READY Education

Designing for Accessibility

A guide detailing Ready Education's compliance with 508 through VPAT, WCAG 2.0 and Leading Industry Standards for Mobile Interface Design

Table of Contents

Ready Education and Accessibility

Ready Education is the leading mobile platform for campus life in North America. Since its inception, Ready Education has been a leader in shaping the way that mobile technologies are used in higher education. Part of this goal is to ensure that everyone on campus has access to the same software and technology. Sharing this goal is the ADA (Americans with Disabilities Act). The ADA has set guidelines to ensure vendors make their products accessible to those with disabilities. Since Ready Education provides mobile and web software to administrators and students, the parts of ADA compliancy that relate to software interface are of highest importance. This document will detail the current standards of web and mobile design interface and state how Ready Education's technology satisfies the required guidelines set forth by the ADA and other organizations prioritizing the accessibility of software (such as W3C).

What is the ADA?

The Americans with Disabilities Act (ADA) was signed into law on July 26, 1990, by President George H.W. Bush. The ADA is one of America's most comprehensive pieces of civil rights legislation that prohibits discrimination and guarantees that people with disabilities have the same opportunities as everyone else to participate in the mainstream of American life -- the ADA is an "equal opportunity" law for people with disabilities. (***http://www.ada.gov***, 2015)

The Department of Justice's revised regulations for Titles II and III of the Americans with Disabilities Act of 1990 (ADA) were published in the Federal Register on September 15, 2010. These regulations adopted revised, enforceable accessibility standards called the **2010 ADA Standards for Accessible Design**, "2010 Standards." These standards state that all electronic and information technology must be accessible to people with disabilities.

How does a company comply with ADA?

The ADA encourages self-regulation of accessibility standards and the Department of Justice is currently developing regulations to provide specific guidance to the entities covered by the ADA. Organizations are encouraged to use Section 508 (an amendment to the Rehabilitation Act of 1973) VPAT and WCAG 2.0 level AA guidelines as a guide on how to design accessible technological interfaces until the department of justice defines the regulations.

508 Compliance

The US Rehabilitation Act of 1973 was amended in 1986 and again in 1998 to include all information technology, including computer hardware, software and documentation. Typically vendors must supply a completed Voluntary Product Accessibility Template (VPAT) for section 508 Compliance. A complete VPAT form can be found in Appendix A. It details the supported and applicable aspects of their accessibility guidelines and information on how this is achieved for the Ready platform (web and mobile interfaces).

WCAG 2.0

The World Wide Web Consortium (W3C) sets the main international standards for the World Wide Web and its accessibility. W3C created the Web Content Accessibility Guidelines (WCAG 2.0) which are similar to Section 508, but on an international level. WCAG 2.0 requires specific techniques for compliance and is more current than Section 508. Most institutions are encouraged by the ADA to have a level of compliance equal to or greater than "AA".

Here is a quick overview of what WCAG 2.0 deems important for accessible design:

Perceivable

- Provide **text alternatives** for non-text content.
- Provide **captions and other alternatives** for multimedia.
- Create content that can be **presented in different ways**, including by assistive technologies, without losing meaning.
- Make it easier for users to **see and hear content**.

Operable

- Make all functionality available from a **keyboard**.
- Give users **enough time** to read and use content.
- Do not use content that causes **seizures**.
- Help users **navigate and find content**.

Understandable

- Make text **readable and understandable**.
- Make content appear and operate in **predictable** ways.
- Help users **avoid and correct mistakes**.

Robust

- Maximize **compatibility** with current and future user tools.

All web development including interface design and implementation is tested against these guidelines to ensure accessibility and the best user experience. For a detailed view of what the Ready Education web based technology supports please refer to Appendix B in which an itemized list of WCAG 2.0 accessibility criteria are listed. The WCAG compliance document was created based on the criteria from the W3C accessibility guide, which can be found here: ***http://www.w3.org/TR/WCAG20/***. Ready Education's compliance and further clarifications on how and criterion is satisfied is listed in the compliance document in Appendix B.

Accessible Design for Mobile Content

As mobile applications are recent formats for consuming content (relative to web and traditional print) there are few organizations that have specific guidelines for accessible mobile design. The leaders in this space are Apple and Google and both companies have guidelines and built in tools for developers to leverage to make their apps more accessible to those with disabilities. You can find more information about their respective guidelines and tools here:

https://www.apple.com/ca/accessibility/ios/ and
https://www.google.ca/accessibility/for-developers.html.

The mobile developers at Ready Education take advantage of many of the features that are available through the operating system such as Google Talk Back or iOS VoiceOver (screen reading technology), color inversion, text size increase, speech to text and text to speech.

