
Accessibility for Student Success

Solution Design Document

Prepared for



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Information and Learning Technologies

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Project Overview

This project will address the need for increased accessibility to serve all students equitably within Denver Seminary online courses. To accomplish this goal of more accessible courses, a training module will be created for faculty to learn about accessible design, experience the accessibility needs of students, and create accessible content for their own courses.

Denver Seminary has a current focus toward enlarging its accessibility for its student base. While the focus is primarily a geographical reach, for the purposes of this project we are further defining this focus to include accessibility for students with disabilities, including visual, hearing, and cognitive e.g. dyslexia, autism, and ADHD. However, the scope of the project is narrowed to its online programs and accessibility in the online learning environment.

The purpose for creating a design document is to address all relevant learning needs of faculty in this important endeavor, and to develop training that is well thought through and effective.



Summary of Analysis

Denver Seminary's focus of reach and accessibility is institution-wide. Even so, after analyzing the problem of digital equality in the institution's online programs, and exploring a variety of solutions, we have determined that the training should be focused on faculty designers of online courses. These "learners" have the highest potential for implementing accessibility and usability solutions as they design and develop course content and instructional materials.

Learner Context and Environment

Denver Seminary has 38 full-time faculty and approximately 12 active adjuncts who serve a student body of 901 (as of 2016), 55% of which have been, or currently are, enrolled in an online course. As of Fall 2018 semester, the seminary offered 19 online courses, none of which are considered fully accessible to all students.

The majority of online courses designed by faculty are part of the Masters programs in theological and biblical studies (non-Counseling Licensure courses). Of the 35 adjunct and full-time faculty within these departments, 91% have designed, or contributed to the design of, an online course, and it is anticipated that this number will increase significantly in the next two to three years. Adjunct faculty online course designers will also increase this pool exponentially.

This data analysis reveals that a focus on faculty designers as the key learners will have the greatest impact overall in solving the accessibility and usability issues at Denver Seminary.

Learner Characteristics and Motivational Factors

The two learners or personas for this study (see Appendix 1) were selected as representative of the online instructors and designers overall. While they both serve as full-time professors, they still embody characteristics and motivations attributable to either full-time or adjunct faculty.

Suzanne Jackson and Jacob Arnold each represent the three learning gaps identified during the design analysis: knowledge, skills, and empathy. Both understand the need for online courses to be accessible to students with disabilities, but neither has the knowledge about digital equity, nor the practical skills to implement a solution. While they both accept the seminary's initiative of reach and accessibility, Suzanne represents those personally motivated to be inclusive, while Jacob represents those whose motivation is driven more by institutional mandates.

Suzanne readily empathizes with students who have cognitive disabilities due to her son's (and father's) dyslexia; even so, her EQ (Empathy Quotient) will need to extend to students with a broader range of disabilities. Even so, like many faculty who have experience teaching online, Suzanne has encountered students requesting accommodations, so she sees the need

first-hand. Jacob represents learners with a greater EQ growth need, not only does he lack exposure to students with accessibility needs. He also comes from an academically rigorous perspective that hard work will always achieve success; yet he will soon discover that limited access to some students can result in limited success, no matter how high the effort made.

Learner Experience within Learning Solution

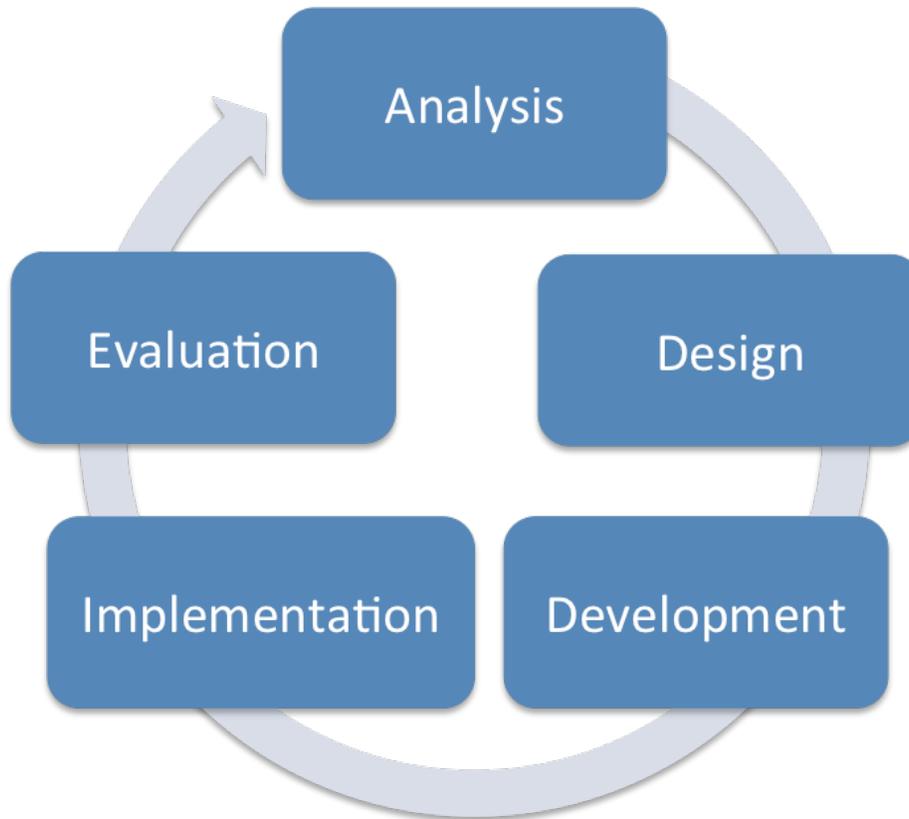
Since all faculty designers must complete the Online Skills Mastery Course prior to designing an online course, the addition of an accessibility module to the already-established required course will be the most accepted solution and have the least impact on workload. Furthermore, since the learners are both onsite full-time and offsite adjuncts, the learning solution being part of an online training will be the most readily available to all learners. Another benefit to the OSM learning solution for these particular learners is that it provides professors like Jacob Arnold with the preliminary online course design instruction and then specifics on accessibility.

The OSM Course accessibility module will address the learning gaps of knowledge and skills by providing background information about student needs, along with practical tools and techniques for usability. We also want the skills training to go beyond the tasks of making a document more readable or captioning a video. We want to instill in our learners a vision for inclusiveness and equity for all students.

It is expected that the immersive experience component of the accessibility module will move the learners toward further understanding and empathy for students. However, it will need to be clearly communicated to the learners that each simulation is limited to only one degree of any one disability. This is an important consideration, since each individual experiences their impairment differently. Therefore, rather than having a sense that they now “understand it all,” we want our learners to come out of the module with new insight into the broad range of challenges that students with disabilities may face. In fact, the goal is for our learners to gain empathy for all students and to recognize the need to provide digital equity among all students transitioning into a new and unfamiliar online learning environment.

Instructional Design Model

ADDIE



For our project, we are primarily using the ADDIE model. This model drives the instructional design process from beginning to end. We will be using the process iteratively, that is once we have created the first iteration of our training module and receive feedback from learners, we will re-engage the process to create the next iteration for the next offering of the OSM course.

In our project the analysis phase was used to quantify the problem and specify what outcomes were needed. It was also used to create learner personas of the typical learner using this training. These personas were the basis for the design of the training to create objectives that met the learning needs presented. The creation of the personas and learning objectives also influenced the development of the training in choosing the most effective modality for delivering the training module and the various tools contained therein.

Learning Problem and Solution

The Problem

Accessibility is not currently one of the primary goals of online course design at Denver Seminary. This has created a learning environment that does not serve all students equitably. Faculty are not adequately equipped to address this digital inequity, as they lack both an understanding of accessibility requirements and the skills needed to implement universal design principles.

Proposed Learning Solution

We propose an online training module that will provide seminary faculty with the knowledge and skills necessary to address accessibility and usability concerns in the design and development of their online courses. The training will also address the learners' need for an increased "empathy quotient (EQ)" based on the empathy research of Kouprie & Sleeswijk Visser (2009, p. 439).

Currently the Educational Technology department offers a 5-week, 5-module Online Skills Mastery (OSM) Course within the institution's LMS that is required for all professors prior to them designing an online course. However, the OSM Course does not include a module involving universal design and accessibility. An effective learning solution will be to add an "accessibility module" to the OSM Course. The training will reside in the OSM Course to maintain consistency with other faculty training. The accessibility module will take approximately four hours to complete within a 1-week time period. The module will utilize outside supplementary tools and resources, particularly in the immersion experience section.

