

# Examining the Feasibility of a Tablet-Administered Learning Receptiveness Assessment (LRA)



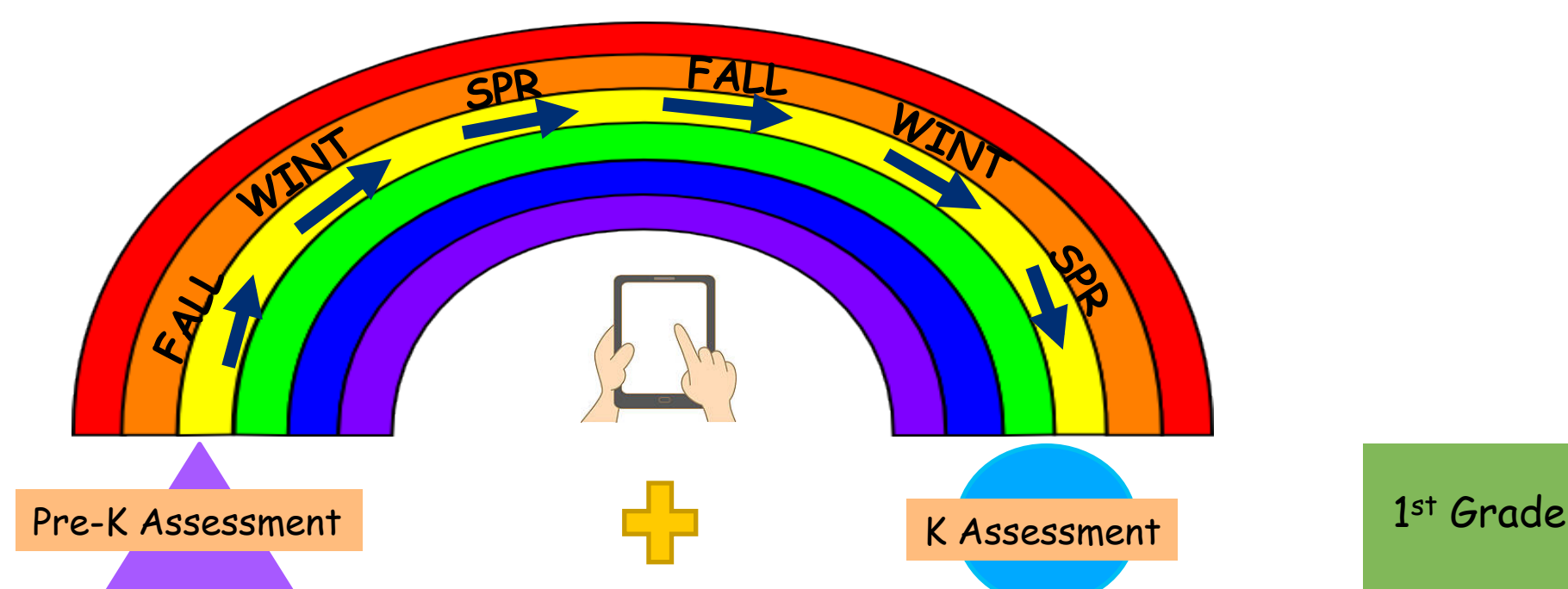
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## Introduction

**The Problem:** Few existing screening measures for reading disabilities (RD) are appropriate for Preschool (Pre-K) and Kindergarten (K) children, and those that exist use different methods and measures for assessing critical behaviors, knowledge, & skills (Diamond, Justice, Siegler, & Snyder, 2013; Conner et al., 2014). This creates a significant gap in early RD prevention efforts across Pre-K and K.

