



Essential for Some, Useful for All:

Building Inclusive Classrooms for students with Low Vision

by AWWA Community Integration Service



Building Inclusive Classrooms for students with Low Vision

What is Low Vision?

Low vision (LV) is defined as a permanent, non-correctible visual impairment that affects an individual's ability to complete daily activities. People with low vision experience varying levels of vision loss (related to clarity of vision and/or visual fields). Close to 5% of the population in Singapore are considered visually impaired; many of whom are in the mainstream education system.

Why does it matter?

So much of learning has a visual aspect to it – including accessing materials, reading, writing and manipulation of tools/instruments. Beyond academics, our students' participation in schools and their communities can be heavily affected by low vision as well. This includes everyday activities like getting around, social relationships (e.g. recognizing faces and reading facial expression) and sports/PE participation.

It is important to recognize that students with LV potentially have decreased participation across school activities and face increased visual fatigue completing the same everyday activities. It is doubly important to realize that simple strategies can be put in place that not only increase LV students' access to their learning environments, but also benefit students without LV.





Increasing access for all students

Overall, contrast is a tool that helps highlight important information, but it is a highly essential aspect of accessibility.

The best designs apply the principle of contrast well; and that is something we can apply across our learning materials and environments.



1

Background

Adjusting the background-foreground contrast of learning materials (e.g., worksheets) and projected displays can be an essential accessibility strategy for our students.

Low contrast color schemes can make it difficult, or impossible for someone to read text or access information. Consider which of the following background-foreground contrasts require more visual focus?

What do you think of the contrast in this box compared to the other boxes?	What do you think of the contrast in this box compared to the other boxes?	What do you think of the contrast in this box compared to the other boxes?	What do you think of the contrast in this box compared to the other boxes?
What about the color we use in powerpoint slides, or images?	What about the color we use in powerpoint slides, or images?	What about the color we use in powerpoint slides, or images?	What about the color we use in powerpoint slides, or images?

- Often, the projectors in classrooms can reduce the contrast difference between the background and text without us realizing. The contrast on our laptops compared to what is projected on displays are also often very different.
- This makes it difficult even for a multitude of students to pay visual attention, not just students with LV. For example, students with visual processing difficulties, or students with different sensory needs might also have difficulty.

On the other hand, high contrast color schemes simply make texts, or images easier to see:

What about this color scheme?	What about this color scheme?	What about this color scheme?	What about this color scheme?	What about this color scheme?
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2

Bold

Contrast can also be achieved by bolding (e.g., emphasizing) certain aspects in learning materials. This can include bolding of lines, or bolding of key words.

- Foolsap paper for instance, with light blue lines against a white background, can be difficult for people with LV to identify the lines (e.g., low background-foreground contrast).
- One workaround is the bolding of the lines, that can help students identify where to write.
- This can even help students who might have handwriting difficulties, by providing a better visual cue.
- Bolding of key words also helps students keep track of vital information. This is especially for students who may lose track of where they are in huge chunks/paragraphs.

It can be easier to write on something like this
compared to something like this

It can also be easier to **read and understand** certain **key content** when they are **highlighted**, especially when teaching complex concepts. Or when there are so many words on the same page and someone could potentially lose track of where they are in the sentence and they start missing out on key information...

3

Big

With visual acuity difficulties, magnification of size is often the go-to that helps increase visual access. In the classroom, this means increase in visual font sizes (e.g., consider the typical size 12 font printed out on A4 paper). Contrast in size between objects however, can also help to direct visual attention, and therefore guide visual access.

1. Increase magnification where possible (e.g., when projecting onto a display, worksheets)
 - a. Font size
 - b. Display size
 - c. Paper size
 - d. Material/tool size
2. Contrasting key words can help with emphasis, in similar ways to bolding

Example 1

There is only slight contrast in the sizes between my topic and my questions

Do you think

A student might be able to easily locate a question in an entire worksheet that is built like this?

Example 2

Now that there is a larger contrast in the size between the topic and question

Perhaps

It can be easier for a student to locate things faster?

4

Bright

Educators can also consider the environment, and how that might affect students in the classroom, with or without LV. Shadows or glare can reduce the contrast of the material, and thus visual access from learning materials such as display screens, personal learning devices and whiteboards.

- Is there glare overhead?
- Is there glare from the sides of the classroom?
(e.g., sun coming in at certain times)
- Can I increase/decrease the brightness of the learning material and/or environmental lighting?



5

Body Language

Last, educators are often the biggest resource in the classrooms. The use of self is important in creating attention-getters, from visual cues such as gestures, to auditory cues.

Consider:

- Use of gestures (big and small) to accompany what is being said/taught
- Use of varying tone/pitch/volume



References

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