For a detailed analysis of the features the Ready Education apps support please refer to the Accessibility Guidelines for Ready Education apps in Appendix C. The mobile accessibility guidelines are based on the standards set by Apple and Google and WCAG and are separated in 3 sections. The first section is the base of what should be partially or fully implemented, while the second section is suggested and third section should be considered and addressed based on need. Ready Education complies in part or fully with nearly the entire guide and the apps are tested for usability and quality of experience for those with disabilities. The goal is that every new release of the applications (for both iOS and Android) are usable with a screen re ader or equivalent assistive technologies.

Support

Ready Education bases the success of the app and platform on our relationship with the institution. An app that fully encompasses student life cannot be possible without campus involvement and as such Ready Education does whatever we can to ensure a functional mutually beneficial relationship with all our customers. We will work with you to ensure all your students can access the app content and we encourage you to find students on your campus with disabilities to test the app to ensure it is usable.

Points of contact:

Dimitri Policerakis
Lead Engineer
Dimitri@readyeducation.com

Appendix A

Complete 508 VPAT form (next 15 pages)

VPAT™

Voluntary Product Accessibility Template®

Version 1.3

The purpose of the **Voluntary Product Accessibility Template**, or **VPAT™**, is to assist Federal contracting officials and other buyers in making preliminary assessments regarding the availability of commercial "Electronic and Information Technology" products and services with features that support accessibility. It is assumed and recommended that offerers will provide additional contact information to facilitate more detailed inquiries.

The first table of the Template provides a summary view of the Section 508 Standards. The subsequent tables provide more detailed views of each subsection. There are three columns in each table. Column one of the Summary Table describes the subsections of subparts B and C of the Standards. The second column describes the supporting features of the product or refers you to the corresponding detailed table, e.g., "equivalent facilitation." The third column contains any additional remarks and explanations regarding the product. In the subsequent tables, the first column contains the lettered paragraphs of the subsections. The second column describes the supporting features of the product with regard to that paragraph. The third column contains any additional remarks and explanations regarding the product.

Date:
Name of Product:
Contact for more Information (name/phone/email):

Summary Table

VPAT™

Voluntary Product Accessibility Template®

Criteria	Supporting Features	Remarks and explanations
Section 1194.21 Software Applications and Operating Systems		
Section 1194.22 Web-based Internet Information and Applications		
Section 1194.23 Telecommunications Products		
Section 1194.24 Video and Multi-media Products		
Section 1194.25 Self-Contained, Closed Products		
Section 1194.26 Desktop and Portable Computers		
Section 1194.31 Functional Performance Criteria		
Section 1194.41 Information, Documentation and Support		

Return to the top of the page.

Section 1194.21 Software Applications and Operating Systems – Detail

VPAT™

Voluntary Product Accessibility Template®

Criteria	**Supporting Features**	**Remarks and explanations**
(a) When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually.	Supported	
(b) Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.	Supported	
(c) A well-defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be programmatically exposed so that Assistive Technology can track focus and focus changes.	Supported	
(d) Sufficient information about a user interface element including the identity, operation and state of the element shall be available to Assistive Technology. When an image represents a program element, the information conveyed by the image must also be available in text.	Supported	
(e) When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.	Supported	
(f) Textual information shall be provided through operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes.	Supported	

(g) Applications shall not override user selected contrast and color selections and other individual display attributes.	Supported	
(h) When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.	Supported	
(i) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.	Supported	Some aspects of the user interface use colors as visual cues but only as a secondary method to convey information
(j) When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels shall be provided.	Supported	
(k) Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.	Supported	
(l) When electronic forms are used, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.	Supported	

Return to the top of the page.

Section 1194.22 Web-based Internet information and applications – Detail

VPAT™

Voluntary Product Accessibility Template®

Criteria	**Supporting Features**	**Remarks and explanations**
(a) A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).	Supported	
(b) Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.	Supported	
(c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.	Supported	
(d) Documents shall be organized so they are readable without requiring an associated style sheet.	Supported	
(e) Redundant text links shall be provided for each active region of a server-side image map.	Supported	
(f) Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.	Supported	
(g) Row and column headers shall be identified for data tables.	Supported	
(h) Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.	Supported	
(i) Frames shall be titled with text that facilitates frame identification and navigation	Supported	
(j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.	Supported	

(k) A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.	Not Supported	
(l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by Assistive Technology.	Supported	
(m) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with §1194.21(a) through (l).	Supported	
(n) When electronic forms are designed to be completed on-line, the form shall allow people using Assistive Technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.	Supported	
(o) A method shall be provided that permits users to skip repetitive navigation links.	Supported	Pages support deep linking and browser favoriting
(p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.	Supported	

Note to 1194.22: The Board interprets paragraphs (a) through (k) of this section as consistent with the following priority 1 Checkpoints of the Web Content Accessibility Guidelines 1.0 (WCAG 1.0) (May 5 1999) published by the Web Accessibility Initiative of the World Wide Web Consortium: Paragraph (a) - 1.1, (b) - 1.4, (c) - 2.1, (d) - 6.1, (e) - 1.2, (f) - 9.1, (g) - 5.1, (h) - 5.2, (i) - 12.1, (j) - 7.1, (k) - 11.4.

