

EDpuzzle Accessibility Research/Testing

8/25/17 – 9/11/17

Research

Not able to find information (a VPAT or otherwise) regarding the accessibility of EDpuzzle.

Features

- Available as an app for Android and iOS (students only)
- Ability to crop a video
- Audio notes
- Insert questions
- Provide an image
- Insert hyperlink

Student Interface Testing

Scenarios:

Testing involved three scenarios:

- Embedded EDpuzzle video – user required to log in via the embedded frame, all activity takes place in Sakai
- Link to EDpuzzle video – triggers a new browser tab and modal dialog box, user required to log in, direct access to video
- Link to EDpuzzle classroom – triggers a new browser tab, user required to log in to EDpuzzle website, must navigate to appropriate video

Student account, Fred, was utilized as a testing avatar, and the tester's ConnectMail account was used to sign-in and access the EDpuzzle content. Testing was performed on a Windows 10 machine with Chrome, Firefox, Edge, and Internet Explorer (specific versions listed later in the document).

Summary of Results

Keyboard-only interfacing: LIMITED

- Expectation:
 - The user should be able to complete all of the **same functions** with a keyboard that can be completed with a mouse.
- Supports:
 - the ability to log in to embedded EDpuzzle via (what appears to be a) modal window
 - the ability to log in via the EDpuzzle website
 - ability to locate and access the desired video on the website
 - type and submit an open-ended response
 - select and open a hyperlink
- Barriers:
 - unable to access the video player control panel (after starting the video, there is no ability to stop/pause button)
 - unable to access closed captions
 - unable to use the timeline to jump to content
 - unable to select and submit a multiple choice response

Screen reader interfacing: POOR

- Expectation:
 - The user should be able to **readily locate information and complete all of the functions** with a keyboard and screen reader that a sighted user can complete visually with a mouse.
- Barriers:
 - unable to successfully log in to embedded video
 - unable to successfully log in to website
 - unable to play video through direct link to EDpuzzle video
- Additional notes
 - after visually assisted log in to embedded content and EDpuzzle classroom (this was for testing purposes to gather additional information, a visually impaired user should be able to log in without assistance from a sighted person)
 - much of the content that appears on screen is not labeled in the code (very difficult to locate relevant information)
 - difficult to remain orientated due to Tab order of items and unlabeled elements
 - difficult to make selections:
 - cannot use headings nor Tab button to quickly locate assignments in classroom (unsure of which content is the video itself)
 - most of the text and graphics are announced as clickable (which should indicate a hyperlink), but the text is not, in fact, clickable (this leads user to believe there is some sort of error)
 - when video pauses, there is no trigger to the screen reader to announce what to do next
 - unable to access the video player's control panel (after starting the video, there is no access to stop/pause button)
 - when enabled by the instructor, unable to use the timeline to jump to content
 - unable to select and submit a multiple choice response
 - no ability to add alt text (and long description, when needed) to images

Other notes

- Tab focus is intermittent
- Color contrast of log in buttons:
 - Log in with EDpuzzle - pass
 - Log in with Google - fail
 - Log in with Edmodo - fail
 - Sign up - fail

Recommendation

- Create an equivalent alternative to the content and learning experience
 - Transcript option
 - create a transcript of video and include the questions (and other content, such as voice over or image description) at the proper location in the transcript
 - if feedback is provided in the EDpuzzle, feedback can similarly be provided in a second document that includes all of the questions from the first document and the correct answers
 - Limitations
 - 2nd document should be readily available but nothing will stop student from looking at it, first.

- Unable to limit access to 2nd document because other students will have immediate feedback.
- Video segments in Sakai option
 - Embed video multiple times in subpage. Use [Begin/End snippets in embed code](#) to mimic EDpuzzle. Use Sakai's question tool to ask questions. Can also provide images and voice over, if desired.

