin, 2012) for use in Rtl contexts (Fuchs, Fuchs, & Compton, 2012; Fuchs, Fuchs, & Hollenbeck, 2007).
- Technology-based interventions show promise, but variable outcomes (Kebritchi et al., 2010; Slavin & Lake, 2008; Collins & Halverson, 2009; Polson & Morgan, 2010; Young, et al., 2012).

Intervention Development Priorities

- Adhere to research-based curriculum development procedures (Clement, 2007).
- Utilize guidelines for effective instructional design (Baker, et al., 2002; Gersten et al., 2009; Rosenshine, 2012).
- Attend to findings related to the effects of educational technology on academic performance to guide decision-making (Hattie, 2009; Kulik & Kulik, 1991; Roblyer, Castine, & King, 1988).

KTEK's iterative development and evaluation



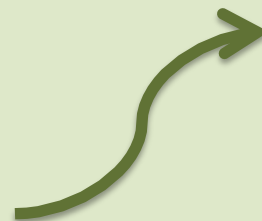
Development (Ongoing and iterative)

Formative evaluation

(critique, review, user-tests, focus groups, brief learning trials)



Feasibility and pilot testing



Larger scale pilot testing



Efficacy tests
(pending funding)

About KinderTEK

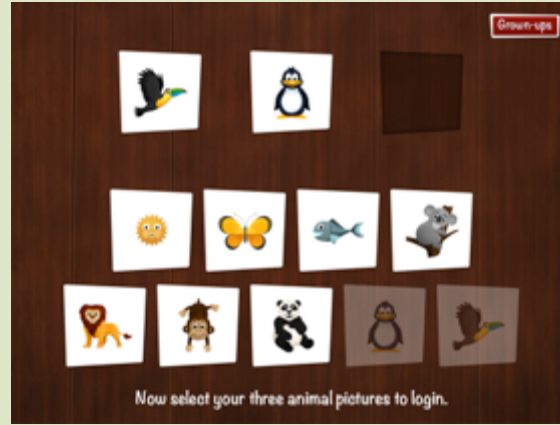
- System of iPad applications:
 - Student app: Used individually by students
 - Teacher app: Allows teachers to monitor student use in real-time
- Targets whole-number content outlined in the Common Core State Standards (CCSSO, 2010).
- Provides explicit instruction appropriate to each student's learning needs.
- Incorporates key instructional design principles found to be especially effective for struggling students (Gersten et al., 2009) and key educational technology design principles (Mayer & Moreno, 2003).

KinderTEK (1.0)

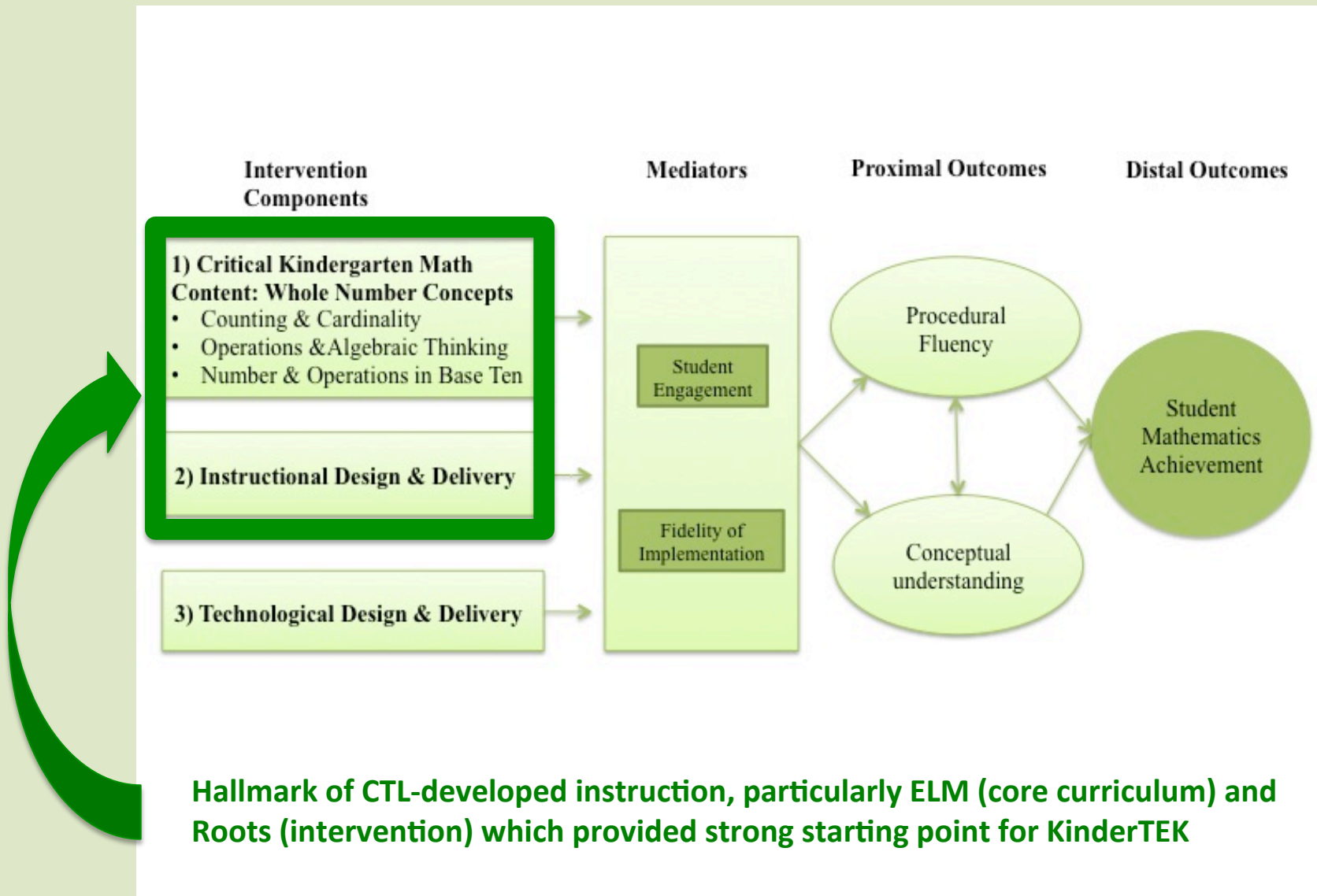
System of iPad-based math instruction to support struggling kindergarten students and their classroom teachers