Return to the top of the page.

Section 1194.23 Telecommunications Products – Detail

VPAT™

Voluntary Product Accessibility Template®

Criteria	Supporting Features	Remarks and explanations
(a) Telecommunications products or systems which provide a function allowing voice communication and which do not themselves provide a TTY functionality shall provide a standard non-acoustic connection point for TTYs. Microphones shall be capable of being turned on and off to allow the user to intermix speech with TTY use.	Not Applicable	
(b) Telecommunications products which include voice communication functionality shall support all commonly used cross-manufacturer non-proprietary standard TTY signal protocols.	Not Applicable	
(c) Voice mail, auto-attendant, and interactive voice response telecommunications systems shall be usable by TTY users with their TTYs.	Not Applicable	
(d) Voice mail, messaging, auto-attendant, and interactive voice response telecommunications systems that require a response from a user within a time interval, shall give an alert when the time interval is about to run out, and shall provide sufficient time for the user to indicate more time is required.	Not Applicable	
(e) Where provided, caller identification and similar telecommunications functions shall also be available for users of TTYs, and for users who cannot see displays.	Not Applicable	
(f) For transmitted voice signals, telecommunications products shall provide a gain adjustable up to a minimum of 20 dB. For incremental volume control, at least one	Not Applicable	

intermediate step of 12 dB of gain shall be provided.		
(g) If the telecommunications product allows a user to adjust the receive volume, a function shall be provided to automatically reset the volume to the default level after every use.	Not Applicable	
(h) Where a telecommunications product delivers output by an audio transducer which is normally held up to the ear, a means for effective magnetic wireless coupling to hearing technologies shall be provided.	Not Applicable	
(i) Interference to hearing technologies (including hearing aids, cochlear implants, and assistive listening devices) shall be reduced to the lowest possible level that allows a user of hearing technologies to utilize the telecommunications product.	Not Applicable	
(j) Products that transmit or conduct information or communication, shall pass through cross-manufacturer, non-proprietary, industry-standard codes, translation protocols, formats or other information necessary to provide the information or communication in a usable format. Technologies which use encoding, signal compression, format transformation, or similar techniques shall not remove information needed for access or shall restore it upon delivery.	Not Applicable	
(k)(1) Products which have mechanically operated controls or keys shall comply with the following: Controls and Keys shall be tactilely discernible without activating the controls or keys.	Not Applicable	
(k)(2) Products which have mechanically operated controls or keys shall comply with the following: Controls and Keys shall be operable with one hand and shall not require tight grasping, pinching, twisting of the wrist. The force required to activate controls and keys shall be 5 lbs. (22.2N) maximum.	Not Applicable	
(k)(3) Products which have mechanically operated controls or keys shall comply with the following: If key repeat is supported, the delay before repeat shall be adjustable to at least 2 seconds. Key repeat rate shall be adjustable to 2 seconds per character.	Not Applicable	
(k)(4) Products which have mechanically operated controls or keys shall comply with the following: The status of all locking or toggle controls or keys shall be visually	Not Applicable	

discernible, and discernible either through touch or sound.		

Return to the top of the page.

Section 1194.24 Video and Multi-media Products – Detail

VPAT™

Voluntary Product Accessibility Template®

Criteria	**Supporting Features**	**Remarks and explanations**
a) All analog television displays 13 inches and larger, and computer equipment that includes analog television receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals. As soon as practicable, but not later than July 1, 2002, widescreen digital television (DTV) displays measuring at least 7.8 inches vertically, DTV sets with conventional displays measuring at least 13 inches vertically, and stand-alone DTV tuners, whether or not they are marketed with display screens, and computer equipment that includes DTV receiver or display circuitry, shall be equipped with caption decoder circuitry which appropriately receives, decodes, and displays closed captions from broadcast, cable, videotape, and DVD signals.	Not Applicable	
(b) Television tuners, including tuner cards for use in computers, shall be equipped with secondary audio program playback circuitry.	Not Applicable	

(c) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain speech or other audio information necessary for the comprehension of the content, shall be open or closed captioned.	Not Applicable	All training information is either distributed digitally in text documents or over the phone
(d) All training and informational video and multimedia productions which support the agency's mission, regardless of format, that contain visual information necessary for the comprehension of the content, shall be audio described.	Not Applicable	All training information is either distributed digitally in text documents or over the phone
(e) Display or presentation of alternate text presentation or audio descriptions shall be user-selectable unless permanent.	Not Applicable	

Return to the top of the page.