The accessibility module will be a 3-part training, each addressing one of three learning gaps:

Part 1: Knowledge – Curated resource materials detailing the most crucial aspects of accessibility issues in higher education. (Learning activities may include audio screencasts, informational videos, article excerpts, etc.).

Part 2: Empathy – immersion experiences involving engagement with course components that replicate what a student with disabilities might encounter. Learning activities may include a lecture video with the audio muted but no closed captioning, a presentation with unreadable text and coloring, etc. These simulation exercises will access supplementary websites and resources not currently available within the OSM Course module.

Part 3: Skills – Praxis in universal design principles and best practices culminating in independent creation of accessible content and appropriate course layout. Practical and hands-on training will allow faculty to verify that course layouts and content adhere to accessibility standards. Learning activities will include utilizing online tools, software, guide sheets, templates, presentation programs, etc.

Learning Goal

The goal of this solution is to provide faculty with the knowledge related to universal design, an opportunity to gain empathy for students with accessibility needs, and praxis to develop skills for creating accessible online courses. Universal design standards will comply with WC3 (2018).

Learning Objectives

Objective	Bloom's Taxonomy	Learning Activity
After completing the knowledge section of the module, faculty will identify the most common accessibility needs in online course design.	Recall – Knowledge and Comprehension	Review/View/Read/Absorb: audio screencasts informational videos article excerpts
After completing the immersive experience of the module, faculty will empathize with learners who have common disabilities in accessing content. This will be demonstrated through a guided reflection of their immersion experience.	Affective – Valuing	Engage with: Muted, non-captioned multimedia Presentation with unreadable text
After completing the skills sections of the module, faculty will analyze the accessibility level of a sample online course web page to a minimum competency level.	Analysis	Evaluate: Sample course modules with digital inequities to assess accessibility needs.
After completing all previous sections of the module, faculty will correct and/or create a course component utilizing universal design principles. The component will be evaluated by using adopted institutional standards.	Synthesis/Creation	Create: Accessible content within e-learning module.

Learner Journey Map



Solution Storyboard

Storyboard Overview

This storyboard visually depicts the learning solution, Accessibility for Success, that will be designed for Denver Seminary. The learning solution is intended to train and prepare seminary faculty to apply accessibility principles and standards in the development of online courses.

<p>Title of Learning Solution</p>	<p>Online Skills Mastery (OSM) Course <i>Accessibility Module</i>. Subsections/Subtitles of the Accessibility Module:</p> <ul style="list-style-type: none"> ● Visual Impairments ● Auditory Impairments ● Cognitive Disabilities ● Other Accommodations
<p>Target Audience</p>	<p>The overall target audience for the learning solution is seminary faculty who will be designing online courses that must adhere to accessibility standards. The storyboard illustrates the learning experience of the solution’s Learner Personas: Dr. Jacob Arnold and Prof. Suzanne Jackson.</p>
<p>Description of Learning Solution</p>	<p>This Accessibility Module is an online training that first provides learners with background knowledge of UDL (Universal Design for Learning) and accessibility standards (WC3 2018) through journal articles, informational videos, and infographics. Learners then gain empathy for students with accessibility needs by engaging in immersive experiences that simulate what students with various physical and cognitive disabilities encounter in the online classroom. Practice opportunities require that learners review a sample online course home page and identify digital inequities in specific course components. Finally, learners must follow the guidelines and principles they have learned by correcting the course elements to make them accessible to all students.</p>

Duration of Learning Solution	<p>The Accessibility Module is a 4-5 hour, one-week, online training module that is part of the larger OSM Course, a five-week course required for faculty course designers. Duration includes instructional content, practice opportunities, and assessments.</p> <p>Subsections:</p> <ul style="list-style-type: none"> ● Visual Impairments 45-60 minutes ● Auditory Impairments 45-60 minutes ● Cognitive Disabilities 45-60 minutes ● Other Accommodations 30-45 minutes ● UDL Course Creation 45-60 minutes
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Course Alignment

For the most comprehensive learning solution, each of the subsections of the Accessibility Module will align with all four of the learning objectives. For example, the storyboard provided below depicts one subsection, visual impairment, that encompasses the objectives of (1) knowledge comprehension, (2) empathy growth, (3) analysis skills, and (4) creation of accessible course components applying prior learning and praxis. In addition, the learning solution is aligned with the course overall in that its training takes place within an online platform, the very same learning environment where learners need to identify, improve, and design for UDL needs.

Objective	Instructional Approach	Practice Opportunity	Assessment
<p><i>Recall – Knowledge and Comprehension:</i></p> <p>After completing the knowledge section of the module, faculty will identify the most common accessibility needs in online course design.</p>	<p>The teaching strategy in this segment is to deliver instructional content that is directly aligned with the objective of providing relevant and useful UDL materials that allow learners to identify accessibility needs.</p>	<p><i>Review – View – Read – Absorb</i></p> <p>audio screencasts informational videos journal articles</p>	<p>The learner’s absorption of this content will be assessed by how well they utilize their new knowledge to complete the assessments of course design correction and creation detailed below.</p>

<p><i>Affective – Valuing:</i></p> <p>After completing the immersive experience of the module, faculty will empathize with learners who have common disabilities in accessing content.</p>	<p>The teaching strategy in this segment is to provide learning activities that simulate challenges experienced by students with disabilities in online courses that have inaccessible elements. These activities are aligned with the objective of developing empathy in learners.</p>	<p><i>Experience learning with Disabilities:</i></p> <p>Muted, non-captioned multimedia</p> <p>Presentation with unreadable text</p> <p>Images and charts displayed while missing alternative text</p>	<p>The learner’s growth in EQ (Empathy Quotient) will be demonstrated through guided reflections of their immersion experiences. While this is an affective and qualitative measurement, it is still a core part of the success of the learning solution.</p>
<p><i>Analysis:</i></p> <p>After completing the skills sections of the module, faculty will analyze the accessibility level of a sample online course webpage to a minimum competency level.</p>	<p>The teaching strategy in this segment is to equip learners with resources to adequately compare course elements. This skills training is aligned with the objective of resourcing learners to independently perform evaluation and analysis of UDL in courses.</p>	<p><i>Analyze and Evaluate:</i></p> <p>Resource materials</p> <p>Infographics</p> <p>WC3 Scorecards & Checklists</p> <p>Sample course webpages</p>	<p>The learner’s acquisition of the necessary skills for course analysis will be verified by their success rate in evaluating sample course components for digital inequities and accessibility needs.</p>
<p><i>Synthesis/Creation:</i></p> <p>After completing all previous sections of the module, faculty will correct and/or create course components utilizing universal design principles.</p>	<p>The teaching strategy in this segment is to provide learners with a ‘sandbox’ webpage needing component correction or creation. This exercise aligns with the objective to allow learners to synthesize their learning and create content that is equally accessible to students.</p>	<p><i>Correct and Create:</i></p> <p>Accessible content within sample course and/or ‘sandbox’ webpage.</p>	<p>The learner’s synthesis of training and successful correction or creation of course content will be evaluated by using adopted institutional and industry standards, e.g. WC3 (2018).</p>

Storyboard

The storyboard below demonstrates the flow of one element (teaching for visual impairment) of the module where learners learn from resources and then proceed to the practice opportunity and assessment. This is one 30 minute segment of the larger training module.

ACCESSIBILITY MODULE STORYBOARD-VISUAL IMPAIRMENT

RESOURCE #1: UDL STYLE GUIDELINES

Prepared and Provided by Kate Miller, Access and Usability Manager, Office of Information Technology, University of Colorado Denver, Anschutz Medical Campus

Design Considerations for Disabilities

Blind

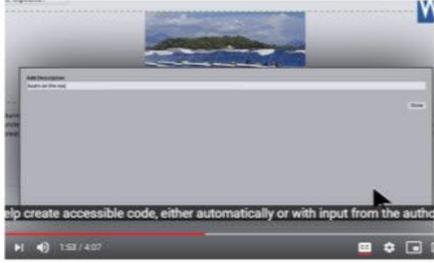
Design Consideration	Why?	Yes/No/Needs Improvement
All content must be presented in text or via a text equivalent (e.g., alt text for images or other non-text objects).	Screen readers cannot read non-text content (e.g., images) directly, but they can read all text that you provide.	
All functionality must be available using only the keyboard. (Note: be sure to test with the screen reader turned on, because there are subtle differences in keyboard behaviors when the screen reader is on.)	Even though most blind users can physically use a mouse or trackpad, it doesn't do them much good because they can't see where the mouse pointer is. It is more effective for them to navigate by the keyboard.	
The content must use markup with good structure and semantics (headings, landmarks, tables, lists, etc.).	Screen reader users often pull up lists of headings, landmarks, and other semantic elements to help them understand what is on	

TIME
8 minutes

GOAL
Knowledge & Comprehension

DESCRIPTION
Review Design Considerations for Disabilities document - review with focus on accessibility for visual impairments.