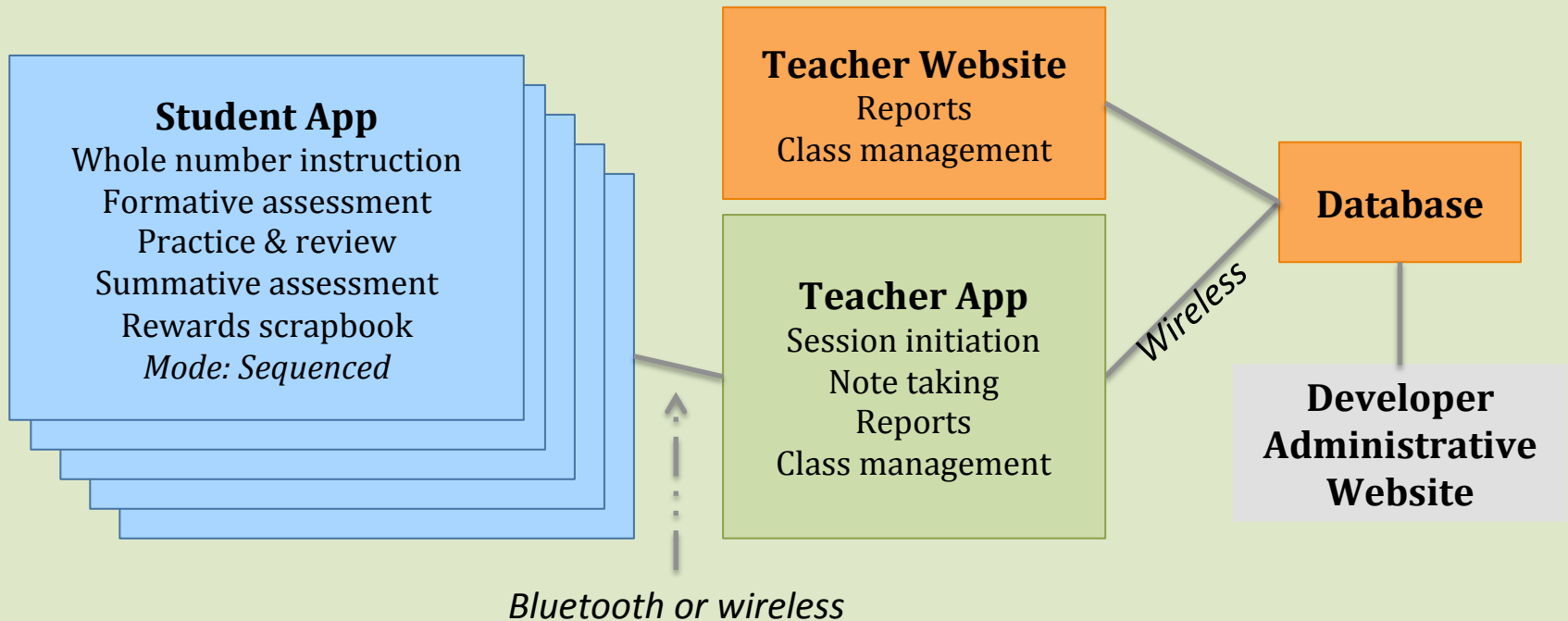
KTEK Student Experience



Conceptual Framework 1.0



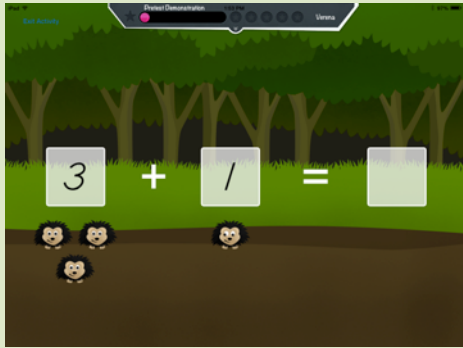
KTEK 1.0 Intervention System (IES Development Grant)

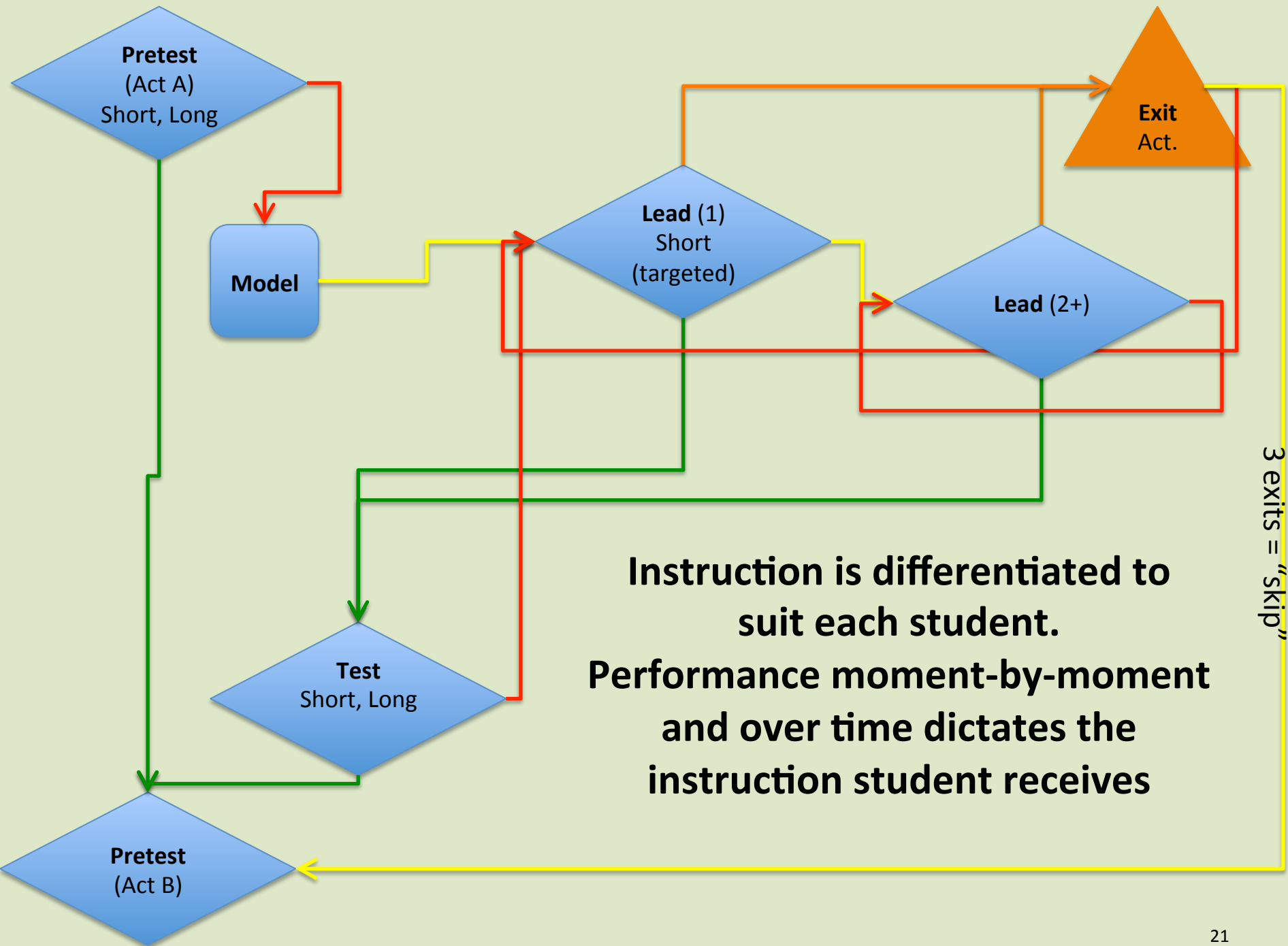


Student App

Carefully designed instructional sequence to support struggling students

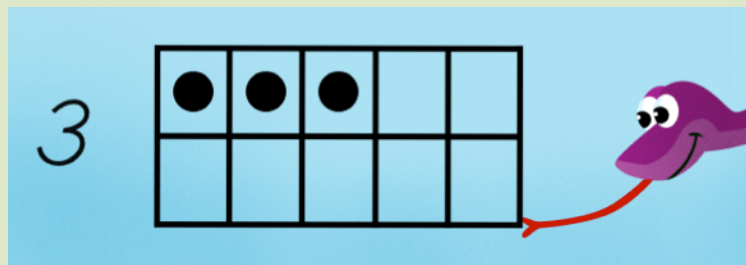
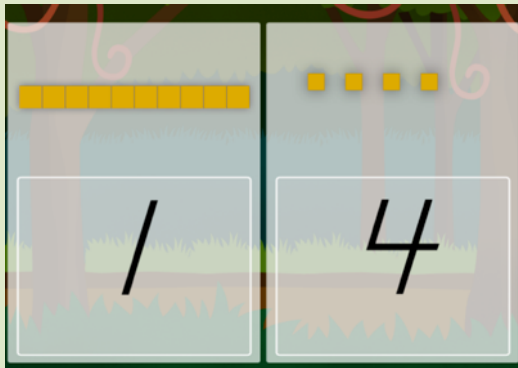
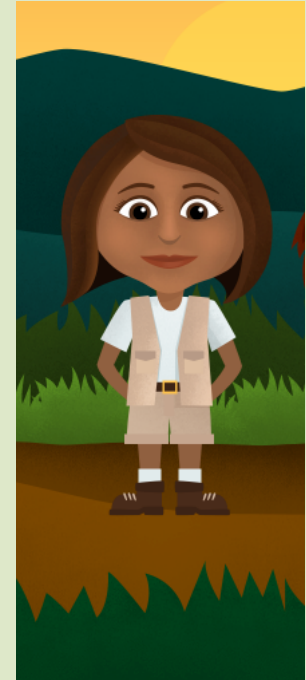
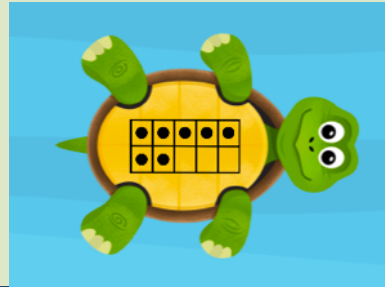

- Scaffolds Instruction using Model, Lead, Test
 - **Model:** Activities begin with demonstrations by the Guide
 - **Lead:** Guide invites students to participate providing prompts and supportive feedback
 - **Test:** Student completes the activity independently with minimal feedback; test length varies, depending on performance
- Criteria is utilized so students progress based on demonstrated proficiency





Math models, varied examples, and many practice opportunities

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Motivational strategies

- Verbal praise from Guide & affirmation action on screen
- Earn stickers, pictures, and badges for printable scrapbook pages
- Progress bar
- iPads!



iPad 9:56 AM 31%

AM

Alyssa [redacted]
Not in Session

EA_AM [redacted]
Not in Session

Emily [redacted]
Not in Session

Maia [redacted]
Not in Session

Makena [redacted]
Not in Session

Rylee [redacted]
Not in Session

TeacherAM [redacted]
Not in Session

ADD A STUDENT

iPad 9:56 AM 31%

Emily [redacted]