Section 1194.25 Self-Contained, Closed Products – Detail

VPAT™

Voluntary Product Accessibility Template®

Criteria	**Supporting Features**	**Remarks and**

		explanations
(a) Self contained products shall be usable by people with disabilities without requiring an end-user to attach Assistive Technology to the product. Personal headsets for private listening are not Assistive Technology.	Not Applicable	
(b) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.	Not Applicable	
(c) Where a product utilizes touchscreens or contact-sensitive controls, an input method shall be provided that complies with §1194.23 (k) (1) through (4).	Not Applicable	
(d) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.	Not Applicable	
(e) When products provide auditory output, the audio signal shall be provided at a standard signal level through an industry standard connector that will allow for private listening. The product must provide the ability to interrupt, pause, and restart the audio at anytime.	No auditory output is used	
(f) When products deliver voice output in a public area, incremental volume control shall be provided with output amplification up to a level of at least 65 dB. Where the ambient noise level of the environment is above 45 dB, a volume gain of at least 20 dB above the ambient level shall be user selectable. A function shall be provided to automatically reset the volume to the default level after every use.	Not Applicable	
(g) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.	Supported	
(h) When a product permits a user to adjust color and contrast settings, a range of color selections capable of producing a variety of contrast levels shall be provided.	Supported	
(i) Products shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.	Supported	

(j) (1) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: The position of any operable control shall be determined with respect to a vertical plane, which is 48 inches in length, centered on the operable control, and at the maximum protrusion of the product within the 48 inch length on products which are freestanding, non-portable, and intended to be used in one location and which have operable controls.	Not Applicable	
(j)(2) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: Where any operable control is 10 inches or less behind the reference plane, the height shall be 54 inches maximum and 15 inches minimum above the floor.	Not Applicable	
(j)(3) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: Where any operable control is more than 10 inches and not more than 24 inches behind the reference plane, the height shall be 46 inches maximum and 15 inches minimum above the floor.	Not Applicable	
(j)(4) Products which are freestanding, non-portable, and intended to be used in one location and which have operable controls shall comply with the following: Operable controls shall not be more than 24 inches behind the reference plane.	Not Applicable	

Return to the top of the page.

Section 1194.26 Desktop and Portable Computers – Detail

VPAT™

Voluntary Product Accessibility Template®

Criteria	**Supporting Features**	**Remarks and explanations**
(a) All mechanically operated controls and keys shall comply with §1194.23 (k) (1) through (4).	Not Applicable	
(b) If a product utilizes touchscreens or touch-operated controls, an input method shall be provided that complies with §1194.23 (k) (1) through (4).	Not Applicable	
(c) When biometric forms of user identification or control are used, an alternative form of identification or activation, which does not require the user to possess particular biological characteristics, shall also be provided.	Not Applicable	
(d) Where provided, at least one of each type of expansion slots, ports and connectors shall comply with publicly available industry standards	Not Applicable	

Return to the top of the page.

Section 1194.31 Functional Performance Criteria – Detail

VPAT™

Voluntary Product Accessibility Template®

Criteria	**Supporting Features**	**Remarks and explanations**
(a) At least one mode of operation and information retrieval that does not require user	Supported	

vision shall be provided, or support for Assistive Technology used by people who are blind or visually impaired shall be provided.		
(b) At least one mode of operation and information retrieval that does not require visual acuity greater than 20/70 shall be provided in audio and enlarged print output working together or independently, or support for Assistive Technology used by people who are visually impaired shall be provided.	Supported	
(c) At least one mode of operation and information retrieval that does not require user hearing shall be provided, or support for Assistive Technology used by people who are deaf or hard of hearing shall be provided	Supported	
(d) Where audio information is important for the use of a product, at least one mode of operation and information retrieval shall be provided in an enhanced auditory fashion, or support for assistive hearing devices shall be provided.	Not Applicable	
(e) At least one mode of operation and information retrieval that does not require user speech shall be provided, or support for Assistive Technology used by people with disabilities shall be provided.	Supported	
(f) At least one mode of operation and information retrieval that does not require fine motor control or simultaneous actions and that is operable with limited reach and strength shall be provided.	Supported	

Return to the top of the page.

Section 1194.41 Information, Documentation and Support – Detail

VPAT™

Voluntary Product Accessibility Template®

Criteria	**Supporting Features**	**Remarks and explanations**
(a) Product support documentation provided to end-users shall be made available in alternate formats upon request, at no additional charge	Supported	
(b) End-users shall have access to a description of the accessibility and compatibility features of products in alternate formats or alternate methods upon request, at no additional charge.	Supported	
(c) Support services for products shall accommodate the communication needs of end-users with disabilities.	Supported	

Return to the top of the page.