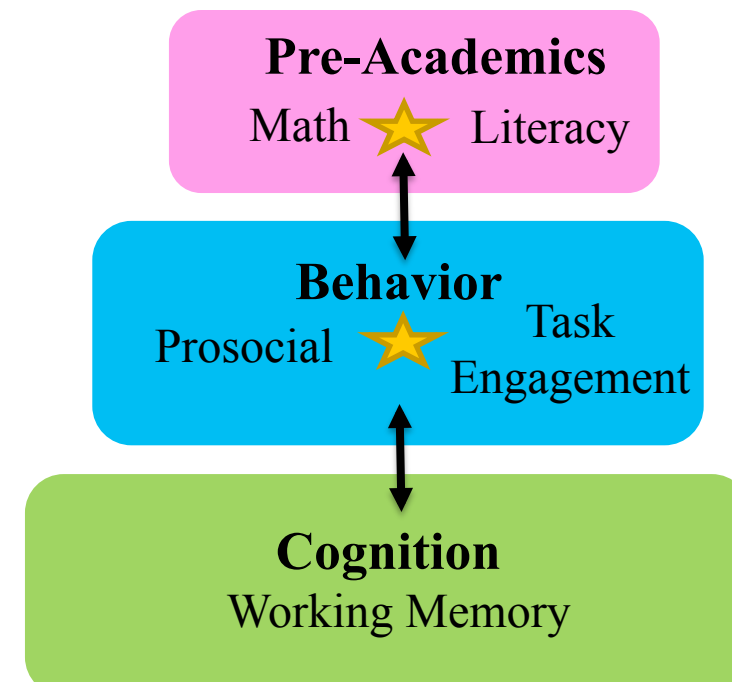
**Current Assessment Limitations:** (1) *specialized training required*, (2) *time consuming*, (3) *expensive*, (4) *results weakly translate to practice*, (5) *separate Pre-K and K methods stifle cross-school communication*.

**Research Question:** Can a tablet-based assessment designed using Universal Design principles feasibly target crucial skills for supporting children at RD risk across the K transition?

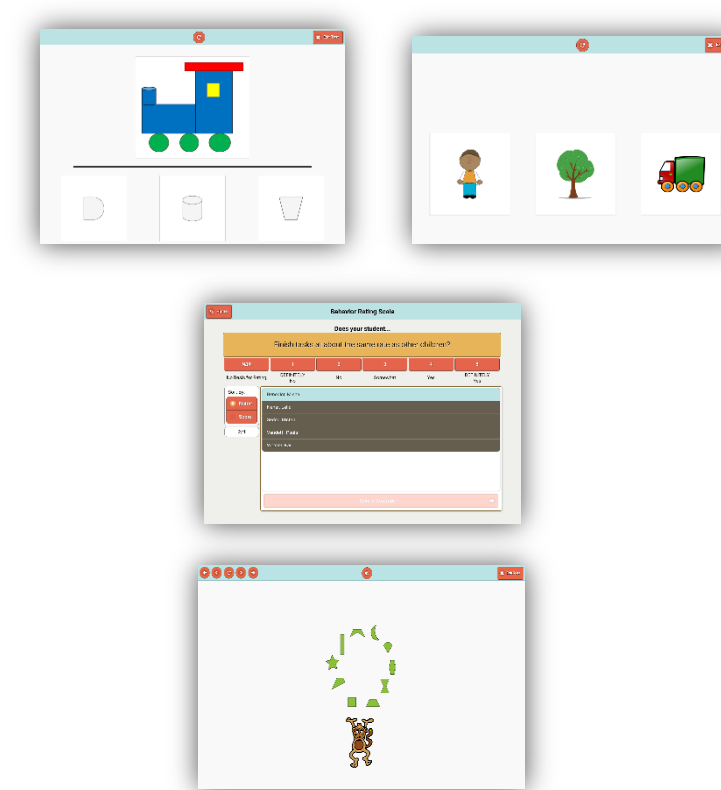


## Learning Receptiveness Assessment (LRA)

### Learning Receptiveness Components



### Assessment Format



## Universal Design Principles

Universal Design “is the design of products and environments to be usable by all people, to the greatest extent possible, without the need for adaptation or specialized design” (Center for Universal Design, 2008, p. 2).