KTEK PROGRESS [Progress Bar]

LAST ACTIVITY IDMissingNumber CURRENT ACTIVITY MASTERED 17 of 47 STUDENT PASSCODE The passcode is: [fish] [monkey] [mouse]

CURRICULUM PROGRESS	TEACHER NOTES
Count By Tens	1-100 CC1 IN PROGRESS
Write Base-Ten Blocks Prompted	10-20 CC3 NOT STARTED
Write Base-Ten Blocks	10-20 CC3 NOT STARTED

Counting objects South America Emily's Progress: [Progress Bar]

Build Model Hundred Chart	1-100 CC4c NOT STARTED
Build Model on the Number Line	1-10 CC4c REVIEWING
Build Model on the Number Line	10-20 CC4c NOT STARTED
Count Objects Choice	1-10 CC5 REVIEWING
Count Objects Select	
Count Objects Select	
Number to Base-Ten Blocks	
Match Ten Frame To Number	
Build Model Ten Frame	

Teacher App

iPad AM

Daria Holly
Not in Session

Elsie Berry
Not in Session

Joi McCartney
Not in Session

Maybelle Harrison
Not in Session

Truman Starkey
Not in Session

iPad 10:15 AM 78%

Truman Starkey

KTEK PROGRESS [Progress Bar]

LAST ACTIVITY MatchTenFrameToNumber CURRENT ACTIVITY MASTERED 4 of 47 STUDENT PASSCODE The passcode is: [lion] [fish]

CURRICULUM PROGRESS	TEACHER NOTES
Teacher notes NEW NOTE	
APR 16	Truman was absent today.
FEB 20	Hi Melinda! I successfully installed the new builds! Have a great day!

April 16, 2014

iPad 10:15 AM 78%

AM

Daria Holly
Not in Session

Elsie Berry
Not in Session


Joi McCartney
Not in Session


Maybelle Harrison
Not in Session

Truman Starkey
Not in Session

 **ADD A STUDENT**

Truman Starkey

KTEK PROGRESS 

LAST ACTIVITY MatchTenFrameToNumber **CURRENT ACTIVITY** **MASTERED** 4 of 47 **STUDENT PASSCODE** The passcode is: 

CURRICULUM PROGRESS **TEACHER NOTES**

Teacher notes

APR 16 Truman was absent today.

FEB 20 Hi Melinda! I successfully installed the new builds! Have a great day!


[NEW NOTE](#)

Cancel Makena's KinderTEK Scrapbook 2014-04-16 Send

To:

EA_AM Su
Not in Session

Subject: Makena's KinderTEK Scrapbook 2014-04-16



 Makena S...14-04-16.pdf



Sent from my iPad

Printer Options

Printer Select Printer >

Range All Pages >

1 Copy  

Print  **Print** 

1-10 OA2 NOT STARTED

Pilot Study*

- 11 kindergarten classes
- EA monitoring, not helping
- Goal: 3 days per week, 15 minutes per day, 3 months
- Within each class, 10 “most at-risk” students randomly assigned to condition
 - Intervention using *KinderTEK* ($n = 45$)
 - Control using *Learn with Homer* ($n = 49$)
 - *NOTE: Taking the lowest third of class resulted in a wider variety of users than perhaps typically for “interventions”*



Results – Student Assessments

- Two “substantively important” (Hedge’s $g \geq .25$) effect sizes **in favor of KinderTEK group**

Magnitude Comparison = .36

Number Line = .36

- Meaningful effect sizes for six variables **in favor of group who mastered at least 75% activities encountered**

Magnitude Comparison = .43

Number Line = .29

Missing Number = .26

Oral Counting = .29

Number Sense Brief = .26

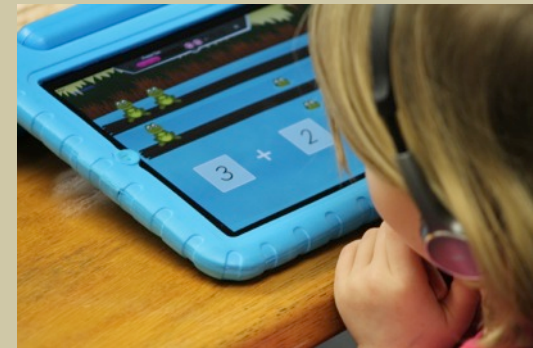
TEMA = .27

Takeaway:

KinderTEK shows “evidence of promise” and successfully engaging in KinderTEK is particularly linked to improved outcomes.

Results - Student engagement

- **Student “interest/engagement” was high**
 - Research teams’ formal observations
 - Classroom assistants’ ratings
- On likability scale of 1 (☺) to 5 (☹), **students rated KTEK as 1.66 (SD = 1.92)**
- **68.5% of students said they would play KTEK at home if it were available**



Results – Glimpse of teacher perceptions

(n=13)	Strongly pos	Mod. pos	Neutral	Mod. neg	Strongly neg
Look & feel	61.5%	30.8%	7.7%	.	.
Intuitiveness	38.5%	38.5%	15.4%	7.7%	.
Individualized	38.5%	30.8%	23.1%	7.7%	.
Acad. Feedback	23.1%	23.1%	53.8%	.	.
Pace within activities	8.3%	41.7%	23.0%	25.0%	.
Pace across activities	8.3%	58.3%	16.7%	16.7%	.
MLT sequence	15.4%	46.2%	23.1%	15.4%	.

Instructors & Technology

IMPLEMENTATION ISSUES

Technology is just a tool. In terms of getting the kids working together and motivating them, the teacher is the most important.

- Bill Gates

Participants

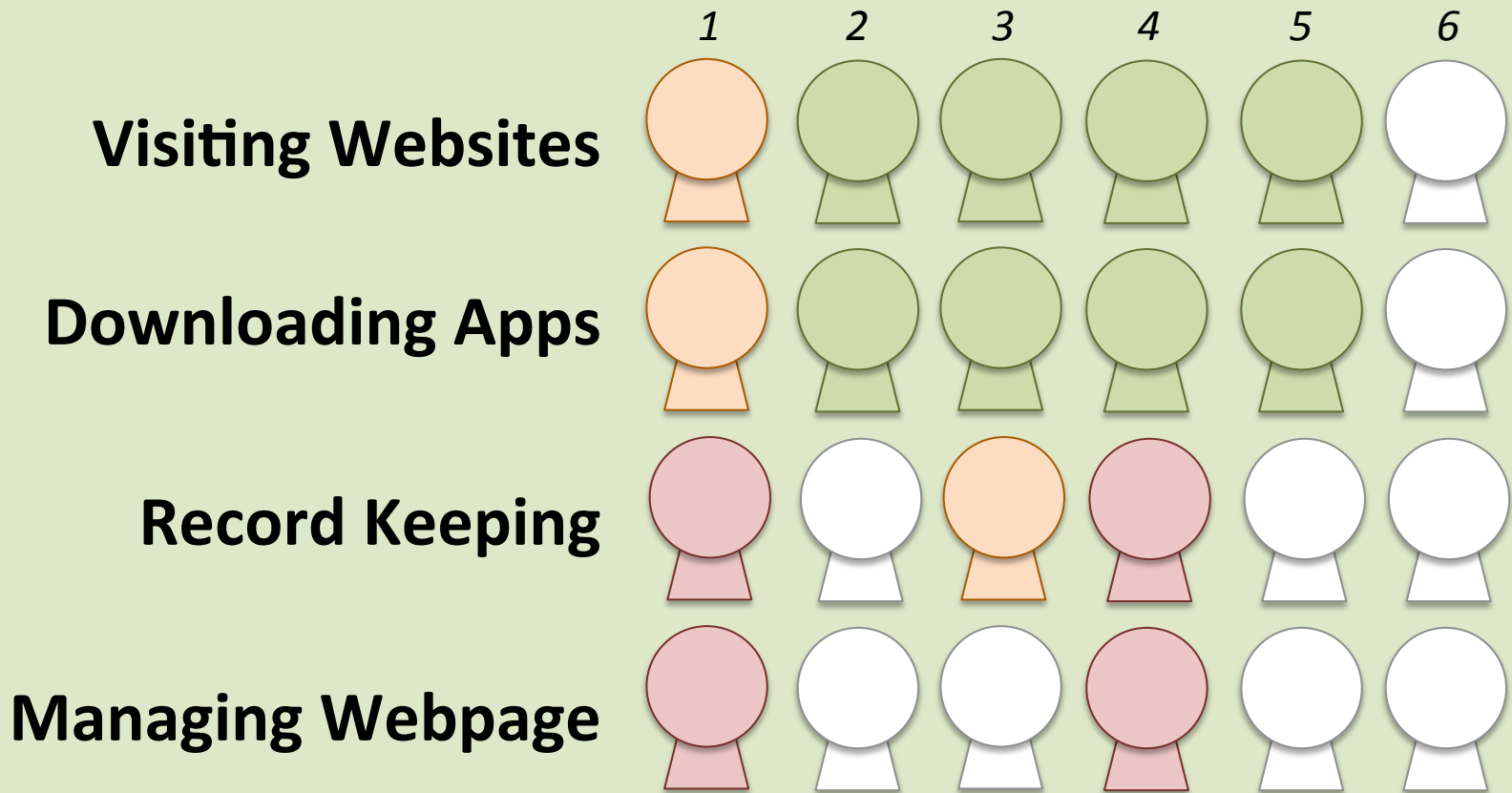
- Study 1: Six teachers (one male)*
- Study 2: Seven teachers (all female) + Six educational assistants (one male)