Appendix B

WCAG 2.0 Compliance

WCAG 2.0 Compliance

Perceivable

Web content is made available to the senses - sight, hearing, and/or touch

Success Criteria	Recommendation	Ready Education
1.1.1 Non-text Content (Level A)	All images, form image buttons, and image map hot spots have appropriate, equivalent alternative text.	Satisfied
	Images that do not convey content, are decorative, or contain content that is already conveyed in text are given null alt text (alt="") or implemented as CSS backgrounds. All linked images have descriptive alternative text.	Satisfied
	Equivalent alternatives to complex images are provided in context or on a separate (linked and/or referenced via longdesc) page.	Satisfied
	Form buttons have a descriptive value.	Satisfied
	Form inputs have associated text labels.	Satisfied, placeholders are also used to indicate context
	Embedded multimedia is identified via accessible text.	Satisfied
	Frames are appropriately titled.	Satisfied
1.2.1 Prerecorded Audio-only and Video-only (Level A)	A descriptive text transcript (including all relevant visual and auditory clues and indicators) is provided for non-live, web-based audio (audio podcasts, MP3 files, etc.).	Satisfied
	A text or audio description is provided for non-live, web-based video-only (e.g., video that has no audio track).	Satisfied
1.2.2 Captions (Prerecorded) (Level A)	Synchronized captions are provided for non-live, web-based video (YouTube videos, etc.)	Satisfied
1.2.3 Audio Description or Media Alternative (Prerecorded) (Level A)	A descriptive text transcript or audio description audio track is provided for non-live, web-based video	Satisfied
1.2.4 Captions (Live) (Level AA)	Synchronized captions are provided for all live multimedia that contains audio (audio-only broadcasts, web casts, video conferences, Flash animations, etc.)	Satisfied

1.2.5 Audio Description (Prerecorded) (Level AA)	Audio descriptions are provided for all video content. NOTE: Only required if the video conveys content visually that is not available in the default audio track.	Satisfied
1.2.6 Sign Language (Prerecorded) (Level AAA)	A sign language video is provided for all media content that contains audio.	Not satisfied, but video content is not necessary for to be able to use the software and is meant as bonus instructional material
1.2.7 Extended Audio Description (Prerecorded) (Level AAA)	When an audio description track cannot be added to video due to audio timing (e.g., no pauses in the audio), an alternative version of the video with pauses that allow audio descriptions is provided.	Satisfied
1.2.8 Media Alternative (Prerecorded) (Level AAA)	A descriptive text transcript is provided for all pre-recorded media that has a video track.	Satisfied
1.2.9 Audio-only (Live) (Level AAA)	A descriptive text transcript (e.g., the script of the live audio) is provided for all live content that has audio.	Satisfied
1.3.1 Info and Relationships (Level A)	Semantic markup is used to designate headings (<h1>), lists (, , and <dl>), emphasized or special text (, <code>, <abbr>, <blockquote>, for example), etc. Semantic markup is used appropriately.	Satisfied
	Tables are used for tabular data. Where necessary, data cells are associated with their headers. Data table captions and summaries are used where appropriate.	Satisfied
	Text labels are associated with form input elements. Related form elements are grouped with fieldset/legend.	Satisfied
1.3.2 Meaningful Sequence (Level A)	The reading and navigation order (determined by code order) is logical and intuitive.	Satisfied
1.3.3 Sensory Characteristics (Level A)	Instructions do not rely upon shape, size, or visual location (e.g., "Click the square icon to continue" or "Instructions are in the right-hand column").	Satisfied
	Instructions do not rely upon sound (e.g., "A beeping sound indicates you may continue.").	Satisfied

1.4.1 Use of Color (Level A)	Color is not used as the sole method of conveying content or distinguishing visual elements.	Satisfied
	Color alone is not used to distinguish links from surrounding text unless the luminance contrast between the link and the surrounding text is at least 3:1 and an additional differentiation (e.g., it becomes underlined) is provided when the link is hovered over or receives focus.	Satisfied
1.4.2 Audio Control (Level A)	A mechanism is provided to stop, pause, mute, or adjust volume for audio that automatically plays on a page for more than 3 seconds.	Satisfied
1.4.3 Contrast (Minimum) (Level AA)	Text and images of text have a contrast ratio of at least 4.5:1.	Satisfied
	Large text (over 18 point or 14 point bold) has a contrast ratio of at least 3:1	Satisfied
1.4.4 Resize text (Level AA)	The page is readable and functional when the text size is doubled.	Satisfied, some aesthetics may need correction but software is usable
1.4.5 Images of Text (Level AA)	If the same visual presentation can be made using text alone, an image is not used to present that text.	Satisfied
1.4.6 Contrast (Enhanced) (Level AAA)	Text and images of text have a contrast ratio of at least 7:1.	Satisfied
	Large text (over 18 point or 14 point bold) has a contrast ratio of at least 4.5:1	Satisfied
1.4.7 Low or No Background Audio (Level AAA)	Audio of speech has no or very low background noise so the speech is easily distinguished.	Satisfied
1.4.8 Visual Presentation (Level AAA)	Blocks of text over one sentence in length:	Satisfied
	Are no more than 80 characters wide.	Satisfied
	Are NOT fully justified (aligned to both the left and the right margins).	Satisfied
	Have adequate line spacing (at least 1/2 the height of the text) and paragraph spacing (1.5 times line spacing).	Satisfied
	Have a specified foreground and background color. These can be applied to specific elements or to the page as a whole using CSS (and thus inherited by all other elements).	Satisfied

