

Overview

Designed by Philips Color Kinetics (PCK) and marketed by Perkins Products, the LightAide (LA) is an assistive tool for pre-K through upper elementary-grade students with visual impairments. With this study, we investigated implementation of the LightAide in school and home settings, with teachers and parents who have purchased the device and used it for instruction with students who are visually impaired or have other disabilities. A prior study that involved a survey of 11 LightAide purchaser users who had used the device and

Research Design

The mixed methods research design (Creswell & Plano Clark 2007; Johnson & Onwuegbuzie 2004; Johnson, Onwuegbuzie, & Turner 2007) used for the study builds on the methodology TERC has established for similar studies. It was coordinated and conducted by TERC with teachers and parents who were solicited from a list of individuals who had purchased the

Table 1. Characteristics of Teachers

Teacher	Role	State	Location	Setting
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8	1	Desk/Table	< 1 month	Every other day	>30	Student with an adult
9	1	Desk/Table	< 1 month	Every other day	<15	

how parents used the LightAide to meet the needs of their children at home is provided in Table 7 below.

Table 6. Meeting Users' Needs at School

Teacher	Purpose of Use	Implementation Strategy
1	Practice/work on visual attention; Practice/work on tracking light; Play games	- Student uses the switch to "make the rainbow." - Student counts and/or

	Practice/work on tracking light; Relax	or fixation objectives.
11	Practice/work on visual attention; Practice/work on switch use	- Students alternate using a switch while 3-4 students are interacting via watching the LightAide during "center time."
12	Practice/work on visual attention; Practice/work on tracking light	- Teacher uses the LightAide to identify and select the student's preferred color. Teacher then covers and uncovers the LightAide to determine if the student can see the light. - For student working on tracking, teacher and student take turns controlling the switch and manipulating the speed of the dot or line moving during the different tracking activities. Occasionally, teacher covers the screen, moves the dot, and asks the student to locate it.

assess or practice learners' ability to track light, found activities such as Track the Column, Track the Row, and Track a Spot, as well as others in the Visual Efficiency Activity Sets such as Build Squares of Light and Make a Rainbow particularly useful. Those teachers and one parent who were using the LightAide to teach mathematics and ELA concepts preferred activities such as Identify the Bold Uppercase and Lowercase Letters, Read Sight Words, Read Rhyme Words, Form Consonant-Vowel-Consonant Words, Learn the Numbers, Identify the Shape, and Compare Lines of Different Lengths. To teach ECC skills, teachers and one parent used activities such as Identify the Color and Learn Directions. Several teachers said that any activity that required students to use a switch to operate the device was helpful for

8	<ul style="list-style-type: none"> - Can be used with multiple students - Switch activation/operation - High contrast between the bright lights and black background - Durable - Lightweight/Portable - Easy to set up and use 	<ul style="list-style-type: none"> - Learn the Numbers - Make a Rainbow - Compare Lines of Different Lengths 	independence.
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- Add an option to get rid of the color behind the color selected for tracking (the tail).
- Lights appear blurry to some students with the flat lens, and when looking at it from the side
- The colors should be improved. There are several pale pink, and the yellow is very green. This is

References Cited

- American Foundation for the Blind. (2013). The Expanded Core Curriculum for Blind and Visually Impaired Children and Youths. Retrieved from <http://www.afb.org/info/programs-and-services/professional-development/teachers/expanded-core-curriculum/the-expanded-core-curriculum/12345>
- Creswell, J., & Plano Clark, V.L. (2007). *Designing and conducting mixed methods research*. Thousand Oaks, CA: Sage.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26.

Appendix

LightAide Implementation Online Survey for Teachers

* Questions 7-18 above are repeated for users to provide information about this years use.

Experiences and Recommendations

1. What are the specific features of the LA and associated activities that make it useful with regard to your teaching and student's learning?

every other day
weekly
every other week
once per month

7. What was the typical duration of LightAide use last year?

<15 minutes
~ 15 minutes
15

Additional Comments:

LightAide Implementation Study Interview Form

I. Needs of Students and How the LA serves those needs

SAMPLE QUESTIONS/PROMPTS

1) On the survey you said that your child/students have _____disabilities. Could you explain how the features of the LA specifically meet their needs (and/or ways in which it doesn't)?

2) Which LA activities (in the starter set or what you have ordered) are best for your child/students needs? why?

II. Implementation

SAMPLE QUESTIONS/PROMPTS