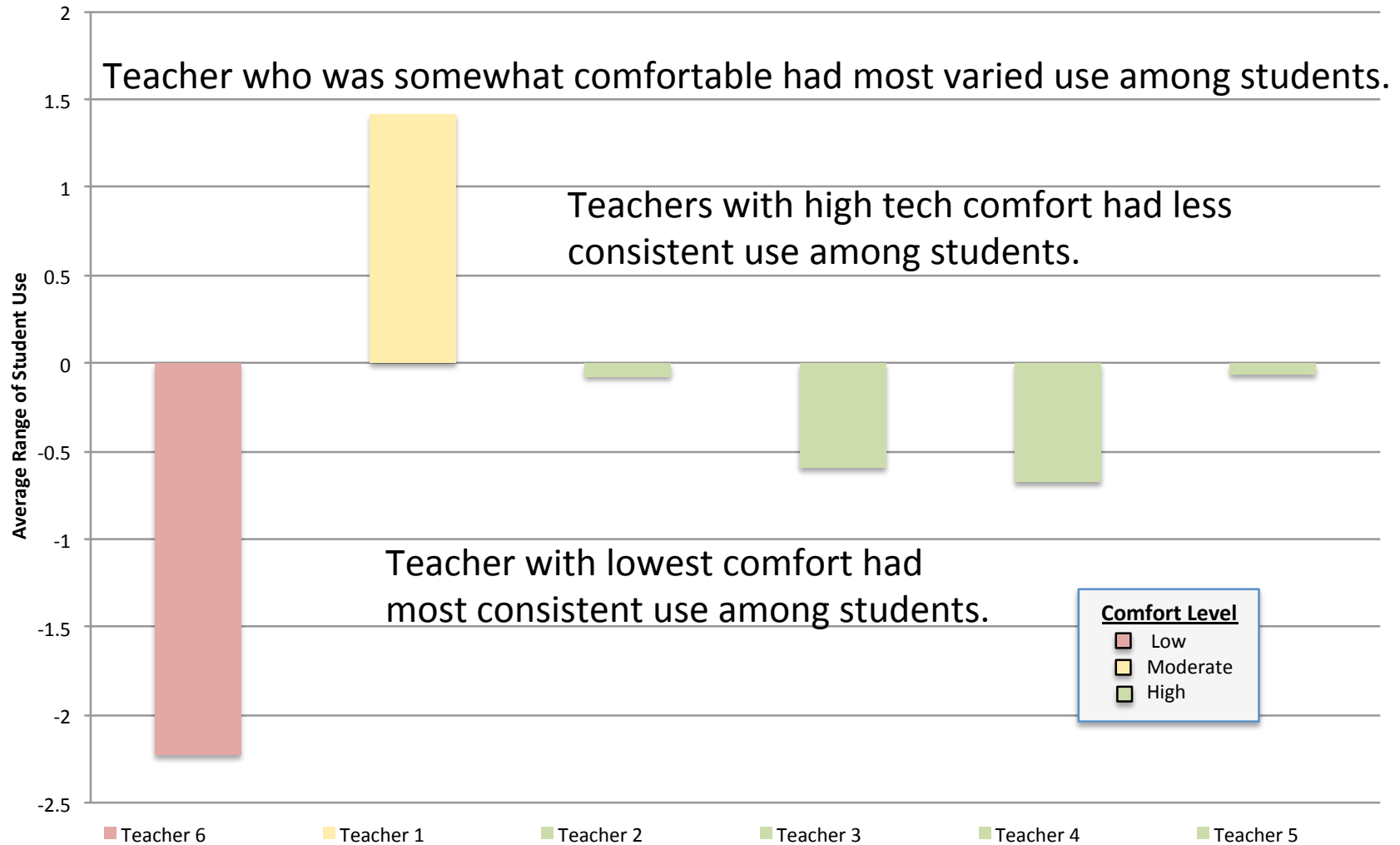
Intervention Implementation

- For target students:
 - 15 minutes per day
 - 3 days per week + regular mathematics instruction.
- Progress through the curriculum was constrained; all students completed the same subset of activities in the same order.
- Time spent on each activity varied based on student accuracy and mastery of the learning objectives.