	Do NOT require horizontal scrolling when the text size is doubled.	Satisfied
1.4.9 Images of Text (No Exception) (Level AAA)	Text is used within an image only for decoration (image does not convey content) OR when the information cannot be presented with text alone.	Satisfied

Operable

Interface forms, controls, and navigation are operable

Success Criteria	Recommendation	Ready Education
2.1.1 Keyboard (Level A)	All page functionality is available using the keyboard, unless the functionality cannot be accomplished in any known way using a keyboard (e.g., free hand drawing).	Satisfied
	Page-specified shortcut keys and accesskeys (accesskey should typically be avoided) do not conflict with existing browser and screen reader shortcuts.	Satisfied
2.1.2 No Keyboard Trap (Level A)	Keyboard focus is never locked or trapped at one particular page element. The user can navigate to and from all navigable page elements using only a keyboard.	Satisfied
2.1.3 Keyboard (No Exception) (Level AAA)	All page functionality is available using the keyboard.	Satisfied, certain functions such as placing a pin on a map can only be done using a mouse but setting a location can be done through text
2.2.1 Timing Adjustable (Level A)	If a page or application has a time limit, the user is given options to turn off, adjust, or extend that time limit. This is not a requirement for real-time events (e.g., an auction), where the time limit is absolutely required, or if the time limit is longer than 20 hours.	Satisfied
2.2.2 Pause, Stop, Hide	Automatically moving, blinking, or scrolling content that lasts longer than 5 seconds can be paused, stopped, or hidden by the user. Moving, blinking, or scrolling can be used to draw attention to or highlight content as long as it lasts less than 5 seconds.	Satisfied

2.2.2 Pause, Stop, Hide (Level A)	Automatically updating content (e.g., automatically redirecting or refreshing a page, a news ticker, AJAX updated field, a notification alert, etc.) can be paused, stopped, or hidden by the user or the user can manually control the timing of the updates.	Satisfied
2.2.3 No Timing (Level AAA)	The content and functionality has no time limits or constraints.	Satisfied
2.2.4 Interruptions (Level AAA)	Interruptions (alerts, page updates, etc.) can be postponed or suppressed by the user.	Satisfied
2.2.5 Re-authenticating (Level AAA)	If an authentication session expires, the user can re-authenticate and continue the activity without losing any data from the current page.	Not satisfied
2.3.1 Three Flashes or Below Threshold (Level AAA)	No page content flashes more than 3 times per second unless that flashing content is sufficiently small and the flashes are of low contrast and do not contain too much red. (See general flash and red flash thresholds)	Satisfied
2.3.2 Three Flashes (Level AAA)	No page content flashes more than 3 times per second.	Satisfied
2.4.1 Bypass Blocks (Level A)	A link is provided to skip navigation and other page elements that are repeated across web pages.	Satisfied
	If a page has a proper heading structure, this may be considered a sufficient technique instead of a "Skip to main content" link. Note that navigating by headings is not yet supported in all browsers.	Satisfied
	If a page uses frames and the frames are appropriately titled, this is a sufficient technique for bypassing individual frames.	Satisfied
2.4.2 Page Titled (Level A)	The web page has a descriptive and informative page title.	Satisfied
2.4.3 Focus Order (Level A)	The navigation order of links, form elements, etc. is logical and intuitive.	Satisfied
2.4.4 Link Purpose (In Context) (Level A)	The purpose of each link (or form image button or image map hotspot) can be determined from the link text alone, or from the link text and its context (e.g., surrounding paragraph, list item, table cell, or table headers).	Satisfied

	Links (or form image buttons) with the same text that go to different locations are readily distinguishable.	Satisfied
2.4.5 Multiple Ways (Level AA)	Multiple ways are available to find other web pages on the site - at least two of: a list of related pages, table of contents, site map, site search, or list of all available web pages.	There is a side nav bar on the Control Panel that only has one method of attaining certain links but it is clearly labelled and intuitive
2.4.6 Headings and Labels (Level AA)	Page headings and labels for form and interactive controls are informative. Avoid duplicating heading (e.g., "More Details") or label text (e.g., "First Name") unless the structure provides adequate differentiation between them.	Satisfied
2.4.7 Focus Visible (Level AA)	It is visually apparent which page element has the current keyboard focus (i.e., as you tab through the page, you can see where you are).	Satisfied
2.4.8 Location (Level AAA)	If a web page is part of a sequence of pages or within a complex site structure, an indication of the current page location is provided, for example, through breadcrumbs or specifying the current step in a sequence (e.g., "Step 2 of 5 - Shipping Address").	Satisfied, breadcrumbs are used in the creation flow of events, deals, services, clubs …
2.4.9 Link Purpose (Link Only) (Level AAA)	The purpose of each link (or form image button or image map hotspot) can be determined from the link text alone.	Satisfied
	There are no links (or form image buttons) with the same text that go to different locations.	Satisfied
2.4.10 Section Headings (Level AAA)	Beyond providing an overall document structure, individual sections of content are designated using headings, where appropriate.	Satisfied