RESOURCE #2: WC3 STANDARDS



Introduction to Web Accessibility and W3C Standards

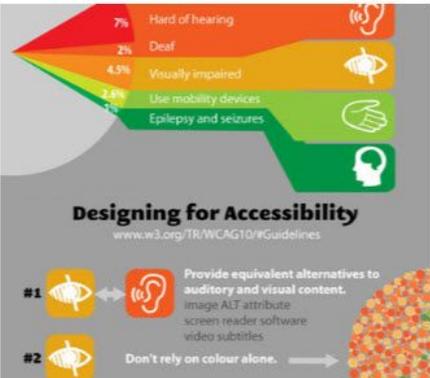
W3C Web Accessibility Initiative (WAI)
Published on Dec 4, 2017

TIME
4 minutes

GOAL
Knowledge & Skills

DESCRIPTION
View Introduction to Web Accessibility and W3C standards video - view with focus on closed captioning for visual impairments.

RESOURCE #3: TERMINOLOGY & SOLUTION



Designing for Accessibility
www.w3.org/TR/WCAG10/#Guidelines

#1 Provide equivalent alternatives to auditory and visual content. image ALT attribute, screen reader software, video subtitles

#2 Don't rely on colour alone.

TIME
3 minutes

GOAL
Knowledge & Skills

DESCRIPTION
Review Infographic overview of designing for accessibility - refer to section on visual impairments.

ACCESSIBILITY MODULE STORYBOARD-VISUAL IMPAIRMENT

PRACTICE ACTIVITY: IMMERSION



TIME

6 minutes

GOAL

Experiential - Empathy

DESCRIPTION

Learner will be blindfolded and use a screen reader to learn course material on sample learning module.

ASSESSMENT PART 1: IDENTIFY NEEDS



TIME

3 minutes

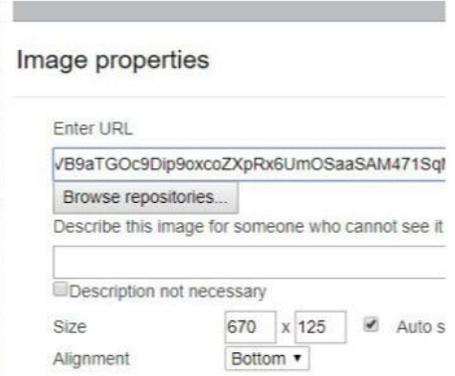
GOAL

Analyze & Evaluate

DESCRIPTION

Learner will identify problematic elements for visually impaired student on sample learning module such as no image descriptions on pictures and graphs.

ASSESSMENT PART 2: CORRECT ISSUES



TIME

6 minutes

GOAL

Synthesize, Correct, Create

DESCRIPTION

Learner will add image descriptions to sample learning module to conform with accessibility standards. Learner will pass assessment if accessibility standards are met.

Evaluation Plan

Evaluation Purpose

The purpose of the evaluation plan will be to determine the effectiveness of the accessibility module, not only in terms of the training itself, but also how the training translates into useful skills used by learners as they later develop their own accessible online courses. Initially, we want to evaluate the quality of the training materials and presentations and to what degree our learners find the module engaging and valuable. Yet a core part of the evaluation process will be to find demonstrable evidence that the training has transferred to course design that is digitally equitable. The faculty's implementation of the training "on the job" will indicate our success at contributing to the organization's overall goal of reaching more students, especially those who are currently unable to fully access its online programs.

The plan is based upon the three major reasons for evaluation suggested by Kirkpatrick and Kirkpatrick (2015) and rephrased for our purposes here:

- To *improve* the accessibility training module.
- To *maximize transfer* of the learned knowledge and skills to:
 - behavior within the module, specifically, analyzing course components for accessibility needs and adequately correcting issues;
 - behavior "on the job," specifically, applying accessibility standards to subsequent course development done independently;
 - attainment of organizational results, namely, institutional strategic goals to have online courses accessible to more students.
- To *demonstrate the value* of the training to the seminary as a whole.

The mid-training evaluation will be formative and based upon Dick, Carey, & Carey's *Systematic Design of Instruction* (2004). It will allow for revisions and improvements of the training even while learners are working within the accessibility module. This instructional design model for formative evaluation advises one-on-one and small group events; these are detailed below.

The majority of the evaluation process will be summative and based upon the New World Kirkpatrick® Model (2010). Each of the four levels of evaluation in this model will be addressed and will involve both data gathering for measurable parts of the evaluation and narrative feedback from the learners' self-reflective portions of the evaluation.

A key anticipated benefit of the evaluation is how it might influence a culture change among faculty members. The evaluation plan will give learners an opportunity to articulate their satisfaction with the training, along with any increase in confidence and motivation. This feedback translates into "testimonials" that influence future faculty participation in the training.

Plan for Data Collection & Analysis

Analysis Model	Plan for Data Collection	Evaluation: Survey Questions/measurables
<p>Dick, Carey, & Carey Formative Evaluation</p> <p>During Training</p>	<p>In-Person Questionnaire Interview with learners</p>	<p>Evaluation: Survey Questions/measurables</p> <p>As you view the layout of the learning Module, what is clear and what is confusing?</p> <p>What do you think of when you hear the term universal or accessible design?</p> <p>How well did the immersive experiences help you identify with students with disabilities? Can you share with us how one of the simulations affected you?</p> <p>What feedback would you have for improving this module?</p>
<p>Summative Evaluation</p> <p>Post-Training</p>	<p>Evaluation Quiz with Eight questions on sliding scale from Strongly Disagree to Strongly Agree</p>	<p>Reaction and Learning</p> <p>After completing this accessibility module: (strongly agree to strongly disagree)</p> <p>I am more knowledgeable about accessibility in online education.</p> <p>I have the skills to make my course accessible.</p> <p>I believe it will be worthwhile to make my course(s) accessible.</p> <p>I feel confident in creating accessible content.</p> <p>I am committed to create accessible content.</p> <p>I am satisfied with the training module.</p> <p>I was actively engaged in the learning experience.</p> <p>This training was relevant to my teaching .</p>

<p>Summative Evaluation</p> <p>Post-Training Course Implementation</p>	<p>Observation of Completed course evaluated by accessibility standards</p>	<p>Behavior and Results</p> <p>Semester following the training the faculty will have fully accessible courses</p> <p>Evaluation of Critical Behaviors: Ongoing ID review of the subsequent courses based on the parameters laid out in the training itself</p> <p>According to the New W K M, adding “required drivers” as accountability and support systems can increase a training program’s application on the job by 85% (2015)</p> <p>Required Drivers:</p> <ul style="list-style-type: none"> - Reward: One of the criteria for receiving the seminary’s <i>Global Educator Award</i>. - Motivation: Personal one-on-one coaching with an Ed Tech instructional designer with lunch provided. - Accountability and Monitoring: If the ongoing ID review in subsequent semesters reveals a lack of readiness in course preparation according to the standards, the faculty members will need to re-take the accessibility module. - Stipend based on successful completion of the OSM Course, including the accessibility module.
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Revision Cycle Strategy

The accessibility module is well suited to a continuous revision cycle strategy. A key benefit to the learning solution being an e-learning training is that it allows for constant revisions, even while learners are working their way through the training.

During training, each learner’s progress can be monitored and evaluated as they work through the subsections of the course: visibility impairments, hearing impairments, and physical or cognitive disabilities. This could expose needed adjustments to subsections that may not apply to the training as a whole. Post-training surveys and feedback may reveal the need for more substantial modifications, such as filling in any gaps or missing elements, improving existing materials, or updating resources.

While the learning solution can accommodate a continuous revision cycle, it is also true that the larger training in which it exists, the Online Skills Mastery (OSM) Course, often occurs on a semester-by-semester basis. Therefore, a corresponding, and potentially more extensive, revision period will be scheduled prior to the next cohort of learners entering the training in successive semesters.

Evaluation Schedule

The schedule for evaluation will encompass a few months. Formative feedback from learners will be sought during the initial offering in January 2019. Summative feedback will be obtained following each offering of the training.

The first element of the summative feedback will be an eight question learner feedback survey given to all participants upon completion of the accessibility module in January 2018. This survey will give participants the option to choose from “strongly agree” to “strongly disagree” statements about their learning experience and will measure reaction to the training and any learning that happened.