Test Results: Chrome v.60.0.3112.101

Table 1: EDpuzzle Accessibility Testing Results

Test	Mthd	Embedded EDpuzzle	Linked EDpuzzle Video	Linked EDpuzzle Classroom
Signing in to EDpuzzle	KB	Visual focus on sign-in buttons is hover state. Able to sign in with ConnectMail account.	Visual focus on sign-in buttons is hover state. Able to sign in with ConnectMail account. Opens EDpuzzle viewer in new tab.	Visual focus on sign-in buttons is hover state. Able to sign in with ConnectMail account. Opens EDpuzzle classroom.
Entering EDpuzzle frame	KB	Focus lands on EDpuzzle logo (upper-left corner), play button (centered on video), YouTube logo (lower-right corner) Able to play video	Focus lands on EDpuzzle logo (upper-left corner), play button (centered on video), YouTube logo (lower-right corner) Able to play video	From Classroom interface, able to locate and access EDpuzzle. Opens EDpuzzle viewer in new tab. Focus lands on EDpuzzle logo, My Classes, Account name, Back button, play button (centered on video)
Accessing player controls	KB	Unable to access player controls. Unable to: <ul style="list-style-type: none"> • pause video, • maximize window, • adjust volume 	Unable to access player controls. Unable to: <ul style="list-style-type: none"> • pause video, • maximize window, • adjust volume 	Unable to access player controls. Unable to: <ul style="list-style-type: none"> • pause video, • maximize window, • adjust volume
Ability to toggle captions	KB	Unable to access player controls (including captions)	Unable to access player controls (including captions)	Unable to access player controls (including captions)

Test	Mthd	Embedded EDpuzzle	Linked EDpuzzle Video	Linked EDpuzzle Classroom
Ability to interact with content (e.g., quizzes, etc.)	KB	<ul style="list-style-type: none"> • Question types: <ul style="list-style-type: none"> ○ Open-ended: Able to type text response for open-ended question ○ Multiple choice: Unable to select an answer for multiple-choice question. Answer was required, forced to skip those questions. ○ Instructor comment box with hyperlink: able to access link, though tabs are out of order. Also, suggest including new window in hyperlink text. • Other features: <ul style="list-style-type: none"> ○ When enabled, ability to skip content when question appears, when enabled, Skip button is available and functional. Rewatch button functional. Note: Unable to land focus on timeline question indicators • Once video has been watched, unable to replay it, unless the window is refreshed • If keyboard focus is accidentally moved away from EDpuzzle and user is unable to continue interacting with embedded video, a work-around is to access EDpuzzle logo in upper left corner of video to enter EDpuzzle classroom. 	<ul style="list-style-type: none"> • Question types: <ul style="list-style-type: none"> ○ Open-ended: Able to type text response for open-ended question ○ Multiple choice: Unable to select an answer for multiple-choice question. Answer was required, forced to skip those questions. ○ Instructor comment box with hyperlink: able to access link, though tabs are out of order. Also, suggest including new window in hyperlink text. • Other features: <ul style="list-style-type: none"> ○ When enabled, ability to skip content when question appears, when enabled, Skip button is available and functional. Rewatch button functional. Note: Unable to land focus on timeline question indicators • If keyboard focus is accidentally moved away from EDpuzzle and user is unable to continue interacting with embedded video, a work-around is to either access EDpuzzle logo in upper left corner of video or access the Back button to return to EDpuzzle classroom. • Once video has been watched, unable to replay it, unless the window is refreshed or EDpuzzle accessed again via the classroom 	<ul style="list-style-type: none"> • Question types: <ul style="list-style-type: none"> ○ Open-ended: Able to type text response for open-ended question ○ Multiple choice: Unable to select an answer for multiple-choice question. Answer was required, forced to skip those questions. ○ Instructor comment box with hyperlink: able to access link, though tabs are out of order. Also, suggest including new window in hyperlink text. • Other features: <ul style="list-style-type: none"> ○ When enabled, ability to skip content when question appears, when enabled, Skip button is available and functional. Rewatch button functional. Note: Unable to land focus on timeline question indicators • If keyboard focus is accidentally moved away from EDpuzzle and user is unable to continue interacting with embedded video, a work-around is to either access EDpuzzle logo in upper left corner of video or access the Back button to return to EDpuzzle classroom. • Once video has been watched, unable to replay it, unless the window is refreshed or EDpuzzle accessed again via the classroom
Color contrast	CCA	Color contrast of keyboard focus on Question panel is weak (uses slight color change hover state)	Color contrast of keyboard focus on Question panel is weak (uses slight color change hover state)	Color contrast of keyboard focus on Question panel is weak (uses slight color change hover state)