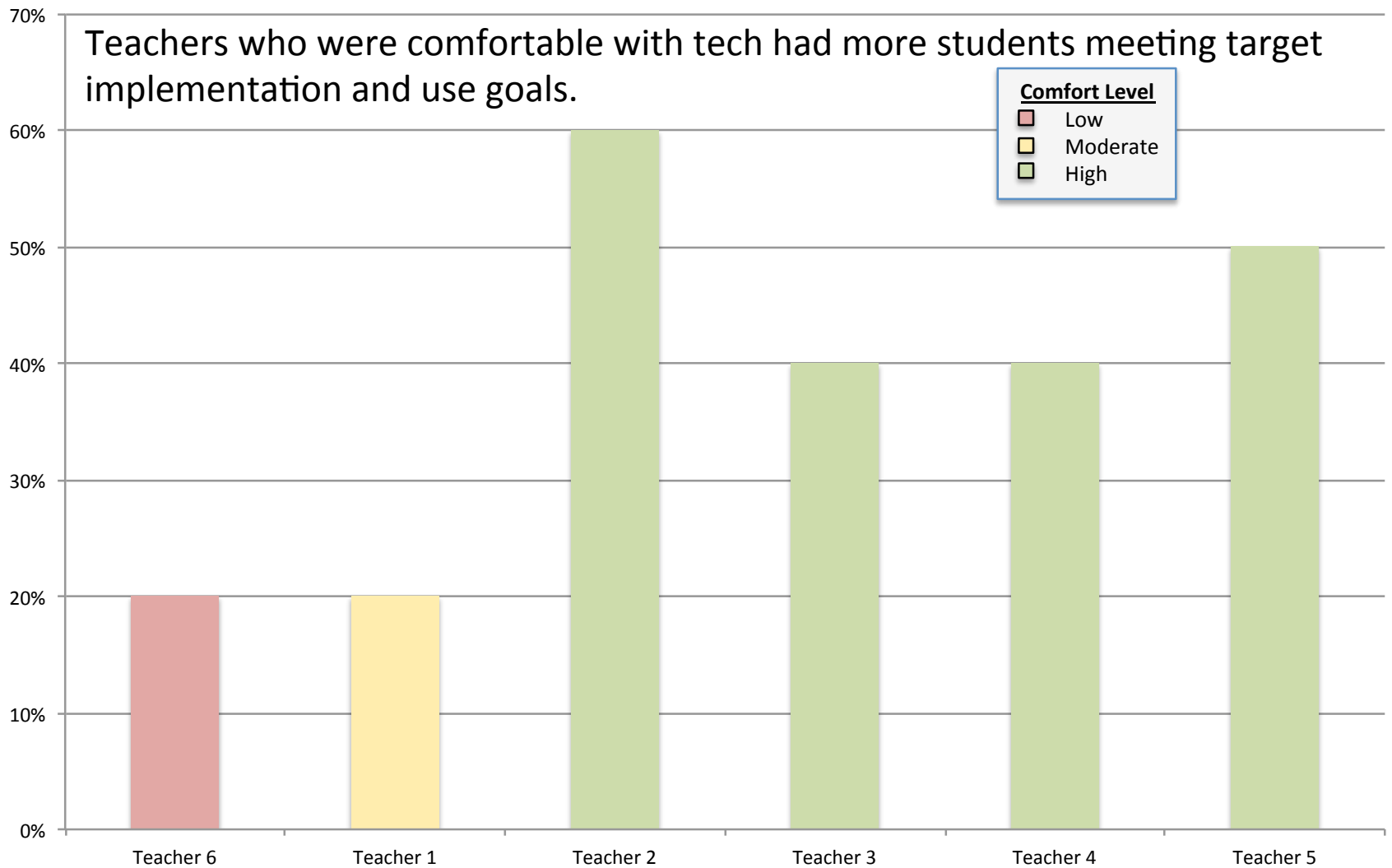
Study 1: Comfort with iPads

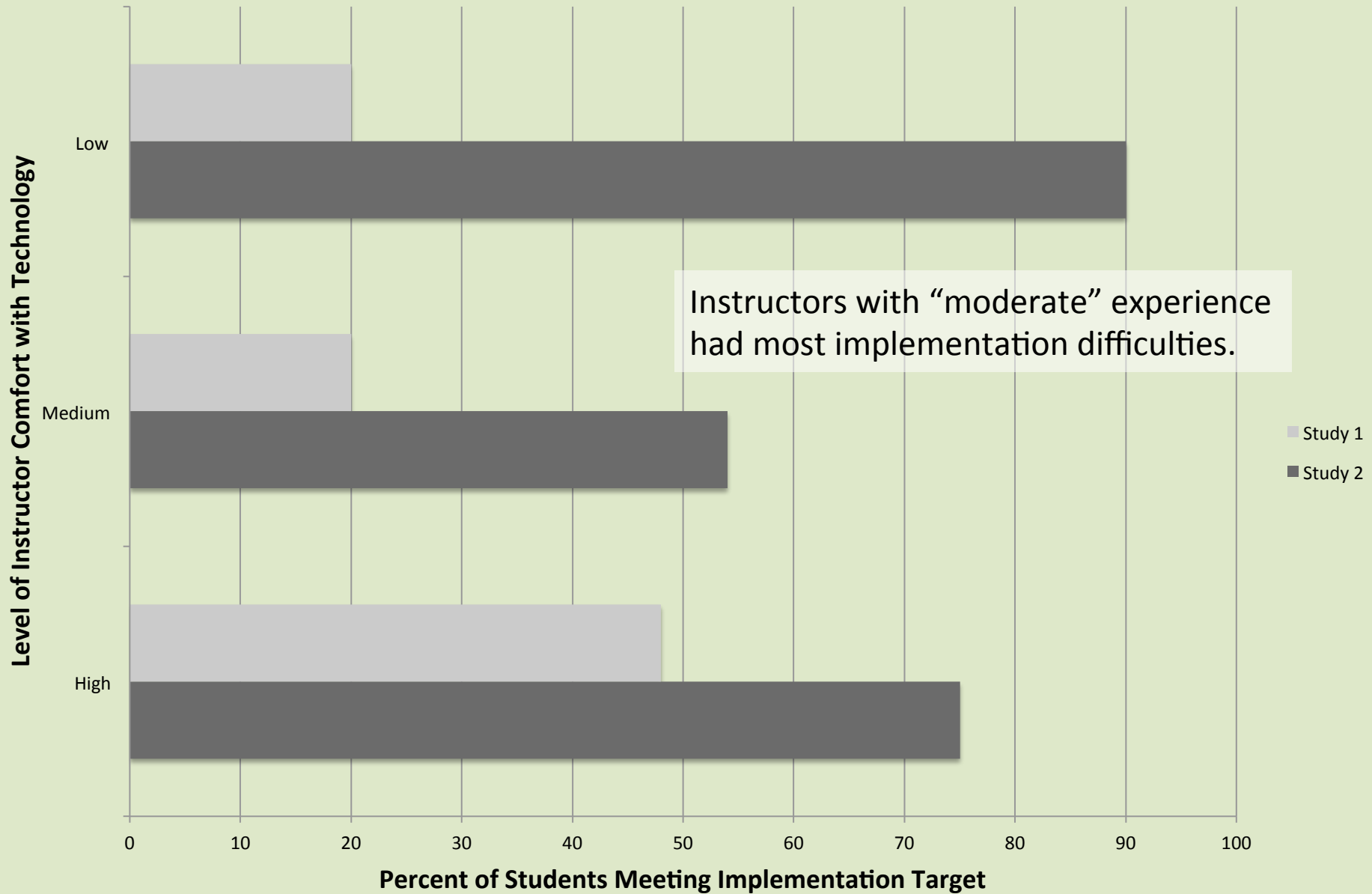


Range of Student Use by Teacher Comfort with Technology



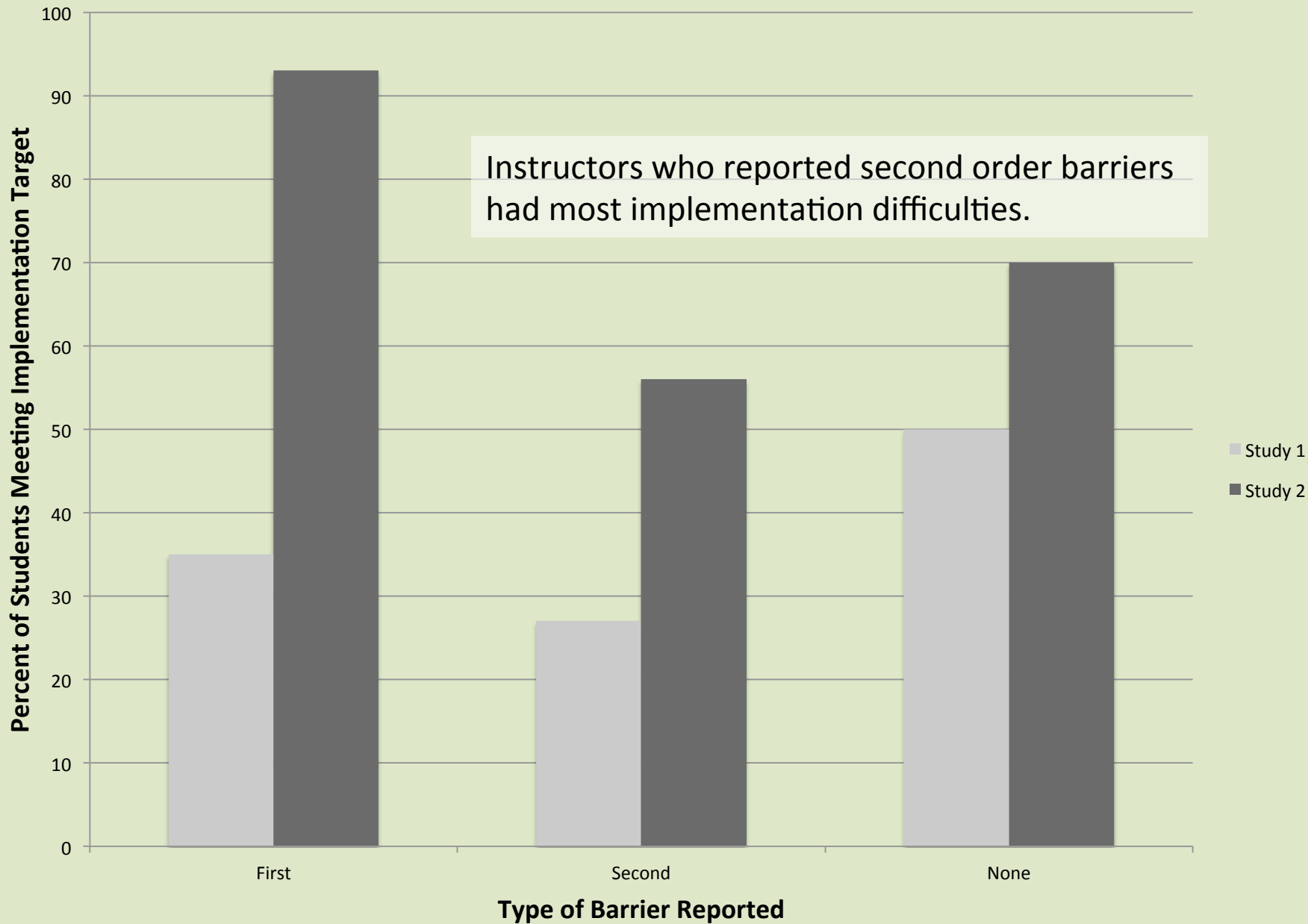
Percentage of Students Meeting Target Duration by Teacher Comfort





Barriers to Tech Implementation

First Order	Second Order
I have inadequate time to learn how to use technology.	I am not comfortable with technology.
There is inadequate training or help offered.	I am worried I will break the technology.
Technology can be unreliable.	I am worried that I will not be able to help the students troubleshoot.
Class periods are too short.	I am worried about expensive equipment in the classroom.
Hardware, software, and/or apps don't work properly.	I find it difficult to find useful software or apps.