The second element of summative evaluation will be a comparison of each of the learner’s online courses the first semester after completing the training module to a prior offering of the course. This evaluation on behavior change will test the latest online courses to universal design standards to evaluate if the training module impacted accessible design and will be evaluated in June 2019.

Plan to Communicate Results

The results of the formative evaluation will be communicated in bullet points to the members of the Educational Technology staff responsible for creating the module and will subsequently be implemented directly into the learning module prior to deployment.

The results of the summative evaluation will be collected and compiled into a evaluation report available to the Educational Technology staff to be referenced in modifying the second iteration of the learning module. There will also be narrative definitions of how the training advances the institution’s strategic goal of accessibility. This results section will rely on the data collected from the surveys and real course accessibility outcomes. An executive summary of this report will also be given to the Associate Dean of Educational Technology.

This report will identify and communicate the interpretation of data from the Results, Behavior, Knowledge and Skill, and Reaction categories that will be measured following the first faculty training on Accessibility.

Assumptions

The solution detailed in this design document is based upon the following assumptions:

- Denver Seminary Administration agrees with the premise that the lack of accessibility and usability in its online courses is a problem that needs to be addressed institutionally. Further, they approve of the solution detailed in this design document as an effective way to address the problem.
- Denver Seminary Administration will continue to require faculty to complete the OSM Course prior to designing an online course.
- Faculty will have access to a computer, webcam, microphone, and broadband internet connection in order to complete the online training.
- Faculty will complete all modules of the OSM Course, including the accessibility module, and accomplish its learning objectives of knowledge, empathy, and skill.
- Each faculty member will adhere to completion deadlines as assigned to them individually by the Associate Dean of Educational Technology.
- Faculty designers who have previously taken the OSM Course will be invited to return to complete the new accessibility module.
- Educational Technology Department instructional designers will create the accessibility module according to the solution detailed in this design document.
- Upon completion of the design, Educational Technology Department instructional designers will maintain the OSM Course overall, and administer the training to faculty.
- Upon completion of the design, it is understood that learning activities, materials, and resources may need to be updated or revised on a regular basis. Revisions will be determined and completed on a quarterly basis.

Project Schedule

Date	Approximate Hours to Complete	Development Phase	Instructional Design Solution	Outcome
9/16/18	5	Analysis	Creation of Learner Personas	Ability to design solution for learner needs
10/14/18	10	Design	Creation of Learning Objectives and plan for development	Planned design for training module
12/3/18	10	Development	Creation of knowledge component of module	Knowledge component imported into training module
12/10/18	15	Development	Creation of empathy component of module	Empathy component imported into training module
12/17/18	15	Development	Creation of skills component of module	Skills component imported into training module
12/21/18	2	Development	Training Module completion	Deliverable training module housed in OSM course
1/7/19	0	Implementation	Faculty have access to training module in OSM course	Beta test of module effectiveness
2/1/19	20/learner	Evaluation	Completion of OSM course	Feedback from faculty requested to implement into next iteration
2/8/19	5	Evaluation	Post-completion evaluation	Categorization and evaluation of faculty feedback of accessibility module

Communication Plan

Project Management

The preparers of this Solution Design Document will serve as Project Managers for the development and deployment of the accessibility module within the OSM Course. We as the Project Managers will be in regular email and phone communication with the institution's two in-house Instructional Designers who are charged with creating, maintaining, and administering the accessibility module per the requirements of this design document.

While we will serve as managers of the project, we will not directly manage the Instructional Designers, who have their own in-house reporting structure. The fact that the Solution relies on the availability of the IDs may pose some challenges. There is a high probability that urgent issues will circumvent the IDs' ability to prioritize this project. IDs will be required to update Project Managers as conflicts arise. We will communicate with the Director of Educational Technology to request any needed workload redistributions to keep the project on track.

Project Tracking

Project development milestones will be divided into the three core "Parts" of the accessibility module: knowledge, empathy, and skills. A project checklist will be provided to the Instructional Designers in order to track the development of each component within each Part, including learning activities and learner assessments.

Progress documents will be uploaded to the institution's SharePoint intranet website on a weekly basis. To provide a clear visual of progress for project managers, staff, and stakeholders, these documents will involve the project schedule (see above) marked with project notes detailing projected and actual completion dates of each module component.

Project development milestones will be calendared using Outlook meeting requests sent to all related staff and project managers. Due to time constraints and limited staffing, these calendar items will not result in formal group meetings; rather, they will serve as markers for project deadlines. However, if necessary, in person meetings can take place during these times. In similar fashion, monthly 'meeting requests' will be sent to stakeholders to provide an opportunity for project updates. These, too, can become face-to-face meetings as necessary.

Project Communication

Once the module design is complete, Project Managers will notify the Associate Dean of Educational Technology that the OSM Course is ready for faculty members (learners) to be enrolled. As in past iterations of the OSM Course, the Associate Dean will enlist faculty participants and assign each a completion deadline. The Associate Dean will also contact

faculty members who have previously ‘graduated’ from the OSM Course and will request that they return to the online training to complete the new accessibility module.

Learner progress through all modules of the OSM Course will be monitored by the Instructional Designers by analyzing LMS activity logs, reviewing quizzes or other assessments, and providing feedback to learners. As it relates to this Solution, Project Managers will reengage once learners reach the accessibility module in order to do their own evaluation of the Solution’s effectiveness. Project Managers will also confirm that the learners adequately achieve the learning objectives based on the standards set forth in this design document.

Instructional Designers and Project Managers will have video conferences to share their results about the learners’ success (or lack thereof). If necessary, decisions will be made for: (a) module revisions and/or (b) additional learner support in order to achieve learning objectives. Time estimates for module redevelopment and for learner support will be communicated to the Director of Educational Technology who will access available staff resources and feasible timeframes for these changes. Project Managers will make recommendations; although at this phase of the Solution deployment they will not have final authority over the revision schedule.

After the learning solution has been successfully deployed and has been tested by a minimum of six (6) faculty learners, Project Managers will keep in contact with in-house Instructional Designers on a monthly basis for up to six (6) months. Project Managers will continue to be available, but communication after this point will be initiated by seminary staff or stakeholders.

Project Summary

This project addresses the need for increased accessibility to serve all students equitably within Denver Seminary online courses. This will be accomplished through equipping faculty to integrate accessible content and resources into their online courses through a training module in the current Online Skills Mastery course.

The training module will meet the learning needs of Denver Seminary faculty, specifically in knowledge of accessible design, empathy for all learners, and developing the skills to create accessible course materials, specifically addressing visual, hearing, and cognitive e.g. dyslexia, autism, and ADHD. The scope of the project is narrowed to online programs and accessibility in the online learning environment.

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Appendix A

Learner Persona Profile 1

Professor Suzanne Jackson – Theology Instructor – Denver Seminary

Discovery

Professor Suzanne Jackson is a 43-year-old female who is outgoing and passionate about her teaching career and life in general. She was drawn to academics and teaching while in college and is considered somewhat of an oddity within a family of entrepreneurs and local business owners. Even so, due to their business success, her parents were able to fund her undergraduate and post-graduate studies.

Suzanne remembers being impressed by her father’s determination and skill at running a business even though he struggles with dyslexia. Her father was not diagnosed with dyslexia until an adult, so he performed poorly at school throughout his childhood. In recent years, Suzanne’s compassion for her father’s experience has carried over to her son once she discovered that he also suffers from dyslexia. This has made her highly motivated to help her son however she can, especially with his school work. She also volunteers at his elementary school on a committee that seeks ways to better serve students with learning disabilities.

Her experience at home has resulted in increased empathy for her students at the seminary. She realizes that some students who have dyslexia, the ‘invisible’ disability (<https://dyslexia.yale.edu/the-invisible-disability/>), do not divulge this to their instructors or classmates. Therefore, Suzanne makes a concerted effort to provide an open environment where students can request accommodations for any learning challenges they may face.

Immersion

Suzanne became a full-time faculty member 5 years ago, even though she had been a teaching at Denver Seminary for twice that long. Her passion for teaching, and popularity with students, meant that she never saw a need to pursue a doctorate. This fact initially delayed her nomination and appointment to full-time faculty status.

In spite of her position or perceptions, Suzanne sees her role in the organization as one who promotes innovation in course (re)development and new strategies for teaching and learning. As part of that, she sees the need for online learning and views it as its own form of “accessibility” by making higher education readily available all over the world. She volunteered



to be one of the first faculty members to design online courses and has become a pioneer for online education at the seminary.