Test Results: Firefox v45.8.0

Table 2: EDpuzzle Accessibility Testing Results

Test	Mthd	Embedded EDpuzzle	Linked EDpuzzle Video	Linked EDpuzzle Classroom
Signing in to EDpuzzle	KB	Visual focus on sign-in buttons is hover state. Able to sign in with ConnectMail account.	Visual focus on sign-in buttons is hover state. Able to sign in with ConnectMail account. Opens EDpuzzle player in new tab.	Visual focus on sign-in buttons is hover state. Able to sign in with ConnectMail account. Opens EDpuzzle classroom.
Entering EDpuzzle frame	KB	Focus lands on EDpuzzle logo (upper-left corner), play button (centered on video), YouTube logo (lower-right corner) Able to play video	Focus lands on EDpuzzle logo (upper-left corner), play button (centered on video), YouTube logo (lower-right corner) Able to play video	From Classroom interface, able to locate and access EDpuzzle. Focus lands on EDpuzzle logo, My Classes, Account name, Back button, play button (centered on video)
Accessing player controls	KB	Unable to access player controls. Unable to: <ul style="list-style-type: none"> • pause video, • maximize window, • adjust volume 	Unable to access player controls. Unable to: <ul style="list-style-type: none"> • pause video, • maximize window, • adjust volume 	Unable to access player controls. Unable to: <ul style="list-style-type: none"> • pause video, • maximize window, • adjust volume
Ability to toggle captions	KB	Unable to access player controls (including captions)	Unable to access player controls (including captions)	Unable to access player controls (including captions)

Test	Mthd	Embedded EDpuzzle	Linked EDpuzzle Video	Linked EDpuzzle Classroom
Ability to interact with content (e.g., quizzes, etc.)	KB	<ul style="list-style-type: none"> • Question types: <ul style="list-style-type: none"> ○ Open-ended: Able to type text response for open-ended question ○ Multiple choice: Unable to select an answer for multiple-choice question. Answer was required, forced to skip those questions. ○ Instructor comment box with hyperlink: able to access link, though tabs are out of order. Also, suggest including new window in hyperlink text. • Other features: <ul style="list-style-type: none"> ○ When enabled, ability to skip content when question appears, when enabled, Skip button is available and functional. Rewatch button functional. Note: Unable to land focus on timeline question indicators • Once video has been watched, unable to replay it, unless the window is refreshed • If keyboard focus is accidentally moved away from EDpuzzle and user is unable to continue interacting with embedded video, a work-around is to access EDpuzzle logo in upper left corner of video to enter EDpuzzle classroom. 	<ul style="list-style-type: none"> • Question types: <ul style="list-style-type: none"> ○ Open-ended: Able to type text response for open-ended question ○ Multiple choice: Unable to select an answer for multiple-choice question. Answer was required, forced to skip those questions. ○ Instructor comment box with hyperlink: able to access link, though tabs are out of order. Also, suggest including new window in hyperlink text. • Other features: <ul style="list-style-type: none"> ○ When enabled, ability to skip content when question appears, when enabled, Skip button is available and functional. Rewatch button functional. Note: Unable to land focus on timeline question indicators • If keyboard focus is accidentally moved away from EDpuzzle and user is unable to continue interacting with embedded video, a work-around is to either access EDpuzzle logo in upper left corner of video or access the Back button to return to EDpuzzle classroom. • Once video has been watched, unable to replay it, unless the window is refreshed or EDpuzzle accessed again via the classroom 	<ul style="list-style-type: none"> • Question types: <ul style="list-style-type: none"> ○ Open-ended: Able to type text response for open-ended question ○ Multiple choice: Unable to select an answer for multiple-choice question. Answer was required, forced to skip those questions. ○ Instructor comment box with hyperlink: able to access link, though tabs are out of order. Also, suggest including new window in hyperlink text. • Other features: <ul style="list-style-type: none"> ○ When enabled, ability to skip content when question appears, when enabled, Skip button is available and functional. Rewatch button functional. Note: Unable to land focus on timeline question indicators • If keyboard focus is accidentally moved away from EDpuzzle and user is unable to continue interacting with embedded video, a work-around is to either access EDpuzzle logo in upper left corner of video or access the Back button to return to EDpuzzle classroom. • Once video has been watched, unable to replay it, unless the window is refreshed or EDpuzzle accessed again via the classroom