### Equitable and Flexible Use

#### Perceptible Information

Tolerance for Error



Low Physical Effort

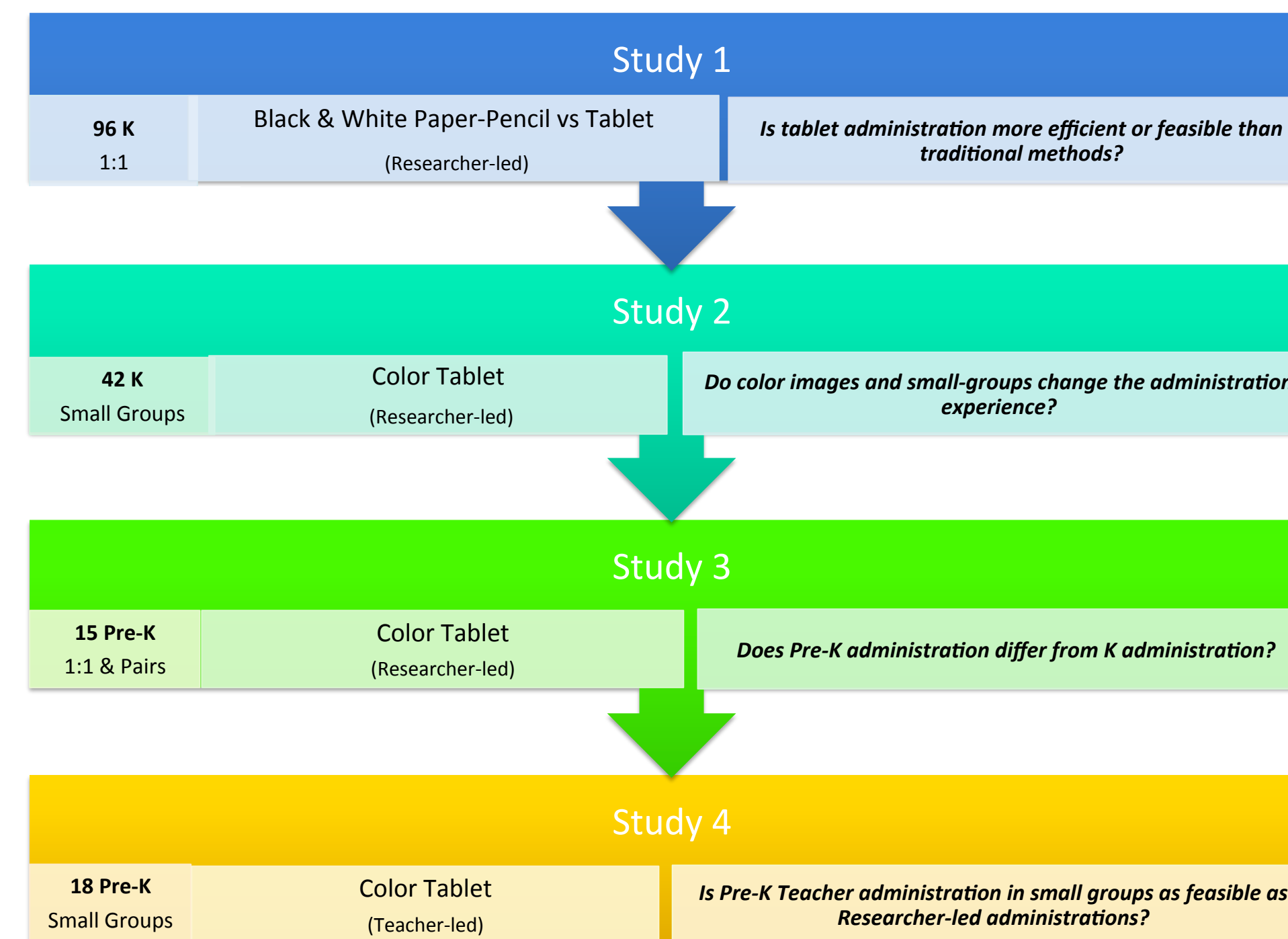
#### Simple & Intuitive

Size and Space for Approach and Use

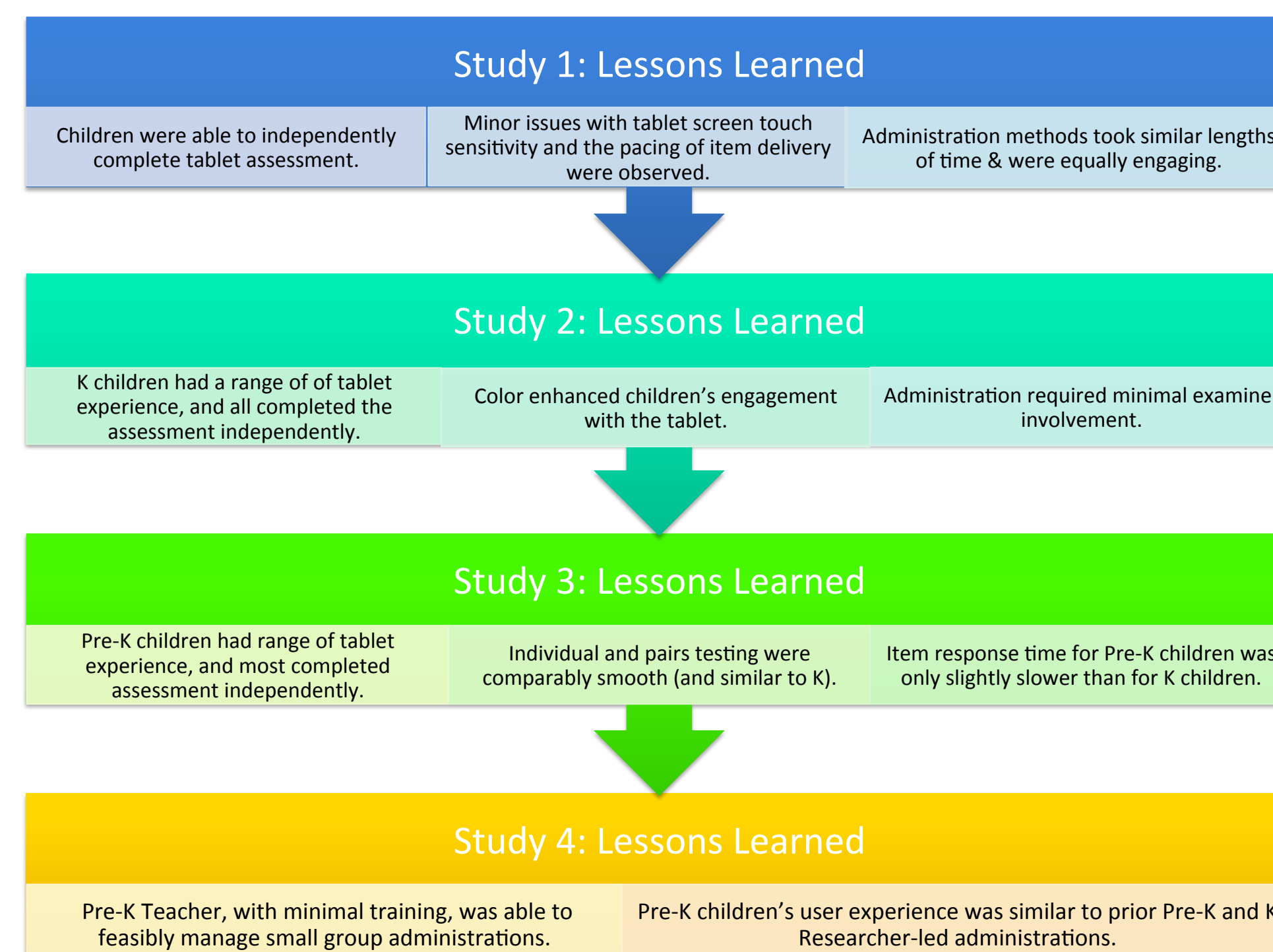
## Methods

We report findings from 4 studies conducted in Oregon between April 2015- May 2016. Across studies we examined **LRA feasibility** and **accessibility** focused on the following factors:

- 1) Delivery format in K (Study 1)
- 2) User experiences and needs for support (Studies 2 - 4)
- 3) Group size (Studies 2 - 4)
- 4) Impact of administrator in Pre-K (Study 4)