Suzanne's faculty designer role directly impacts the seminary's Strategic Initiative to "expand accessibility" to the non-traditional student. Yet she understands that the term "accessibility" goes beyond availability of education to encompass access to education for those with disabilities. She has made it a professional goal to be an advocate for improving accessibility at the institution. However, her goal lacks an avenue for realization and execution. She is not sure how to go about the task. She has sought out the help of the instructional designers in the Educational Technology Dept. and she is open to any further training, insights, or support.

Connection

Suzanne has a variety of obstacles to overcome.

She has a knowledge gap as to what necessitates expanded accessibility. Her experience, and her empathy quotient, is limited to the specific learning disability of her son. She lacks exposure to the entire range of disabilities, including visual and hearing impairments, and hearing comprehension challenges due to cross-cultural language barriers.

Relatedly, Suzanne may be too quick to translate her pre-understandings from her volunteering at an elementary school to what accessibility means in graduate level studies. While some of the initiatives made by the school's committee may apply, many will not.

Suzanne also has a learning gap in knowing what constitutes 'reasonable accommodation'. While she wants to offer accommodations to any student with expressed need, she has also received complaints that her concessions are not fair to all students. Her emotional connection to her son may cause her to over-compensate on behalf of the minority with disabilities. Universal design principles could bridge Suzanne's practical skills gap to make her curriculum more accessible to all students, thereby also serving the few.

Lastly, Suzanne faces a credibility gap, especially with faculty who do not take her as seriously without having a PhD. Her enthusiasm for new initiatives can come across as headstrong and overly ambitious by faculty who perceive her as insensitive to their research time and workload constraints. In order to be an implementer and promoter of the institution's accessibility efforts, she will need help presenting a plan to her colleagues that is professional and 'doable'.

Detachment

Suzanne would benefit from formal training in accessibility needs, standards, and implementation. She is already familiar with the online classroom and can navigate the seminary's learning management system, so online training will be the most effective. This is advantageous since the institution needs to focus on accessibility particularly within its online courses; so, the online training environment will serve as its own form of experiential learning.

Suzanne has already had success with the Educational Technology Department's existing online training for faculty course designers. However, none of the current modules of the course

address accessibility. A potential learning solution for Suzanne could be an added module targeted at this issue.

In order for such formal online training to bridge Suzanne's learning gaps it would have to include several components. To address her knowledge gaps, the training would need to provide Suzanne exposure to populations that need expanded accessibility, so that her awareness can grow beyond her limited experience with the one learning disability of her son's dyslexia. In addition, learning more of *who* they are and *how* they struggle has the advantage of filling empathy gaps.

Suzanne wants to make a tangible difference in the learning of disadvantaged students, so she also requires practical skills. Training can empower her with actionable skills in universal design for creating instructional materials, selecting tools for content delivery, and designing online learning activities. Online training also has the advantage of being self-paced, so Suzanne can take the time she needs, and she can return and review the material as needed.

An obvious disadvantage is that training takes time. Even more, implementation of what you have been trained to do takes time, and that can decrease motivation. This needs to be taken into consideration when designing the training. A potential consequence is that other elements of the existing online course need to be removed to allow time for this added module.

Even so, a positive consequence is that Suzanne can anticipate having a professional and credible resource to promote to her colleagues with confidence.

Appendix A

Learner Persona Profile 2

Dr. Jacob Arnold – Ancient Near Eastern Studies Distinguished Professor – Denver Seminary

Discovery

Professor Jacob Arnold is a 34-year-old male whose life revolves around archeology of the Ancient Near East and most of his time is devoted to the subject, whether teaching graduate students, reading the latest journal articles or doing his own research. His education has been very traditional from elementary school through his doctoral program. He prefers to teach in the same environment he experienced but is slowly moving into online education due to student movement away from residential education into online. This is especially true for core classes in his discipline. While disappointed that all of his students cannot attend a traditional lecture environment, he is excited about the possibility of extending his expertise to a larger group of students from diverse backgrounds taking his courses online.



He understands that some elements of his courses will need to change to be taught online, but he is not sure about the specifics or the requirements from the educational technology department. He has not thought much about the specific learning needs of his students as he is still relatively new to teaching and has not yet needed to alter his teaching practices to accommodate any students, nor has he had any formal education about how to teach.

Immersion

Jacob has been a member of the Seminary faculty for 3 years and is one of four members of the Old Testament department. His schedule is full teaching a full load of classes, chairing a faculty committee, mentoring two students, and doing research for an upcoming book he is publishing. Outside of teaching, Jacob is also involved at his daughter's elementary school, volunteering monthly with the reading comprehension group. While relatively new to the institution, he is already highly respected and valued by his colleagues and the students he teaches.

He was recruited for his current role by the president of the seminary and is committed to all aspects of the values and goals of the institution. One of these values of the school is "accessibility". While committed to this value, there is not clarity about what this means in terms of classes that he teaches. He knows he wants his courses to be of the highest

scholarship and for all students to come away with a better understanding of the core elements of his discipline, addressing the institutional goal of academic rigor.

Connection

While Jacob is passionate about the subject matter he teaches, his teaching style lacks an interactive element, as he relies on lecture based content and minimal feedback on student papers and exams. This is to be expected, as this is how he has learned in all of his schooling. It is only after exposure and experimentation with other pedagogical tools and practices that a teacher can expand their teaching muscles. One of these knowledge and skills gaps for Jacob is his lack of exposure to creating online learning opportunities for students who need more accessible content due to a special learning need such as sight or hearing impairment.

Dr. Arnold also has an empathy gap in that he values the academic rigor of the institution to a fault. Because he has not worked with students who need accessible content explicitly, he perceives students who struggle as not up to the challenge of studying with him. He was raised with the concept that “you can achieve anything if you work hard enough” Although this did bode well for academically, he does recall having a degree of impatience for his peers who were underperformers. This has, he admits, carried over into his professional academic career. Students have witnessed him being overly-demanding, even for high achievers. So while he has voiced support of the institution addressing accessibility issues, this could be more of a theoretical standpoint than an intentional practice he has needed to implement into any of his classes. While he is not resistant to learning new ways to teach and create more accessible content, there has not yet been an inciting incident putting it on the front burner in place of other competing priorities for his time and attention.

Detachment

For this learner, the proposed learning solution is a formal online training that is required for faculty teaching online. This formal training on accessible design will be one module in a self-paced online skills mastery course for faculty designing and teaching online courses. This formal training will help address this learner’s skills gap by giving practical skills in universal design with accessibility in mind including creating instructional materials, selecting tools for content delivery, and planning and executing online learning activities.

Because of this learner’s motivational/empathy gap of not having a context of creating accessible online courses, this formal training should be emphasized by the school administration and take the opportunity to clarify how creating accessible online courses meets the goals of the institution and the role faculty have in advancing this goal.

This solution has the advantage of accountability for knowledge of accessibility issues in course design if Jacob does not implement accessible design features into his online courses. It also has the advantage of being a one-stop-shop for the best resources for Jacob to come back to and

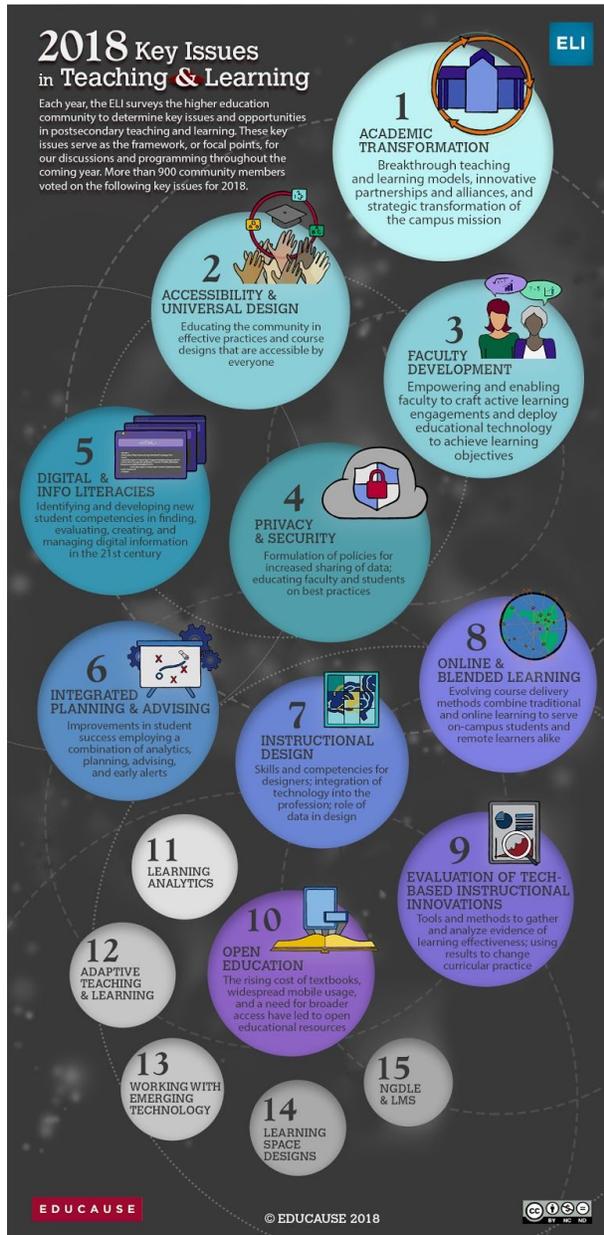
reference as he builds and teaches online courses. A potential disadvantage is that it does not directly address any hesitations he has about implementing accessible course design as it would be a more how-to guide rather than a personal apologetic for universal design. Another disadvantage is that to include this accessibility training into the online skills mastery course, something already included may need to be removed to keep the training course within the same time parameters.