Understandable

Content and interface are understandable

Success Criteria	Recommendation	Ready Education

3.1.1 Language of Page (Level A)	The language of the page is identified using the HTML lang attribute (<html lang="en">, for example).	Satisfied
3.1.2 Language of Parts (Level AA)	The language of page content that is in a different language is identified using the lang attribute (e.g., <blockquote lang="es">).	Satisfied
3.1.3 Unusual Words (Level AAA)	Words that may be ambiguous, unknown, or used in a very specific way are defined through adjacent text, a definition list, a glossary, or other suitable method.	Satisfied, tooltips with explanation
3.1.4 Abbreviations (Level AAA)	Expansions for abbreviations are provided by expanding or explaining the definition the first time it is used, using the <abbr> element, or linking to a definition or glossary. NOTE: WCAG 2.0 gives no exception for regularly understood abbreviations (e.g., "HTML" on a web design site must always be expanded).	Satisfied
3.1.5 Reading Level (Level AAA)	A more understandable alternative is provided for content that is more advanced than can be reasonably read by a person with roughly 9 years of primary education.	Satisfied
3.1.6 Pronunciation (Level AAA)	If the pronunciation of a word is vital to understanding that word, its pronunciation is provided immediately following the word or via a link or glossary.	Satisfied
3.2.1 On Focus (Level A)	When a page element receives focus, it does not result in a substantial change to the page, the spawning of a pop-up window, an additional change of keyboard focus, or any other change that could confuse or disorient the user.	Satisfied
3.2.2 On Input (Level A)	When a user inputs information or interacts with a control, it does not result in a substantial change to the page, the spawning of a pop-up window, an additional change of keyboard focus, or any other change that could confuse or disorient the user unless the user is informed of the change ahead of time.	Satisfied
3.2.3 Consistent Navigation (Level AA)	Navigation links that are repeated on web pages do not change order when navigating through the site.	Satisfied

3.2.4 Consistent Identification (Level AA)	Elements that have the same functionality across multiple web pages are consistently identified. For example, a search box at the top of the site should always be labeled the same way.	Satisfied
3.2.5 Change on Request (Level AAA)	Substantial changes to the page, the spawning of pop-up windows, uncontrolled changes of keyboard focus, or any other change that could confuse or disorient the user must be initiated by the user. Alternatively, the user is provided an option to disable such changes.	Satisfied
3.3.1 Error Identification (Level A)	Required form elements or form elements that require a specific format, value, or length provide this information within the element's label.	Satisfied
	If utilized, form validation errors are presented in an efficient, intuitive, and accessible manner. The error is clearly identified, quick access to the problematic element is provided, and user is allowed to easily fix the error and resubmit the form.	Satisfied, red text highlights the errors in a form
3.3.2 Labels or Instructions (Level A)	Sufficient labels, cues, and instructions for required interactive elements are provided via instructions, examples, properly positioned form labels, and/or fieldsets/legends.	Satisfied
3.3.3 Error Suggestion (Level AA)	If an input error is detected (via client-side or server-side validation), provide suggestions for fixing the input in a timely and accessible manner.	Satisfied
3.3.4 Error Prevention (Legal, Financial, Data) (Level AA)	If the user can change or delete legal, financial, or test data, the changes/deletions can be reversed, verified, or confirmed.	Satisfied
3.3.5 Help (Level AAA)	Provide instructions and cues in context to help in form completion and submission.	Satisfied
3.3.6 Error Prevention (All) (Level AAA)	If the user can submit information, the submission is reversible, verified, or confirmed.	Satisfied

Robust

Content can be used reliably by a wide variety of user agents, including assistive technologies

Success Criteria	Recommendation	Ready Education
4.1.1 Parsing (Level A)	Significant HTML/XHTML validation/parsing errors are avoided. Check athttp://validator.w3.org/	Satisfied
4.1.2 Name, Role, Value (Level A)	Markup is used in a way that facilitates accessibility. This includes following the HTML/XHTML specifications and using forms, form labels, frame titles, etc. appropriately.	Satisfied

Appendix C

Accessibility for Ready Education app design

Accessibility guidelines for Ready Education's mobile apps!

