

**A Study of Purchaser's Initial Experiences with Classroom Use of the  
LightAide™**

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## Study Description

The results of the study reported here focus on the LightAide™ developed by Philips (<http://www.usa.philips.com/>) and marketed by Perkins Products (<http://www.perkins.org/store/lightaide/>). Teachers who participated used a Starter Set package that included: a LightAide™ unit, a flat black lens and a high resolution lens, a power brick and cord, a three-pronged electrical cord, and a Set Up Guide. These items were delivered to purchasers as a Basic Starter Box. In addition to the box of items, purchasers could also download a workbook of activity guides for use with the LightAide™ unit from ([http://www.perkins.org/assets/downloads/lightaide/activity\\_workbook\\_131022.pdf](http://www.perkins.org/assets/downloads/lightaide/activity_workbook_131022.pdf)). The price of this Starter Set was \$999/package. In some cases, additional items were purchased. These included a LightAide Carrying Bag (\$59/bag), AMDi Moon Switches (\$45/switch), and/or additional activities that were not included in the Starter Set (price/number unspecified).

**Goals-**The primary intent of this study was to begin to gather information about who uses the LightAide™ and how it is used and to identify positive indicators of use. A secondary intent was to identify challenges and/or negative experiences that could be used to inform revision of the LightAide™ to improve its use and effectiveness.

**Study Design-**The design for the study builds on the methodology TERC has established for similar studies. It was coordinated and conducted by TERC with teachers solicited from a pool of users. Joe Martini, Director, Perkins Products at Perkins School for the Blind provided the list of purchasers that was used as the source of teachers for this pool. Data collection extended over a six-week period. It involved: 1) soliciting teachers; 2) gathering responses to an online survey; and 3) interviewing a sub-set of teachers who submitted survey data.

**Instrumentation and Data Management-**A link to an Online Survey was sent to teachers along with an introductory note that described the study protocols. An Interview Form was used to gather additional data from those teachers who completed surveys and were willing to be interviewed by phone or face-to-face, depending on location. The data were entered into spreadsheets, cleaned, and analyzed.

## Results

**Who uses the LightAide™?** — Eleven teachers responded to the Online Survey. Table 1 presents the characteristics of these teachers. Three of them, as indicated in the table, were interviewed. Table 2 presents the characteristics of the students with whom each of these teachers used the LightAide™.

**Table 1. Teachers Who Used the LightAide™**

Teacher	Role	State	Setting	Grade (s)	Duration of Use	Interviewed
1	Classroom Teacher	MI	Suburban	N/A	3-4 months	
2	Classroom Teacher	MI	Suburban	N/A	3-4 months	
3	Classroom Teacher	MA	Suburban	2-7	1-2 months	
4	Itinerant Classroom Teacher	TX	Suburban	K-3	<1 month	Yes
5	Itinerant Classroom Teacher	MI	Suburban	Pre K-Graduation	1-2 months	
6	Itinerant Classroom Teacher	MA	Urban	6-12	> 8 months	
7	Itinerant Classroom Teacher	MA	Urban	2	1-2 months	
8	Itinerant Consultant	MA	Urban	Pre K	<1 month	
9	Itinerant TVI*	VA	Urban	K-8	1-2 months	Yes
10	Itinerant TVI	MA	Suburban	4-7	1-2 months	
11	Technology Teacher	MA	Urban	K-8	7-8 months	Yes

\*-Teacher of the Visually Impaired (TVI)

**Table 2. Students Who Used the LightAide™**

Teacher	Age/years	Grade	Ethnicity	Gender	Primary Disabilities
1	6-11	N/A	African American/Black; European American/White	M/F	Visual (VI); Cortical Visual (CVI); Hearing; Physical; Severe cognitive
2	8	N/A	European American/White	Female	CVI; Cerebral Palsy (CP)
3	6-13	2-7	European American/White	M/F	CVI; CP; Seizure disorder
4	Birth-10	K-3	Asian American; African American/Black; European American/White	M/F	VI; CVI; CP; Other health
5	3-26	Pre-K-Graduation	Latino/Hispanic; African American/Black; European American/White	M/F	Severe multiple impairment (SMI)
6	13-22	7-12	Latino/Hispanic; Asian American; African American/Black;	M/F	Cognitive delay
7	8	2	European American/White	Female	CVI; SMI; Cognitive delay
8	0-5	Pre-K	Latino/Hispanic; African American/Black; European American/White	M/F	VI; CVI; Cognitive delay
9	5-13	K-8	Latino/Hispanic; African American/Black; European American/White	M/F	VI
10	11-13	4-7	Kurdish/Iraqi; European American/White	M/F	VI; Severe cognitive; Speech; Physical
11	6-14	K-8	Latino/Hispanic; European American/White	Female	CVI; SMI; Cognitive delay

**How is the LightAide™ used?** — Table 3 presents the mechanics of set up and use. Table 4 presents what each of the teachers did with the device. It also presents information about their experiences in using the LightAide™ for these purposes.

**Table 3. Mechanics of LightAide™ Set Up and Use**

Teacher	Number of Units Used at One Time	Set-up Location	Frequency of Use	Minutes Used	Users
1	1	Desk/Table	Daily	15-30	Student with an adult
2	1	Desk/Table	Weekly	15-30	Student with an adult
3	1	Desk/Table/Floor	Weekly	15-30	Student With an adult and another student
4	1	Desk/Table	Weekly	15-30	Student with an adult
5	1	Desk/Table	Daily	< 15	Student with an adult
6	1	Desk/Table	Every other day	15-30	Student with an adult and another student
7	1	Desk/Table/Floor	Every other week	<15	Student with an adult
8	1	Desk/Table	Weekly	15-30	Student with an adult
9	1	Desk/Table*	Every other day	>30	Student with an adult
10	1	Desk/Table	Weekly	15-30	Student with an adult
11	1	Desk/Table	Weekly	~15	Student with an adult

\*-I have made a PVC stand that fits over a wheelchair to allow closer access. I also use the LightAide™ on the therapy table/mat.