Appendix B

Infographics

2018 Key Issues in Teaching and Learning: #2 Accessibility & Universal Design

<https://www.educause.edu/~media/images/educause/eli/elikeyissues2018.jpg?la=en>



Infographics - Web Accessibility at Denver Seminary [Jacki Soister, INTE 5711, 2018]

<https://infograph.venngage.com/ps/2Aau602lmTY/js-infographic-accessibility-final>



ACCESSIBILITY FOR STUDENT SUCCESS

What is Web Accessibility?

Web accessibility at Denver Seminary means that all students can access our online courses equally regardless of any visual, auditory, or cognitive impairment or disability.



Over 40 million Americans suffer from a disability. That is over 7 times the population of Colorado. (US Census Bureau, 2017)





PHYSICAL DISABILITIES
Visually impaired have difficulty seeing, ranging from color blindness to full blindness. Hearing impaired have difficulty hearing, ranging from certain sounds to complete deafness.



COGNITIVE DISABILITIES
Those with conditions such as Attention Deficit Disorder (ADD or ADHD) or Dyslexia struggle with concentration, reading comprehension, or processing information.

Some prospective students are unable to join our seminary community because parts of our course websites do not take advantage of assistive technologies that could make them accessible to everyone.

Assistive Technologies



One common technology used by those with disabilities is the screen reader that converts text on digital documents and web pages to audio. There are potentially 4 million visually impaired users of screen readers online in the US. ([source link](#))

Using the standards set by the W3C and many educational tools you are familiar with (PowerPoint, Word, Zoom, VoiceThread) we will transform our online courses to be fully accessible.



Hearing Impaired

Visually Impaired

Cognitive Disabilities
ADD, ADHD
Dyslexia

Link: [Accessibility Assistive Technologies symbol legend](#)

Why Web Accessibility?



STRATEGIC INITIATIVES 2017-2021:
"REACH: We commit ourselves and our resources to being a seminary that is impacting a broader spectrum of God's people with theological training."

That means ALL students -- even those with physical or cognitive disabilities!

Accessibility Training

Ready to Get Started? Click on the Online Skills Mastery (OSM) Course link below to go directly to our new Accessibility Module.



Infographics

Web Accessibility for Designers

<https://s3.amazonaws.com/ceblog/wp-content/uploads/2012/09/web-accessibility-for-designers-infogrphic.png>



Web Accessibility FOR Designers
Great web accessibility starts in the design.

- Plan Heading Structure Early**
Ensure all content and design fits into a logical heading structure.
- Consider Reading Order**
The reading order should be the same as the visual order.
- Good Bad**
Provide Good Contrast
Be especially careful with light shades of gray, orange, and yellow.
- Abc**
Use True Text Whenever Possible
True text enlarges better, loads faster, and is easier to translate. Use CSS to add visual style.
- CAPS!**
Watch the Use of CAPS
All caps can be difficult to read and can be read incorrectly by screen readers.
- 10pt+**
Use Adequate Font Size
Font size can vary based on the font chosen, but 10 point is usually a minimum.
- Abodefgj**
Remember Line Length
Don't make it too long or too short.
- Link**
Make Sure Links are Recognizable
Differentiate links in the body of the page with underlines or something other than color alone.
- Design Link Focus Indicators**
Ensure keyboard users can visually identify a focused link. Use the standard dotted line or other non-color designators.
- Skip**
Design a "Skip to Main Content" Link
A link for keyboard users to skip navigation should be at the top of the page. It can be hidden, but should be visible when it receives keyboard focus.
- Click Here**
Ensure Link Text Makes Sense on Its Own
Avoid "Click Here" in link text. Other ambiguous links, such as "More" or "Continue", can also be confusing.
- Use Animation, Video, and Audio Carefully**
If used, provide a play/pause button. Avoid flashing or strobing content: It can cause seizures.
- Don't Rely on Color Alone**
Because users often can't distinguish or may override page colors, color cannot be the only way information is conveyed.
- Design Accessible Form Controls**
Ensure form controls have descriptive labels and instructions. Pay close attention to form validation errors and recovery mechanisms.

© 2011 WebAIM
Web Accessibility in Mind
<http://webaim.org>

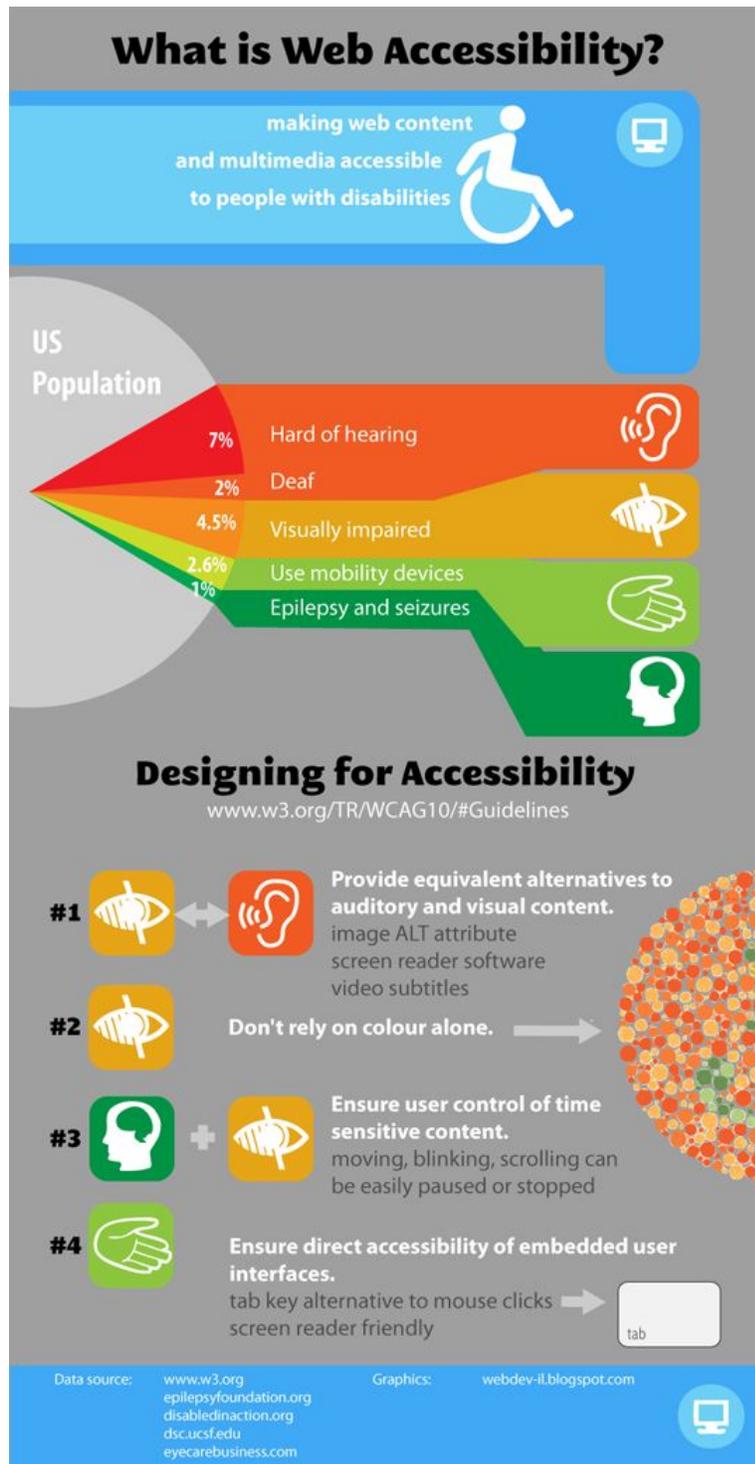
For a text version, visit:
webaim.org/resources/designers