KinderTEK 1.0 Findings

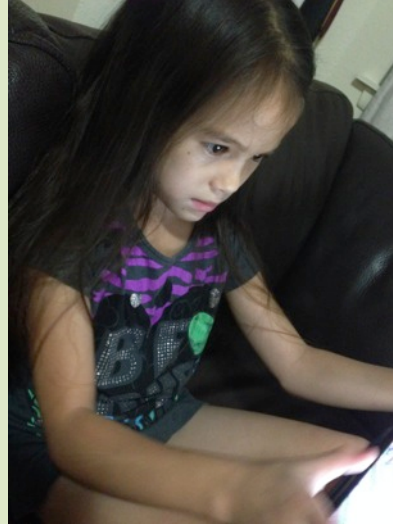
- KinderTEK shows promise for use in authentic settings.
- Teacher tech comfort and implementation relationship varies.
 - Teachers with high & moderate levels of informal comfort with tech may need additional supports to implement as specified.
 - Tech often seen as a “supplemental support” rather than primary tool- need to formalize use.
 - Internal tech barriers may be most influential on intervention implementation.

Conclusions

- At-risk students' intervention experiences vary greatly (esp. pacing).
- Teachers may require various degrees of technical support.
- Well constructed classroom routines and specially designed intervention spaces aid in implementation.
- Students are intuitive users; instructional apps need to balance pace, content, and rewards.

KinderTEK (2.0)

Flexible and customizable system of foundational math instruction (critical math concepts) to suit a wide variety of student, parent, teacher, and school needs and learning contexts.



KTEK 1.0 lessons learned

- **Adults require various degrees of technical and moral support**
- **Well-constructed instructional plans, classroom routines, & intervention contexts aid in implementation**
- **Must balance pace, content, and rewards and maximize engagement (*for each student?!*)**
- **At-risk students' intervention experiences vary greatly for a multitude of reasons**

KTEK 2.0 Objectives

Implementation Supports
(Before, during, and after use)

Delivery flexibility & Product Dissemination

IIDOs
(rewards, pacing, self-monitoring)

Data access and integration

Individualized Instructional Delivery Options (IIDO)

1a) Rewards

- 1a-1) Reinforcement schedule
- 1a-2) Interspersed reward activities and instruction activities
- 1a-3) Student-specific reward visualizations
- 1a-4) Personalized reward themes and features

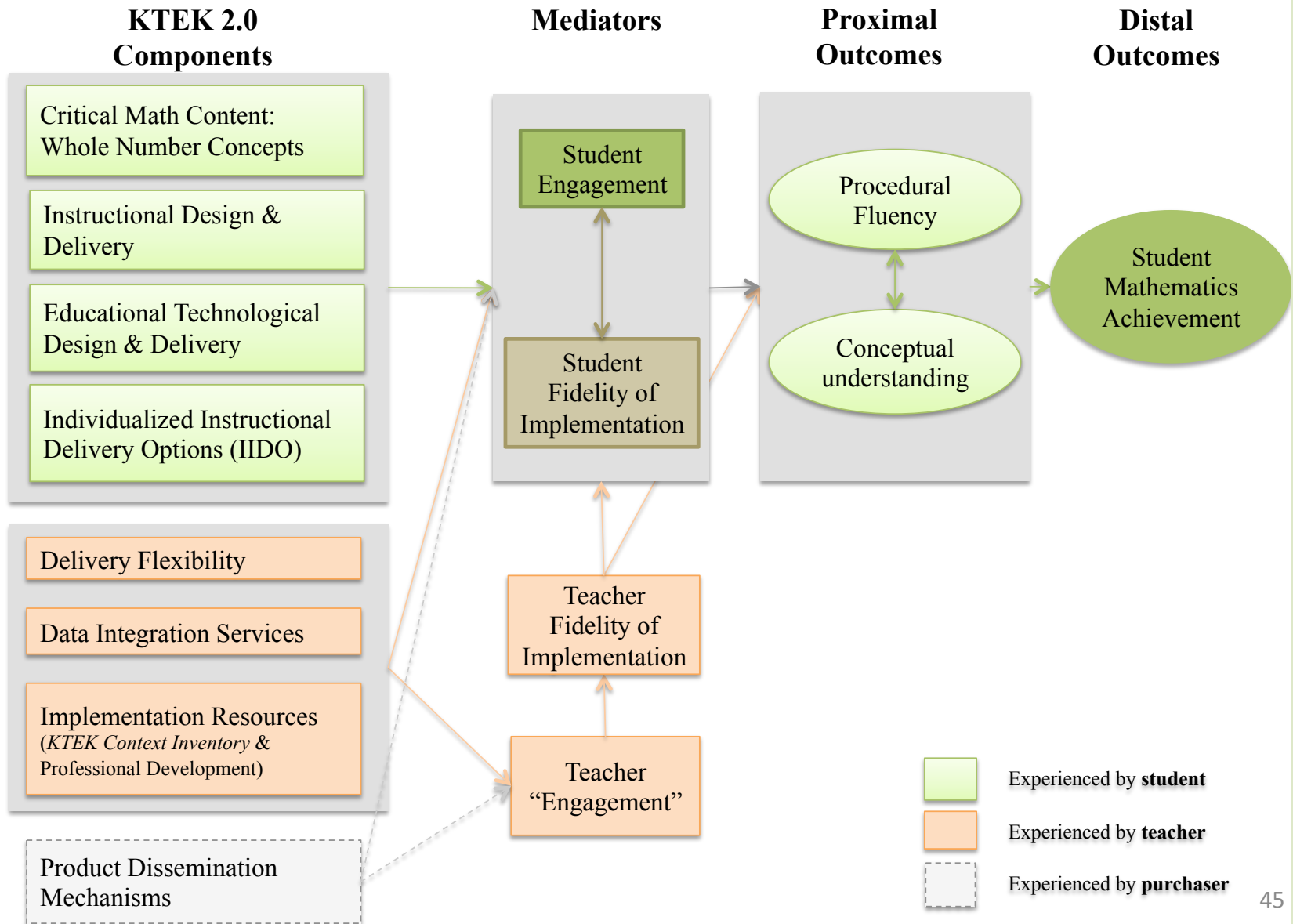
1b) Pacing

- 1b-1) Mastery criterion
- 1b-2) Duration of learning activities and KinderTEK session
- 1b-3) Activate on-demand verbal instructions
- 1b-4) Choice of instructional mode (sequenced, exploration, directed)

1c) Self-Monitoring

- 1c-1) Progress monitoring functions and reports
- 1c-2) Progress monitoring frequency and aims.
- 1c-3) View instructional progress alongside reward acquisition, persistence, duration of use, and content mastery

Conceptual Framework 2.0



KTEK 2.0 (OSEP Stepping Up Grant)

Flexible Student App

Whole number instruction
Formative assessment
Practice & review
Summative assessment
Multiple reward options
IIDOs (rewards, pacing, self-monitoring)
Modes: *Sequenced, Exploration, Directed*
(all available with or without wireless)

with **Teacher area**
Reports
Note taking
Class management (*even without wireless*)
Customization

Web-Based Data Reporting and Class Management

Detailed, exportable reports in multiple formats
Note taking
Class management
Customization
(Accessible through any web-enabled device, including iPads in the classroom)

Web-Based CTL DIBELS Data System

Integrated reports
Class set-up

Wireless

Wireless

Basic

Subscription-based services

Implementation Resources

(in-app and on website)

- KTEK Context Inventory
- Professional Development Materials

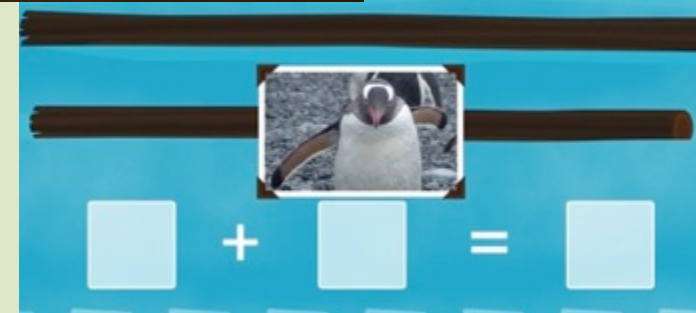
Iterative development and evaluation

- Years 1-3
 - **Advisory panel discussions and surveys**
 - **User-tests**
 - **Focus groups**
 - **Brief learning trials** (1-3 weeks in classrooms; variable number of students and teachers)
- Year 4: **Pilot study** examining IIDOs
- Year 5: **Extended learning trial** examining multiple implementation models

KTEK 2.0

Motivational strategies

- Verbal praise
- Affirmation actions
- Earn stickers, pictures, and badges for virtual scrapbook
- Access to new animals and learning activities
- Games (e.g., “memory”)
- Progress bar, progress path, countdown timers
- iPads!



Implementation Resources

(i.e., In-app references, PDFs, videos, webinars...)

4a) *“KinderTEK Context Inventory”*

4b) *“Overview of KinderTEK”*

4c) Creating a positive KinderTEK culture among school staff

4d) Product-Specific Set-up, Implementation and Troubleshooting

4e) *Customizing students’ KinderTEK experiences*

4f) Guides to using KTEK data

www.kindertek.org

Context Inventory - Brief

This inventory is a self-assessment of individual and school intervention needs, readiness, and technology capabilities. We ask all participating educators to complete it so as to facilitate a shared conceptualization of the implementation context, help set realistic implementation expectations by educators and staff, and identify needed areas of training and support.