**Table 4. LightAide™ Use and Teacher’s Experiences**

Teacher	Activities Completed	Purpose for Students	Serves as a Replacement	Device(s) Replaces	Educational Value Added
1	Letter selection	Visual Stimulation	Yes	Light box; iPad; Hanging lights; Lighted toys	High
2	Track time attends to light; Track colors of interest	Visual Stimulation	No	N/A	Low
3	Tracking; Turn taking	Relax	No	N/A	Neutral
4	Watch the colors change; Tracking	Encourage “looking” behavior	No	N/A	Very high
5	Letter and “watch” activities	Visual engagement	Sometimes	Light box; iPad	High
6	Turn taking; Concept development	Increase visual attention	Sometimes	Light box	High
7	Watch changing images; Switch use	Engage visual attention	No	N/A	High
8	Tracking; Switch use; Cause and effect	Encourage visual attention; Tracking	Sometimes	Handheld devices	-----
9	Watch the colors; Changing colors; Tracking*	Attend to lights; visual tracking; cause and effect	No	N/A	Very high
10	Tracking; Watch the colors and shapes	Develop visual efficiency skills	Yes	Light box	Very high
11	Color preferences; Visual stimulation	Stimulate vision; Maintain visual attention; Determine color preferences; Tracking	No	N/A	Neutral

\*-Higher level students identify letters, numbers, and colors; track the spot for pre-reading; identify weather; make yes/no answers.

**What are indicators of positive outcomes of LightAide™ use?** Table 5 presents demonstrable indicators of outcomes and information related to additional purchases.

**Table 5. Indicators of Positive Outcomes Related to LightAide™ Use and Additional Purchase Information**

Teacher	Indicators of Positive Outcomes	Activities*	Units**
1	Improved visual attention	Yes	Yes
2	None observed	No	Yes
3	Sustained attention; Able to use in a well lit classroom; Enjoyed its use	Yes	Yes
4	Increased visual attending behaviors	Yes	No
5	Increased visual attention	Yes	Yes
6	Increased visual attention and localizing and fixating on the light source	Yes	Yes
7	Longer visual attention	Yes	Yes
8	Extended visual attention; Greater focus, fix, and follow	Yes	Yes
9	React and attend readily and consistently; Engaged and enjoy its use	Yes	Yes
10	Improved visual attention	Yes	Yes
11	None observed	Yes	No

\*-Indicates teacher’s desire to purchase additional activities beyond those available in the Starter Set.

\*\* -Indicates teacher’s recommendation that the school and/or district purchase additional units.

**What challenges and/or negative experiences were did teachers identify?** — Six of the 11 teachers provided survey and/or interview data about aspects of the device that negatively impacted it use. Their concerns are summarized below:

- 1) Weight of the LightAide™ and its lack of portability are issues as is positioning it and plugging it in. The handle bar stand does not provide enough set up options.
- 2) The Starter Set of 10 activities is limited and can become boring.
- 3) The hidden purchase price of activities beyond those included in the Starter Set is an issue. It appears as if the additional activities can be downloaded at no additional charge after making the initial purchase. However, this is not the case. The cost of these activities is not at all transparent to the purchaser at the time of purchase. The URL for downloading activities after purchase is also unclear to the purchaser. Additionally, the following two requirements are problematic: 1) The activities being specific to a USB flash drive with enough storage space for each set of activities results in a cumbersome key ring full of USB flash drives for changing activities. 2) The additional activities being available only for the specific unit purchased, is prohibitive and costly in classrooms or schools that have more than one unit. It would be preferable for the activities to be “shared” among purchased units. Together, these factors result in the additional activities not being purchased or used. These marketing issues related to the activities and their lack of accessibility was noted by multiple teachers and is a major point of contention that needs to be addressed.
- 4) An on/off button or switch would be a plus. Having the LCD Controls and where the switches plug in on opposite sides of the unit is problematic.
- 5) Although color and speed preference options are provided, they are limited and often do not include the range of options that would be helpful to meet the needs of students with varying needs and preferences. For the tracking activities, having a trail of a different color that is a different color from the dot students are supposed to track is problematic. Some of the colors used throughout the device are a bit off or too close to one another to differentiate. The moving colors are very busy. It would be helpful if there were more than 3 or 4 different color options to select from.
- 6) The shapes and letters could be much clearer and, in some cases, more accurate.

### **Key Findings**

Initial data show that the LightAide™ is a tool that meets the needs of a range of students with varied and unique needs. The data also show that it is a tool that meets the needs of a range of teachers in varied settings with differing expertise. In particular, almost all of the teachers surveyed and interviewed used the LightAide with students with CVI. From their responses and feedback, it appears that the device and several of the activity sets serve the needs of these students particularly well. With regard to the purposes and outcomes related to LightAide use, the device appears to engage users by initially stimulating their vision, and maintaining their attention so that they can “attend” to the light for adequate periods of time during which exposure to core concepts can occur. Additionally, teachers find that it is a useful tool for working on important skills and concepts such as tracking and cause and effect. Although a number of challenges related to marketing, display, and mechanics of operation emerged and need to be addressed, teacher’s experiences indicate that the LightAide™ has the potential to add value to the teaching and learning of students in and beyond its intended audience.