Accessible text version of infographic: <http://throup.org.uk/infographic/>

Infographics

What is Web Accessibility [Infographic]

<http://designbeep.com/2012/01/24/5-infographics-on-web-accessibility-for-designers/>



Appendix C

Accessibility Instructional Videos

Accessibility tutorial: WC3 Intro

Introduction to Web Accessibility and WC3 Standards:

<https://www.youtube.com/watch?v=20SHvU2PKsM>



Introduction to Web Accessibility and W3C Standards

40,943 views

👍 243 💬 5 ➦ SHARE ⚙️ SAVE ⋮



W3C Web Accessibility Initiative (WAI)
Published on Dec 4, 2017

SUBSCRIBE 857

Subtitles are available in over 15 languages. You can change the language through the Settings icon, which is after the CC icon.
For more information, see:

* Accessibility - W3C <https://www.w3.org/standards/webdesig...> - for an overview of the Why, What, and How of web accessibility

* Web Accessibility Perspectives Videos: Explore the Impact and Benefits for Everyone <https://www.w3.org/WAI/perspectives/> - for videos and information on specific accessibility topics

* WAI website <https://www.w3.org/WAI/> - for a range of support material on web accessibility

Accessibility Instructional Videos

Accessibility tutorial: Visual Impairments

Screen Reader Demo: https://www.youtube.com/watch?v=q_ATY9gimOM



how to use a screen reader



Screen Reader Demo

10,031 views

45 1 SHARE SAVE ...



SLCC Universal Access
Published on Jun 10, 2016

SUBSCRIBE 10

Appendix D

Accessibility Instructional Materials

Design Considerations for Disabilities

Prepared and Provided by Kate Miller, Access and Usability Manager, Office of Information Technology, University of Colorado Denver, Anschutz Medical Campus

Blind

Design Consideration	Why?	Yes/No/Needs Improvement
All content must be presented in text or via a text equivalent (e.g., alt text for images or other non-text objects).	Screen readers cannot read non-text content (e.g., images) directly, but they can read alt text that you provide.	
All functionality must be available using only the keyboard (Note: be sure to test with the screen reader turned on, because there are subtle differences in keyboard behaviors when the screen reader is on).	Even though most blind users can physically use a mouse or trackpad, it doesn't do them much good because they can't see where the mouse pointer is. It is more effective for them to navigate by the keyboard.	
The content must use markup with good structure and semantics (headings, landmarks, tables, lists, etc.).	Screen reader users often pull up lists of headings, landmarks, and other semantic elements to help them understand what is on the page. They can also navigate by these elements (e.g., jump directly to the main content landmark, or to a specific heading).	
All custom controls (e.g., expand/collapse buttons, media	Unlike native HTML elements, custom controls have no	

<p>player volume control, dialogs, etc.) must have the correct name/label, role (either with HTML or with ARIA), and value, and must change value when appropriate (e.g., aria-expanded="false" changes to aria-expanded="true" after activating the button).</p>	<p>semantic parts natively, so screen readers can't tell users what the widget is, and can't update users on the properties of the widget unless you supply that information via ARIA names, roles, states, and properties.</p>	
<p>Users must receive immediate feedback after all actions, via their screen reader. Silence after activating a feature is always bad!</p>	<p>Examples of feedback: Expanded/collapsed region, value changed on a control (e.g., on a slider, successful/unsuccessful form submission, notification that a new "page" has loaded in single-page applications, etc.).</p>	
<p>Videos require audio descriptions (additional narration of visual content) if the video's original audio track (dialog, sounds, narration) does not explain everything that a person who is blind would need to know to understand the video.</p>	<p>Users who are blind can hear the dialog, narration, and other sounds in videos, but they can't see the visual parts of a video. So, if the visual parts convey important information, those parts will need to be described aloud for blind users to understand them.</p>	
<p>On mobile devices:</p> <ul style="list-style-type: none"> • All features require a click action. • Custom swipe actions on web pages will not work with the screen reader turned on. 	<p>When a blind screen reader user is on a mobile device, swipe actions are used by the screen reading software. All features (controls, widgets) on a mobile web page require a click action to work at all.</p>	

Low Vision

Design Consideration	Why?	Yes/No/Needs Improvement
<p>The pinch-to-zoom feature must not be disabled (avoid <code><meta name="viewport" content="userscalable=no"></code>)</p>	<p>When zooming is disabled on a web page, which the parameter (user scalable=no) does, low vision users who use screen magnifiers to read content may be unable to properly see information on a web page.</p>	
<p>All text must pass contrast guidelines against the background (verify using Deque's aXe accessibility browser extension or a similar tool).</p>	<p>Some users who have low vision may see in low contrast. So, text, borders, and other elements may appear as the same or similar shades of brightness to them. Textual elements that are too close in brightness to background colors may be extremely difficult to read for these users.</p>	
<p>Links, buttons, and controls must have a visible <code>:focus</code> state and should have a visible <code>:hover</code> state.</p>	<p>Some low vision users may use a keyboard or a mouse, or both, as input methods. Having visible <code>:focus</code> and <code>:hover</code> states helps users to know where the keyboard/mouse focus is on a web page. The default browser <code>:focus</code> state is acceptable per the WCAG guidelines, but users with low vision benefit greatly from enhanced CSS <code>:focus</code> and <code>:hover</code> states.</p>	
<p>The user interface should provide a clear visual distinction between content (e.g., text) and controls (e.g., buttons, links, etc.).</p>	<p>Again, users who may see in low contrast may have difficulty distinguishing whether controls are actionable on a web page because these elements may blend together with surrounding text and background colors.</p>	

Color-blind

Design Consideration	Why?	Yes/No/Needs Improvement
All information must be understandable without needing to distinguish between colors. Reds and greens are especially problematic when used as the only way to convey information.	When colors alone are the only methods being used to communicate important information on a web page, people who are colorblind may miss that information altogether. In addition to color, consider using text and symbols as means to convey information.	

Deaf and Hard-of-Hearing

Design Consideration	Why?	Yes/No/Needs Improvement
All videos must have captions.	Without captions, people who are deaf may miss critical information communicated through dialog and narration, and may miss important sounds that give meaning to the video.	
All audio-only content must have transcripts.	Transcripts are necessary to convey all of the information being communicated by audio, including dialogue (and identifying speakers), narration, musical cues, and sound effects.	
Sign language interpretation of videos can be very helpful.	There are some people who are deaf whose primary means of communication is sign language. For this group, sign language interpretation may be preferred over captions and transcripts.	

Deafblind

Design Consideration	Why?	Yes/No/Needs Improvement
All of the considerations for blindness apply.	Like people who are blind, people who are deafblind use a screen reader as an output device. But instead of relying on audio output, a refreshable braille output device is used so people who are deafblind can read content by touch.	
All of the considerations for deafness apply.	All of the considerations for deafness apply in the sense that an alternative means to access audio content should be provided, particularly in a text-based format.	
In addition, a transcript must be provided for audio and video content.	Transcripts are the only way a person who is deafblind will be able to access all of the information communicated in audio and video formats.	

Dexterity/Motor Disabilities

Design Consideration	Why?	Yes/No/Needs Improvement
All functionality must be available using only the keyboard.	For sighted keyboard users or those who use devices that emulate keyboards, everything that can be done on a web page with a mouse should be able to be done using only a keyboard. People with motor disabilities may not have the fine motor skills	

	required to use a mouse.	
Links, buttons, and controls must have a visible <code>:focus</code> state and should have a visible <code>:hover</code> state	The only way sighted keyboard users are aware of the current location of the keyboard focus is by a visible <code>:focus</code> state. If focus is turned off, interaction on a web page for these users may be extremely difficult and nearly impossible. The default browser <code>:focus</code> state is acceptable per the WCAG guidelines, but like low vision users, sighted keyboard users can benefit greatly from enhanced CSS <code>:focus</code> and <code>:hover</code> states.	
With session time-outs, warn users before the time expires (e.g., an accessible dialog or alert), and give them the option to extend the session. Ensure the warning itself allows for slow responses. A recommended minimum response time is 2 minutes.	People who have motor disabilities need more time to enter information into a web page. So, it is important that they are given sufficient time and options to extend time limits.	
Provide large click targets (links, buttons, controls) for users who have movements that are difficult to control.	People who may have tremors or spasms need to be able to activate targets on a web page. Increasing the target area for these users can help maximize their chances of accurately selecting the target on the web page.	