Accessibility Suggested Requirements

The following steps must be satisfied (at least partially) in order to ensure a minimum level of application accessibility.

1. **Describe user interface controls:** Provide content descriptions for user interface components that do not have visible text, particularly `ImageButton`, `ImageView` and `CheckBox` components. Use the `android:contentDescription` XML layout attribute or the `setContentDescription(CharSequence)` method to provide this information for accessibility services. (Exception: decorative graphics)
2. **Enable focus-based navigation:** Make sure users can navigate your screen layouts using hardware-based or software directional controls (D-pads, trackballs, keyboards and navigation gestures). In a few cases, you may need to make user interface components focusable or change the focus order to be more logical for user actions.
3. **Custom view controls:** If you build custom interface controls for your application, implement accessibility interfaces for your custom views and provide content descriptions.
4. **No audio-only feedback:** Audio feedback must always have a secondary feedback mechanism to support users who are deaf or hard of hearing. For example, a sound alert for the arrival of a message must be accompanied by a system `Notification`, haptic feedback (if available) or other visual alert.
5. **Test:** Test accessibility by navigating your application using directional controls, and using eyes-free navigation with TalkBack or VoiceOver enabled. For more accessibility testing information, see the Accessibility Testing Checklist.

Accessibility Recommendations

The following steps are recommended for ensuring the accessibility of your application. If you do not take these actions, it may impact the overall accessibility and quality of your application.

1. **iOS / Android Design Accessibility Guidelines:** Before building your layouts, review and follow the accessibility guidelines provided in the Design guidelines.
2. **Framework-provided controls:** Use Android's / iOS built-in user interface controls whenever possible, as these components provide accessibility support by default.
3. **Temporary or self-hiding controls and notifications:** Avoid having user interface controls that fade out or disappear after a certain amount of time. If this behavior is important to your application, provide an alternative interface for these functions.

Special Cases and Considerations

The following list describes specific situations where action should be taken to ensure an accessible app. Review this list to see if any of these special cases and considerations apply to your application, and take the appropriate action.

1. **Text field hints:** For `EditText` fields, provide an android:hint attribute *instead* of a content description, to help users understand what content is expected when the text field is empty and allow the contents of the field to be spoken when it is filled.
2. **Custom controls with high visual context:** If your application contains a custom control with a high degree of visual context (such as a calendar control), default accessibility services processing may not provide adequate descriptions for users, and you should consider providing a virtual view hierarchy for your control using `AccessibilityNodeProvider`.
3. **Custom controls and click handling:** If a custom control in your application performs specific handling of user touch interaction, such as listening with `onTouchEvent(MotionEvent)` for `MotionEvent.ACTION_DOWN` and `MotionEvent.ACTION_UP` and treating it as a click event, you must trigger an `AccessibilityEvent` equivalent to a click and provide a way for accessibility services to perform this action for users. For more information, see Handling custom touch events.
4. **Controls that change function:** If you have buttons or other controls that change function during the normal activity of a user in your application (for example, a button that changes from **Play** to **Pause**), make sure you also change the `android:contentDescription` of the button appropriately.
5. **Prompts for related controls:** Make sure sets of controls which provide a single function, such as the `DatePicker`, provide useful audio feedback when an user interacts with the individual controls.
6. **Video playback and captioning:** If your application provides video playback, it must support captioning and subtitles to assist users who are deaf or hard of hearing. Your video playback controls must also clearly indicate if captioning is available for a video and provide a clear way of enabling captions.
7. **Supplemental accessibility audio feedback:** Use only the iOS/Android accessibility framework to provide accessibility audio feedback for your app. Accessibility services such as TalkBack should be the only way your application provides accessibility audio prompts to users. Provide the prompting information with a `android:contentDescription` XML layout attribute or dynamically add it using accessibility framework APIs. For example, if your application takes action that you want to announce to a user, such as automatically turning the page of a book, use the `announceForAccessibility(CharSequence)` method to have accessibility services speak this information to the user.
8. **Custom controls with complex visual interactions:** For custom controls that provide complex or non-standard visual interactions, provide a virtual view hierarchy for your control using `AccessibilityNodeProvider` that allows accessibility services to provide a simplified interaction model for the user. If this approach is not feasible, consider providing an alternate view that is accessible.
9. **Sets of small controls:** If you have controls that are smaller than the minimum recommended touch size in your application screens, consider grouping these controls together using a `ViewGroup` and providing a `android:contentDescription` for the group.
10. **Decorative images and graphics:** Elements in application screens that are purely decorative and do not provide any content or enable a user action should not have accessibility content descriptions.

Legend:

Partially satisfied

Fully satisfied

Source:

https://developer.android.com/guide/topics/ui/accessibility/checklist.html

https://developer.apple.com/accessibility/ios/

http://www.w3.org/TR/WCAG20/