

# Accessibility Makeover of Your Documents, Images and Videos

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## Abstract

*As presented in the UDL Guidelines, teachers can optimize access to learning by providing learners with options for both perceiving information and for physically interacting with curriculum materials. Designing for accessibility is foundational to meeting these UDL checkpoints. The POUR (Perceivable, Operable, Understandable, Robust) accessibility principles from the W3C (World Wide Web Consortium) discussed in this session can serve as a guide for helping teachers create educational materials that follow accessibility best practices in order to remove barriers to learning.*

## Keywords

AEM, UDL, accessibility, digital educational materials

## INTRODUCTION

Educational materials and technologies are accessible when they can be used by learners with and without disabilities. By having the knowledge and skills to identify features of accessible technologies, and by creating their own accessible materials, teachers can remove physical, sensory, and learning barriers to achievement for learners who access content in diverse ways. When teachers work to promote accessibility, they're optimizing the Universal Design for Learning (UDL) Guidelines by offering options for perception and physical action (CAST, 2018). In this session, the POUR accessibility principles from the W3C are presented as a tool for creating accessible educational materials for use by all learners (National Center on Accessible Educational Materials, 2019, Figure 1),

## BACKGROUND

Accessible Educational Materials (AEM) consist of information or content that is designed or enhanced in a way that makes them usable across the widest possible range of learner variability regardless of format (print, digital, graphical, audio, video). Because most electronic educational materials are designed for learners who use the standard keyboard, mouse, or touch screen gestures on their learning devices, accessibility is essential for learners who use alternative access methods. Accessible materials can be accessed with the same ease by students who use screen readers, switches, voice recognition, or electronic braille devices. What's more, accessibility by design inherently introduces options for perception and physical action, two checkpoints of the UDL Guidelines.

When educators know how to determine the accessibility of commercial products, AEM can be purchased directly from publishers and vendors. With the same knowledge and skills, educators can select free or open AEM in the form of Open Education Resources (OER). Another way to provide AEM is to create them from readily available authoring tools that educators are already using on a daily basis. Many of those tools now include options for adding accessibility into the content creation workflow, meaning all learners can access the material at the same time with the same ease of use.

The common standards that designers use when creating accessible digital materials are the Web Content Accessibility Guidelines (WCAG) developed by the W3C. The guidelines and success criteria in WCAG can be distilled into a set of four simple principles that describe the qualities of an accessible user experience. Combined with skills to leverage the built-in accessibility features in everyday authoring tools, POUR is a guide for teachers to make their next document, image, or video accessible for all learners.

## THE POUR PRINCIPLES

POUR stands for Perceivable, Operable, Understandable and Robust, the four qualities of an accessible user experience as defined in WCAG:

- Perceivable content is presented in such a way that it can be accessed with more than one sense in order to account for the needs of people with sensory disabilities and those who are accessing the content in less than optimal environmental conditions.
- Operable content provides flexible navigation options and can be accessed with a variety of input methods (mouse, keyboard, speech commands).
- Understandable content behaves in an intuitive, logical and predictable way, so learners can focus more of their energy and attention on understanding rather than on the mechanics of the user interface.
- Robust content is created in such a way that it supports current platforms and assistive technologies and future ones as well by conforming to standards and best practices.

# POUR

Perceivable | Operable | Understandable | Robust



**Figure 1. The POUR Principles** Reprinted from the National Center on Accessible Educational Materials (2019, March 17). The POUR Principles. Retrieved from <https://www.w3.org/TR/WCAG21/>

## AEM Center Resources for POUR

Each of the four POUR principles includes several guidelines that represent the goals authors should aim for as they work toward making their materials more accessible for people with disabilities. In turn, each guideline includes several testable success criteria with corresponding techniques for meeting those criteria. For each success criteria, there is a level of conformance ranging from level A (a minimum level of accessibility which may still result in significant barriers for users with disabilities) to AAA (the ideal state of accessibility, which may not be always feasible for some content). Most national laws, such as Section 508 in the United States, aim for level AA conformance, which represents a compromise between the ideal and the practical.

As WCAG moves from the general (principles and guidelines) to the more specific (success criteria and techniques), the language becomes more technical, which can pose some challenges for implementation by classroom teachers.

To address this challenge, the AEM Center developed [Designing for Accessibility with POUR](#). This is a section of the AEM website that has pages for each of the four POUR principles, with sections that provide practical tips for addressing the most common accessibility challenges encountered in educational content. For example, the page on Perceivable has a section addressing techniques for adding alternative text for images in a variety of popular authoring tools (i.e., Google, Microsoft and Apple), as well

as links to resources that explain what makes for quality alternative text. An effort has been made to vet any external resources to make sure they model accessibility best practices (e.g. videos have closed captions and/or a transcript).

Recognizing that classroom teachers are often selecting OER to replace parts of their curriculum with more flexible options, the AEM Center also created [Is It Accessible? Questions to Ask](#). Using the four POUR principles as a scaffold, this page includes a set of questions with examples that can help classroom educators move beyond the “is it accessible?” question to consider the ways in which educational materials are or are not accessible.

## PRACTICE AND LEARN

To help educators who are new to accessibility build momentum in their adoption of best practices, participants in this session will be provided with a set of files they can use to practice several high impact accessibility techniques: adding alternative text to an image, creating a logical heading structure, and providing descriptive links that make sense when accessed out of context on a list. These practice files were developed for [Module 2 of the AEM Center’s Online Learning Series, Accessible Documents](#). The module series, [Making Everyday Curriculum Materials Accessible](#), concludes at the end of March of 2019. All the modules and resources will remain available on the AEM Center website for any educator who is interested in furthering their understanding of accessibility.

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