Speech Disabilities

Design Consideration	Why?	Yes/No/Needs Improvement
<p>Don't depend on voice input (e.g., in mobile apps, custom widgets, games, etc.).</p>	<p>People with speech disabilities have difficulty with producing voice sounds and using muscles in their mouths, so it is critical that alternative means of communication are provided such as text chats, forms, email, etc</p>	

Cognitive Disabilities

Design Consideration	Why?	Yes/No/Needs Improvement
<p>For users with lower comprehension:</p> <ul style="list-style-type: none"> • Simplify the interface as much as possible. • Simplify the content as much as possible. • Keep videos and audio as short as possible. • Limit the number of choices on the screen. • Provide help features. • Design for ease of use. • Test the usability of the interface with actual users, preferably including users with cognitive disabilities. -Be careful with movement and other distractions -Focus on important content -Use good organization - headers, lists, etc. 	<p>Users who have lower comprehension will have a better web experience if the interface and content are easy to use and easy to understand. Too many options and complex information may be difficult for them to process.</p>	

<p>For users with memory loss:</p> <ul style="list-style-type: none"> • Retain information across screens, and within a path. • Provide help features. 	<p>A website that has predictability across all its pages (same navigation, same structure, etc.) will greatly benefit users with memory loss. Sites that are too complicated may fatigue users with memory loss. If a user has difficulty interacting with the web page, help features can assist them with navigating the web page.</p>	
<p>For users with distractibility:</p> <ul style="list-style-type: none"> • Reduce or eliminate distractions (be careful with ads, carousels, intrusive audio, intrusive video, etc.). 	<p>Too many distractions on a web page may cause people with cognitive disabilities to miss important information being conveyed on a web page. Distractions may cause them to lose focus or overwhelm them, and users may navigate from the web page.</p>	

Reading Disabilities

Design Considerations	Why?	Yes/No/Needs Improvement
<p>For users with difficulty reading (dyslexia, etc.):</p> <ul style="list-style-type: none"> • Supplement text with illustrations, videos, audio, etc. • Avoid the highest level of contrast for text against background (e.g., black on white) BUT be sure to stay within the contrast range that people with low vision need. 	<p>People who have difficulty reading text will need the information conveyed in other formats like images, audio, and video. Using the highest contrast may also be difficult for people to read and hard on the eyes, so using colors that are a slight step down in contrast (e.g., dark grey against white or off-white) may make reading text a little easier.</p>	

Accessibility Instructional Materials

Instructional Content Scorecard

Prepared and Provided by Kate Miller, Access and Usability Manager, Office of Information Technology, University of Colorado Denver, Anschutz Medical Campus

Accessibility - Content pages

What is Accessibility?

'Accessible' means a person with a disability is afforded the opportunity to acquire the same information, engage in the same interactions, and enjoy the same services as a person without a disability in an equally effective and equally inclusive manner, with substantially equivalent ease of use.

Incomplete	Aligned
<p>Heading Styles:</p> <p>Content Pages do not use heading styles or use them inconsistently, including skipping heading levels, and/or altered fonts/size/format/ color are used instead of heading styles.</p> <p><i>Fix:</i> General Accessibility Guidelines in Canvas</p> <p>Using headings correctly</p>	<p>Heading styles:</p> <p>Content Pages consistently use heading styles (i.e. Heading 2, Heading 3, etc.).</p>
<p>Lists:</p> <p>Numbers, letters, or symbols are manually inserted to create a list.</p> <p><i>Fix:</i> Using Lists Correctly</p>	<p>Lists:</p> <p>Lists are created using the Bullet or Numbered List tool in the rich text editor.</p>
<p>Links:</p> <p>Links are not descriptive, or URLs are</p>	<p>Links:</p> <p>Links are descriptive, and avoid</p>

<p>displayed instead of meaningful links (words are used to describe where the link is going to take them - ie, "NCAA Basketball Championship results;" and/or underlining is used for emphasis or for denoting headings.</p> <p>Fix: Using Links Correctly</p>	<p>redundancy; links avoid using non-descriptive phrases; and underlining is only used to denote active hyperlinks.</p>
<p>Tables: Tables do not use designated header cells.</p> <p>Fix: Creating Accessible Tables Building tables using the Rich Content Editor in Canvas.</p>	<p>Tables: Table cells designated as row and/or column headers allow screen readers to read table cells in the correct order.</p>
<p>Color Contrast: Insufficient color contrast between foreground (text or graphics) and the background could create difficulties for low vision and color blind students.</p> <p>Fix: Color Contrast Checker</p>	<p>Color Contrast: There is sufficient color contrast between foreground and background to meet Section 508 standards.</p>
<p>Color and Meaning: Visual elements alone have been used to convey meaning.</p> <p>Fix: Using Color in an Accessible Way</p>	<p>Color and Meaning: Visual elements (color, bolding, all caps) are not used as the sole way to convey importance or meaning.</p>
<p>Images: Does not consistently use descriptive alternative text, or the image has text that is not part of the alternative description, or uses "image of" or "picture of" as part of the alt text.</p> <p>Fix: Accessible Images</p>	<p>Images: Every image (including those used in Pages, Discussions, Quizzes and Assignments) uses descriptive alternative text that includes any text visible in the image, does not contain "image of" or "picture of", and uses "" if the image is purely decorative.</p>
<p>Syllabus: Accessible template has not been used.</p> <p>Fix: email Kate Miller for template</p>	<p>Syllabus: Accessible template has been used.</p>

Accessibility - Files

Incomplete	Aligned
<p>Digital Reading Order: Reading order is not correctly set so that content is presented in the proper sequence to screen readers and other assistive technologies.</p> <p><i>Fix:</i> Designing Content for Screen Readers</p>	<p>Digital Reading Order: Reading order is correctly set so that content is presented in the proper sequence to screen readers and other assistive technologies.</p>
<p>Digital presentations: Some slides have identical titles, reading order is not properly set (slides have had elements added to the layout), and/or images/charts do not include alternative text. Some text visible in slides is not visible in Outline View.</p> <p><i>Fix:</i> Accessible PowerPoints</p>	<p>Digital presentations: Every slide has a unique title, reading order is properly set (slides use pre-set layouts), and all images/charts include alternative text. All text is visible in Outline View so that it can be read by assistive technology.</p>
<p>PDFs: PDFs contain accessibility issues and do not pass the Adobe Accessibility Check.</p> <p><i>Fix:</i> Creating Accessible PDFs</p>	<p>PDFs: PDFs pass the Adobe Accessibility Check with no substantial errors.</p>
<p>Spreadsheets: Spreadsheets lack labels and supplemental explanations that would allow a student with visual or motor impairment to make use of the content using assistive technologies.</p> <p>Fix: Creating Accessible Spreadsheets</p>	<p>Spreadsheets: Spreadsheets include labels for the rows and columns, detailed labels for any charts, and is accompanied by a textual description of the spreadsheet, drawing attention to key cells, trends, and totals.</p>

Accessibility – Multimedia

Incomplete	Aligned
<p>Audio/Video: Accurate transcripts are not included for audio and/or closed captioning for video is not present.</p> <p>Fix: How to Create Captions</p>	<p>Audio/Video: Instructional Materials Inventory: Accurate transcripts are included for audio, closed captioning for video, and narrative descriptions are available when possible.</p>
<p>Live Broadcast: Live broadcasts do not have synchronized captions.</p> <p>Fix: Captioning Best Practices</p>	<p>Live Broadcast: Live broadcasts include a means for displaying synchronized captions (Synchronized captions, such as the display of text for audio at the same time it is spoken, are important so people who cannot hear or who are hard of hearing will derive the full meaning of the content.).</p>
<p>Auto-play: Multimedia is set to auto-play.</p> <p>Fix: While most browsers do not include easily reached settings to stop the autoplay videos, you do have some workarounds. For Google Chrome, one option is to go to the online Chrome Web Store and search for the free Disable HTML5 Autoplay extension.</p>	<p>Auto-play: Multimedia is NOT set to auto-play, as that will not allow the user to control when the video plays.</p>
<p>Flashing Content: Contains blinking or strobing multimedia.</p> <p>Fix: Avoiding flashing content</p>	<p>Flashing Content: Multimedia (including gifs and images) do not blink or strobe.</p>