

Good interior lighting facilitating communication

Frouck de Boer, occupational therapist, frouckdeboer@visio.org
Jan Koopman, PhD, clinical physicist
Royal Dutch Visio



Introduction

Proper lighting often enables visually impaired people to conduct several activities. For people with a dual sensory loss, one of these activities is verbal communication. Speech reading relies on reasonable contrast sensitivity and their visual field. In order to facilitate speechreading, illumination needs to be uniform.

We wanted to see where the communication took place and how the light might affect this.

“No light, no communication!”

Casestudy

Female, 61 years old, Usher syndrome, type 2a.

Hearing impairment:

- congenital
- recently cochlear implants

Visual impairment:

- revealed during puberty
- reduced visual field: $<10^\circ$
- reduced visual acuity: 0,2
- glare: disability glare

External factors:

- married
- living in a family home.
- large windows
- high quality lighting in kitchen
- kitchen facing south

“With more light, I have less limitations”

Method

Clients with dual sensory loss were asked to indicate their experienced quality of communication throughout the day during one week. They kept track where the narrator was situated in their living environment, and indicated how well they were able to follow the conversation.

“I need adequate light, to be able to lip read. I always have to take the person nearby the window.”



Living room



Nearby the window



Kitchen

Results

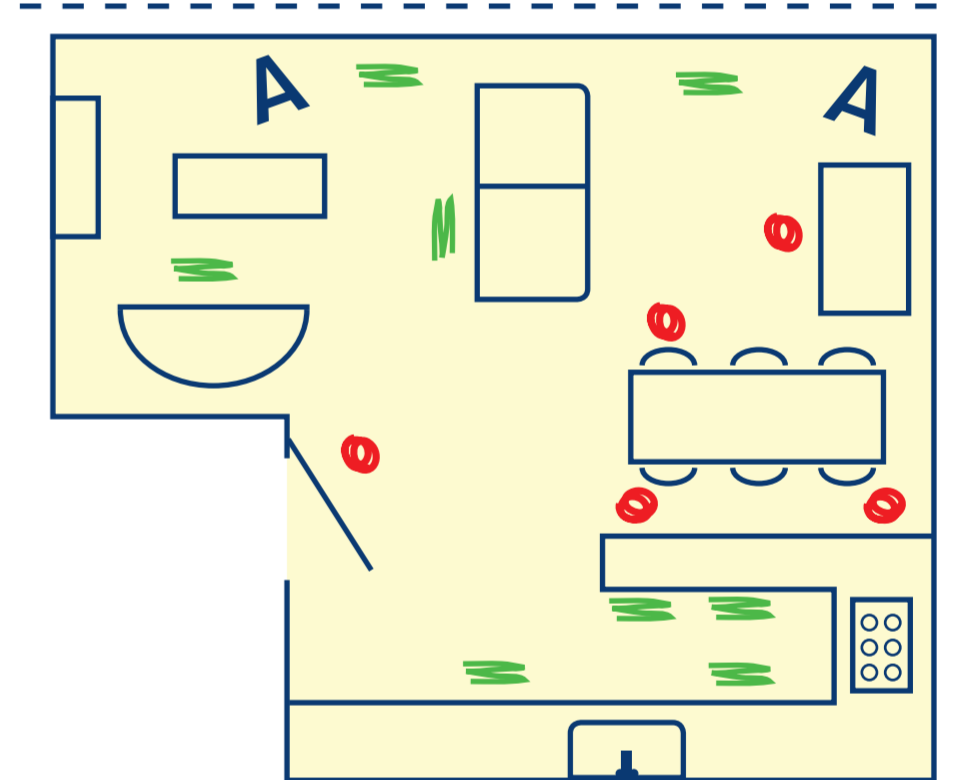
Out of five clients, one client was able to complete the task. The other experienced problems filling in the plan either by lacking frequent conversations due to isolation or due to the complexity of the task. The three plans are provided in Figure 1. The color of the dots indicate the experienced quality of the communication (red - poor; orange - reasonable; green - good).

Based on the results, the following conclusions could be drawn:

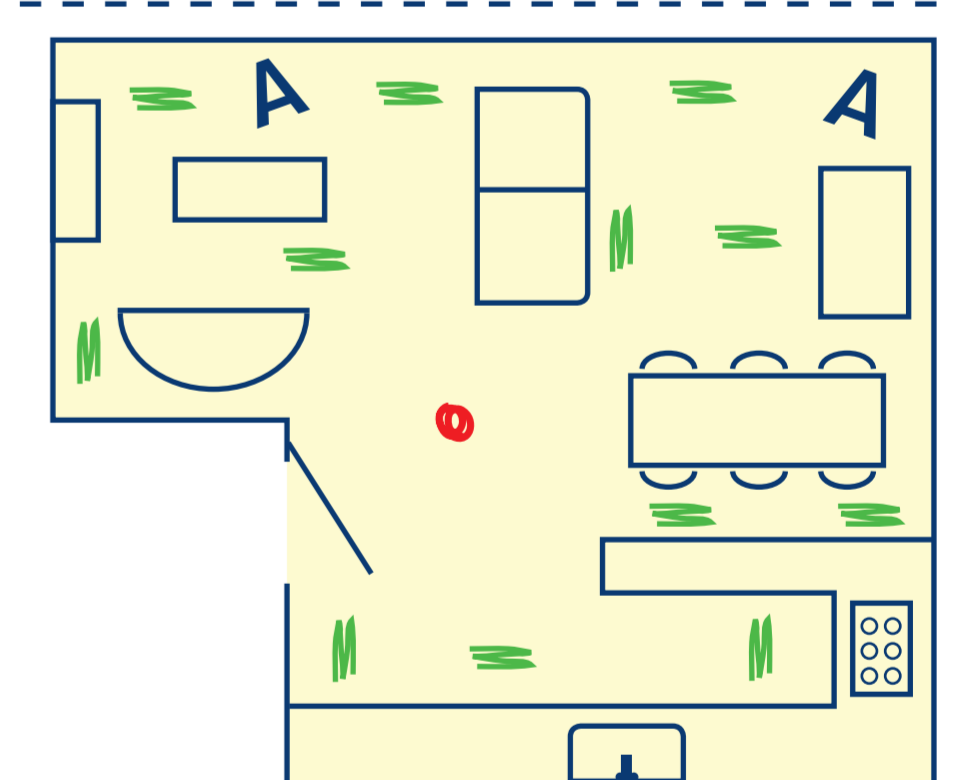
- In the morning communication difficulties experienced are in the middle of the room.
- In the evening communication difficulties experienced in the whole room, except for the kitchen (due to high quality illumination).
- High illumination levels are essential for proper communication. It especially impacts the effort required to follow communication.

“With more light, I have less limitations”

Saturday morning



Saturday afternoon



Saturday evening

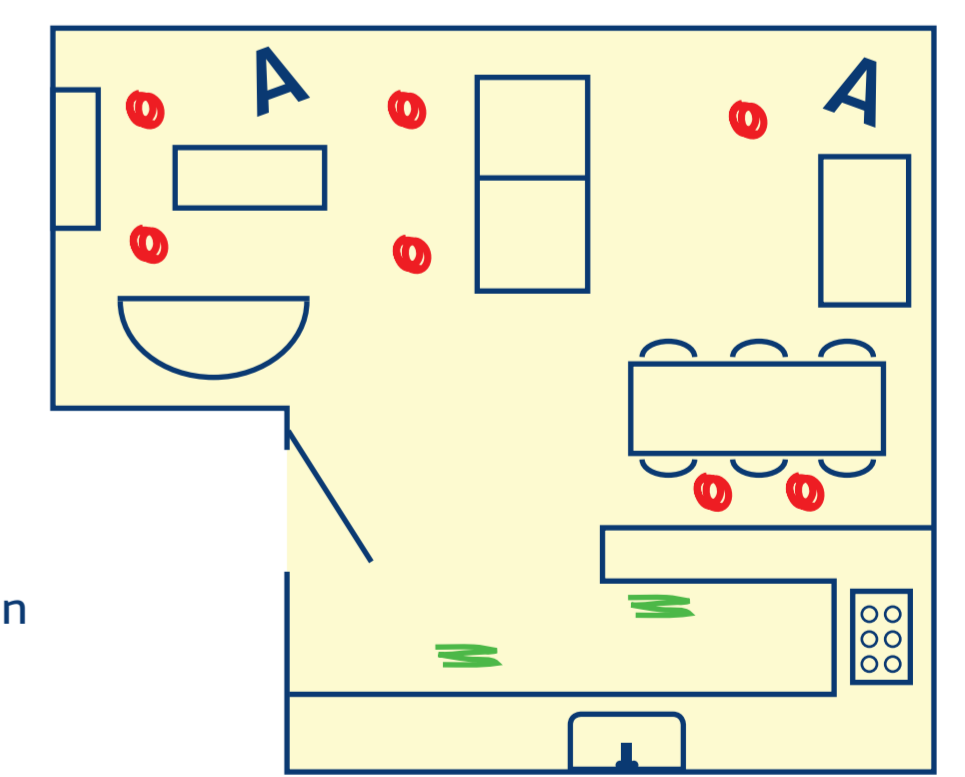


Figure 1.

Discussion

Measurements were made in the spring. The data show that the least communication problems occur in the afternoon. Probably, because diffuse daylight impacts communication abilities. In addition to this, illumination levels should be higher than generally can be provided by lighting available in general shops.

Future

More research is needed to map and highlight the importance and effect of adequate lighting for communication for people with dual sensory loss.