There is time in the kindergarten class schedule to offer students math enrichment

	Not at all	Monthly	Weekly	A few times per week	per day	
taught by the classroom teachers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
taught by interventionists or educational assistants in the classroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
taught by SPED teachers or other staff in a separate classroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
in math centers or equivalent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Math Context

My Schools offers math interventions for Kindergarten YES NO

How many kindergarten students is your school planning to serve through KTEK?
 How many of these students do you estimate are performing below grade level?
 How many students do you anticipate working simultaneously (e.g., in a group)? ____
 How many groups do you anticipate personally monitoring/leading? ____

User Info

Dependable WiFi (wireless Internet access) is available in...

	Not at all	Occasionally	Regularly	Reliably / Most of the time	Not applicable
kindergarten classrooms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
resource rooms	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
common areas accessed by students	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
staff-only areas (office, lounge, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
my classroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
areas I could imagine KTEK students working	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
staff-only areas to which I have access	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
my home	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Tech Context

iPads are or will be accessible to my students (who would use KTEK)...

	Not at all	Occasionally	Regularly	Reliably / Most of the time	Not applicable
in their kindergarten classroom (class property)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
through iPad "carts" or equivalent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
in resource rooms or equivalent	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
in the library	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
by special arrangement only	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Device Info

	Not at all	Occasionally	Regularly	Reliably / Most of the time
Technology support is in the building	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technology support is available through the district	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please tell us more about yourself

	Not at all	Occasionally	Regularly	Often / Most of the time
I have access to information about available educational technologies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have access to educational technology training	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am comfortable seeking educational technology support	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My school/district supports me in seeking training opportunities in the area of educational technology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I meet with technology staff	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Instructor Comfort

	low			Excellent
My skill with computers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My skill with iPads	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My skill with online or technology-based communication and collaboration software	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My skill with reporting software or reporting features of instructional software	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My small group behavior management skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My understanding of the KTEK intervention system	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My understanding of the KTEK student app (e.g., features, lessons, demonstration-lead-test structure of lessons, student reward options)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My understanding of the KTEK teacher app (e.g., class management, student settings, student reports, student notes)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My understanding of the KTEK teacher website	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

KinderTEK is a fun and engaging iPad app that helps students learn important early math skills. Grounded in research and evaluated in real classrooms, the app is aligned with Common Core State Standards and will provide a strong foundation in early mathematics. [Learn more about KTEK.](#)

Get KTEK!



"It was a pleasure to explore KTEK and have iPads for student and teacher use. It made a great difference in instruction and management this year and I hope to see you next year as well."

"It's if you Kinderg
"It's learn Kinderg

KTEK **teaches** critical math concepts. It is based on a successful instructional model that introduces new concepts through modeling, engages students with guided practice, and seamlessly tests students on their knowledge while building fluency. Through it all, kids are having fun learning math and earning rewards.

Is KTEK right for you?

KinderTEK can help you provide individualized math instruction anytime, anywhere-- with or without Internet connectivity. Your specific students, resources, and learning goals will affect how you use KTEK.

Consider the questions on the [KTEK Context Inventory](#) to learn about the KTEK options. You could use KTEK for all your students or just a few, in a classroom, resource room, or at home!

Which KTEK is right for you?

You will soon be able to choose between the **KTEK Basic** or **KTEK Pro** versions. Compare the two to select the best fit.

Feature	KTEK Basic	KTEK Pro
Limited to 1 teacher/parent and up to 30 student accounts	✓	
Unlimited teacher/student accounts		✓
New accounts added manually using the KinderTEK app's Dashboard	✓	✓
New accounts added through web-based reporting and student management system (upload excel		✓

KTEK is currently only available to research participants. Look for it on the Apple App Store in May, 2015!

[End User Agreement](#)

Get in Touch



[Contact Us](#)



[Become a participant](#)



[Sign up for updates](#)

Why KTEK?



Research & Development Curriculum Meet the Team

Home

KinderTEK (KTEK) is a research-based instructional program aligned with Common Core State Standards for early mathematics. It is based on robust instructional design principles.

Delivered through an iPad app, KTEK helps students develop, maintain, and become fluent in critical early math skills within a fun, engaging environment while giving teachers data and insight on student achievements and progress.

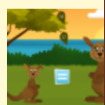
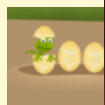
KTEK provides a strong **system of support** that includes embedded reporting tools, student management and an optional web-based reporting and student management system.

KTEK includes:

- Individualized instructional delivery options



Game S



Curriculum

Research & Development

Curriculum

Meet the Team

Home > Why KTEK?



KTEK engages students with vividly illustrated animals in their native environments all over the world, including lions in Africa, llamas in Peru, and baby penguins in Antarctica. The exploration theme, artwork, and rewards were tested with children age 2 to 8 to ensure KTEK delights the senses and makes education fun.



KTEK guides students through a carefully structured instructional sequence that teaches and reviews early math skills for individual students. Along the way, students learn and earn rewards in a Safari Scrapbook. Learners earn stickers, photos of animals they've encountered, and badges while they use KTEK. Some rewards are given for mastery of Common Core standards while others are given intermittently to keep students engaged in the learning experience. We are currently expanding reward types and themes. Adults will be able to customize reward themes and schedules for individual students



Common Core

KTEK development began after the release of the Common Core Standards, and the Common Core Standards are at the heart of KTEK curriculum. Activities and learning outcomes were developed to



Get in Touch



Contact Us



Become a participant

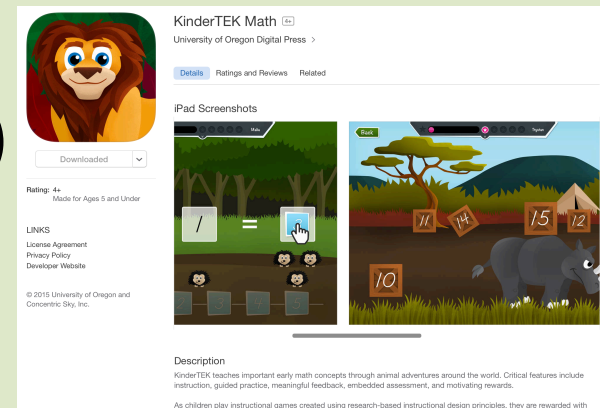


Sign up for updates

KTEK Availability

Visit www.KinderTEK.org for updates, announcements, and to express interest in participating.

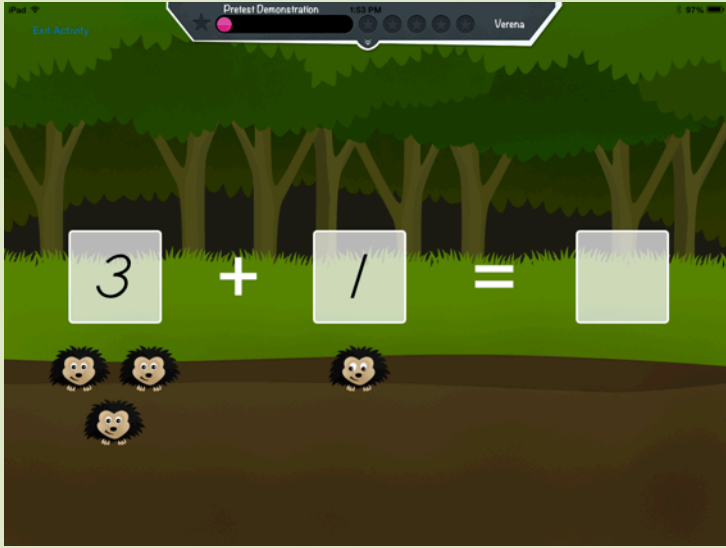
- **“Beta”/Research versions** provided to educators participating in our research studies
- **Excerpt/Limited version (“KinderTEK Math”)** is available for single classroom or home use on the Apple App Store and will be updated/expanded over time
- **Full version (“KinderTEK Classroom Math”)** will be released when it’s done!



Questions?