## Results



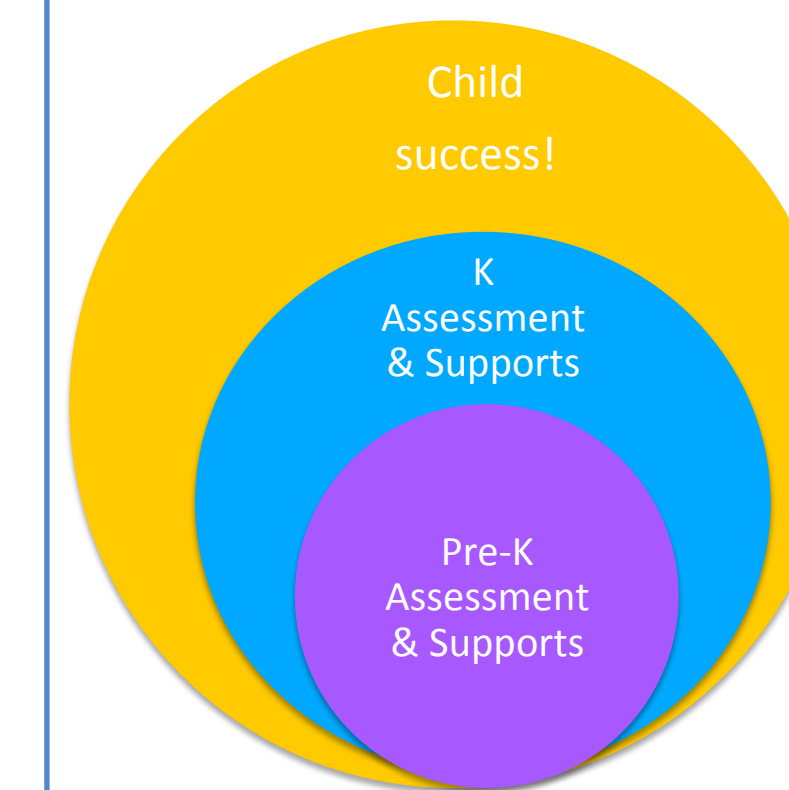
## Implications

Across studies, our findings suggest:

- **Efficiency:** Researcher-led tablet administration involved similar amounts of time as paper-pencil administration (when off-task talk was excluded from analyses). Small-group and 1:1 administrations were found to be comparable, which increases the potential for greater administration efficiency when small groups are used. Minimal training was required for the Pre-K teacher to feasibly administer the LRA, suggesting that specialized training is not needed for administration. This may potentially enable different systematic, yet flexible, administration options in Pre-K.
- **Simple to Use/Accessible:** Both K and Pre-K children were able to complete the LRA mostly independently. Although prior tablet experience resulted in particular observed user behaviors (e.g., swiping instead of touching), children with no prior experience were not apparently disadvantaged in their ability to respond using the LRA: they were observed to require slightly more initial touch assistance for submitting responses. Age (e.g., being four years old at the time of testing) appeared to play a larger role than prior tablet experience in the quantity and type of assistance needed.
- **Perceptible Information & Equitable Use:** Overall, K and Pre-K children independently completed the LRA, and similarly responded neutrally or positively to practice item feedback, indicating that the domains chosen and how they were targeted was developmentally appropriate for both groups of children. Strikingly similar tablet interactions were noted across different groups, although K children tended to exhibit more verbal engagement “with” the tablet.

## Next Steps

- **Assessment Item Refinement:** More item development is needed to optimize measurement precision across the K transition. In addition, refinements are needed to more fully support the “touch” and attention needs of younger children using the LRA.
- **Priority Grouping Development:** We are currently working with Pre-K teachers to develop meaningful automatized priority risk groupings for facilitating data score interpretation.
- **Technology Sensitivity:** Future work will include investigating the extent to which tablet touch sensitivity varies across tablet models and potential alternatives to finger touch selection (e.g., stylus support). We are also examining how to best scaffold adequate screen touch responding among tentative children.
- **Fall Pre-K Administration Needs:** We are currently examining the degree to which Pre-K fall administrations require additional teacher prompting and on-screen guidance.



## Contact and Acknowledgements

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