KinderTEK Demonstration

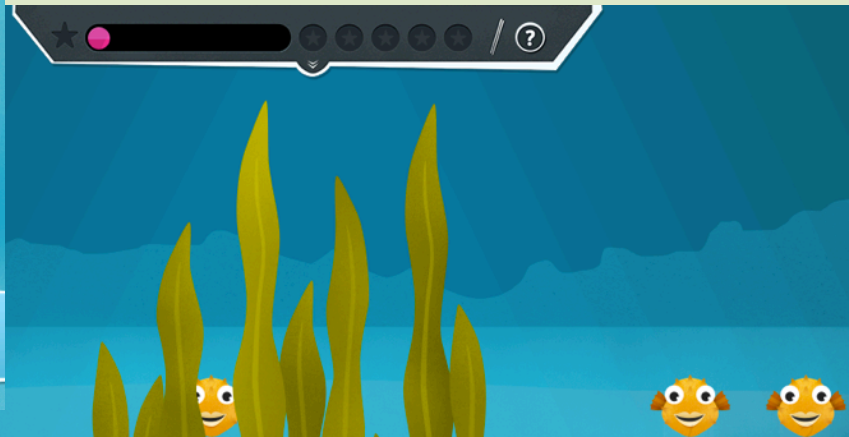
- User Features
- Teacher Controls
- Future Development
- Scavenger Hunt!





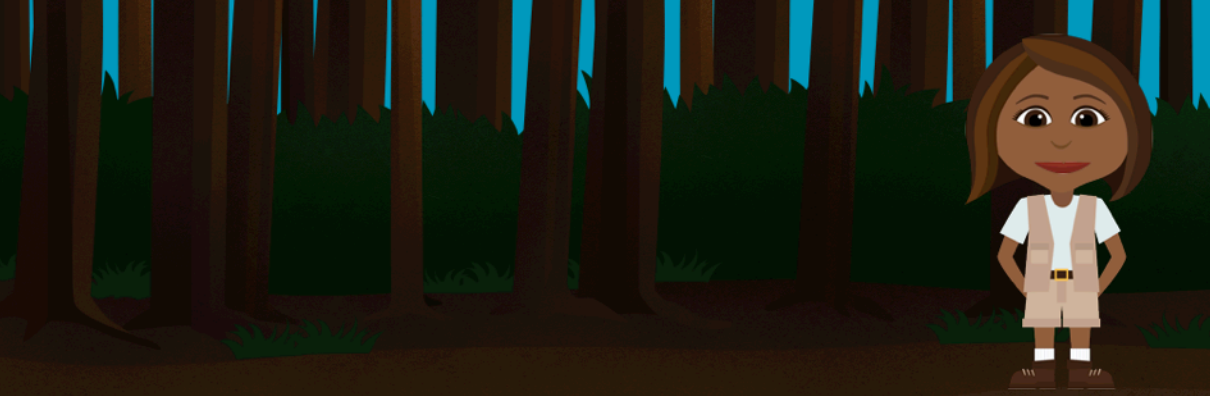
$$5 + 4 = \square$$

- 1 2 3 4 5 6 7 8

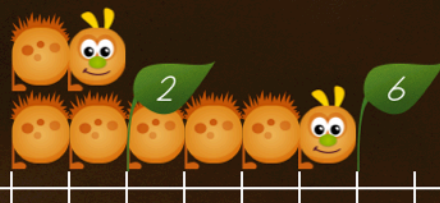
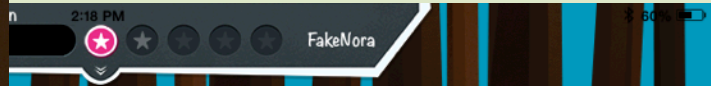


$$3 - 1 = 2$$

- 0 1 2 3 4 5 6



“Find the number that is more.”



Student work and mastery rewards

Back

Mari

$$4 + 1 = 5$$

0 1 2 3 4 5

Back

Mari

1 2 3 4 5 6

2 6 6

Mari

8 10 2 3



Map

Mari's Safari Scrapbook

Scrapbook

Sequence Numbers

Counting & Cardinality

Compare Numbers

Add/Subtract within 5

Map

Mari's Safari Scrapbook

Map

Mari's Safari Scrapbook

Rylee

Safari Scrapbook

Count Objects Choice - 1-10



Build Model on the Number Line - 1-10



Build Model Ten Frame - 1-10

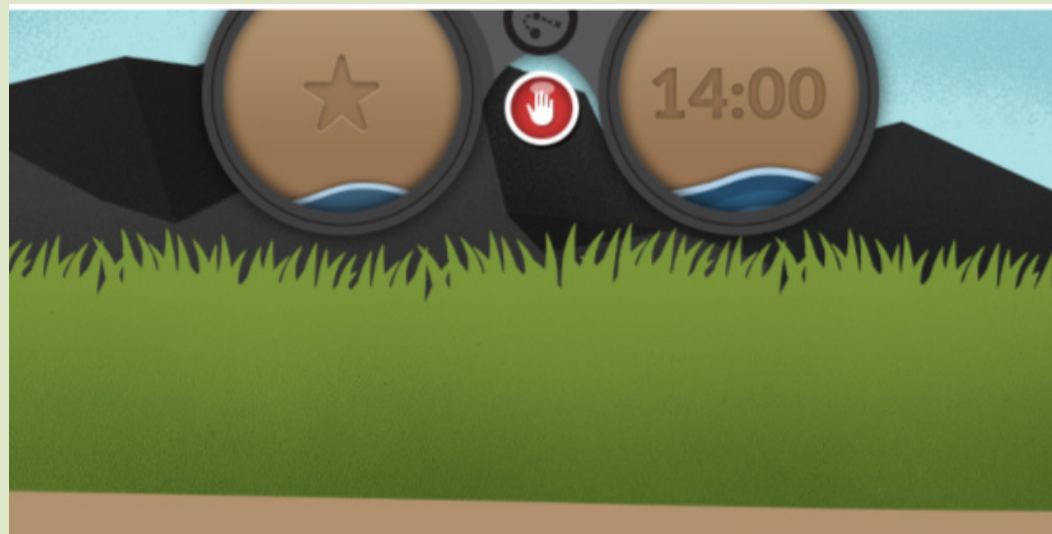
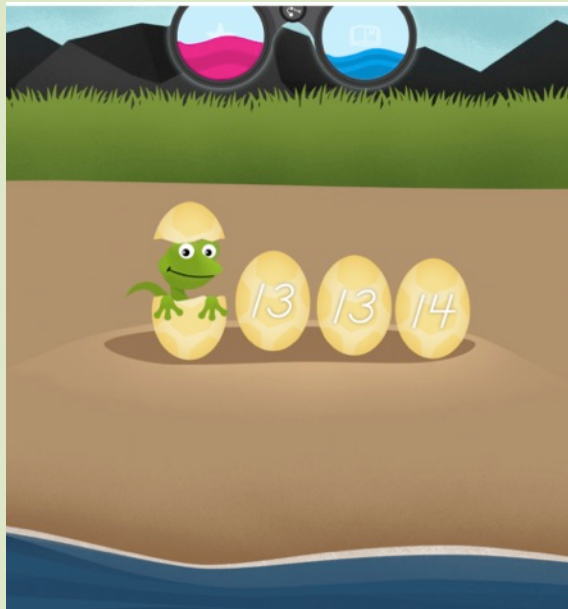


Count Objects Select - 1-10

More to come...

- In-app resources for teachers and links to resources outside of app
- More rewards and activities and ways for student to navigate those
- Settings and design elements for:
 - Self-monitoring (e.g., progress path; interval-based ratings of on-task behavior; timer manipulation; activation of progress visualizations...)
 - Alternative rewards and reward schedules/emphases
 - Specific durations and pacing

Progress indicators, timer, and “time to act” indicators

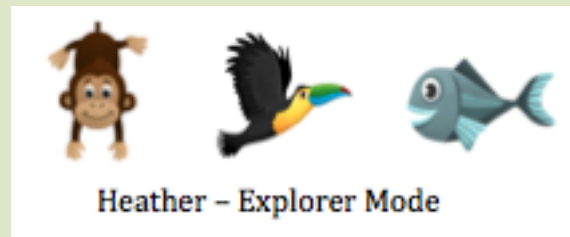


Progress path (on demand)



Scavenger Hunt

Use password card to explore KTEK as Heather.



Find as many items from the Scavenger Hunt as you can!



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Office of Special Education Programs
U.S. Department of Education

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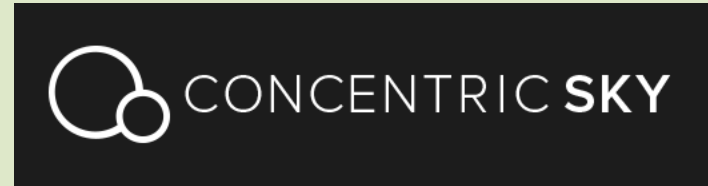
Shanley, L., Jungjohann, K., Strand Cary, M. & Clarke, B. (2015). *Using Technology Based Early Math Interventions: Lessons from KinderTEK™ Mathematics*. COSA Statewide Starting Strong Conference. Eugene, Oregon.



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- Concentric Sky – partner
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- Eugene Family YMCA
- Educators around the U.S. serving on KTEK panels
- CTL staff and children
- Center for Media in Educational Technology (UO)



Learn more and stay in touch at KinderTEK.org

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