Test Results: Internet Explorer v.11.540.15063.0

Table 3: EDpuzzle Accessibility Testing Results

Test	Mthd	Embedded EDpuzzle	Linked EDpuzzle Video	Linked EDpuzzle Classroom
Signing in to EDpuzzle	KB	Visual focus on sign-in buttons is hover state. Able to sign in with ConnectMail account.	Visual focus on sign-in buttons is hover state. Able to sign in with ConnectMail account. Opens EDpuzzle player in new tab.	Visual focus on sign-in buttons is hover state. Able to sign in with ConnectMail account. Opens EDpuzzle classroom.
Entering EDpuzzle frame	KB	Focus lands on EDpuzzle logo (upper-left corner), play button (centered on video), YouTube logo (lower-right corner) Able to play video	Focus lands on EDpuzzle logo (upper-left corner), play button (centered on video), YouTube logo (lower-right corner) Able to play video	From Classroom interface, able to locate and access EDpuzzle. Focus lands on EDpuzzle logo, My Classes, Account name, Back button, play button (centered on video)
Accessing player controls	KB	Unable to access player controls. Unable to: <ul style="list-style-type: none"> • pause video, • maximize window, • adjust volume 	Unable to access player controls. Unable to: <ul style="list-style-type: none"> • pause video, • maximize window, • adjust volume 	Unable to access player controls. Unable to: <ul style="list-style-type: none"> • pause video, • maximize window, • adjust volume
Ability to toggle captions	KB	Unable to access player controls (including captions)	Unable to access player controls (including captions)	Unable to access player controls (including captions)

Test	Mthd	Embedded EDpuzzle	Linked EDpuzzle Video	Linked EDpuzzle Classroom
Ability to interact with content (e.g., quizzes, etc.)	KB	<ul style="list-style-type: none"> • Question types: <ul style="list-style-type: none"> ○ Open-ended: Able to type text response for open-ended question ○ Multiple choice: Unable to select an answer for multiple-choice question. Answer was required, forced to skip those questions. ○ Instructor comment box with hyperlink: able to access link, though tabs are out of order. Also, suggest including new window in hyperlink text. • Other features: <ul style="list-style-type: none"> ○ When enabled, ability to skip content when question appears, when enabled, Skip button is available and functional. Rewatch button functional. Note: Unable to land focus on timeline question indicators • Once video has been watched, unable to replay it, unless the window is refreshed • If keyboard focus is accidentally moved away from EDpuzzle and user is unable to continue interacting with embedded video, a work-around is to access EDpuzzle logo in upper left corner of video to enter EDpuzzle classroom. 	<ul style="list-style-type: none"> • Question types: <ul style="list-style-type: none"> ○ Open-ended: Able to type text response for open-ended question ○ Multiple choice: Unable to select an answer for multiple-choice question. Answer was required, forced to skip those questions. ○ Instructor comment box with hyperlink: able to access link, though tabs are out of order. Also, suggest including new window in hyperlink text. • Other features: <ul style="list-style-type: none"> ○ When enabled, ability to skip content when question appears, when enabled, Skip button is available and functional. Rewatch button functional. Note: Unable to land focus on timeline question indicators • If keyboard focus is accidentally moved away from EDpuzzle and user is unable to continue interacting with embedded video, a work-around is to either access EDpuzzle logo in upper left corner of video or access the Back button to return to EDpuzzle classroom. • Once video has been watched, unable to replay it, unless the window is refreshed or EDpuzzle accessed again via the classroom 	<ul style="list-style-type: none"> • Question types: <ul style="list-style-type: none"> ○ Open-ended: Able to type text response for open-ended question ○ Multiple choice: Unable to select an answer for multiple-choice question. Answer was required, forced to skip those questions. ○ Instructor comment box with hyperlink: able to access link, though tabs are out of order. Also, suggest including new window in hyperlink text. • Other features: <ul style="list-style-type: none"> ○ When enabled, ability to skip content when question appears, when enabled, Skip button is available and functional. Rewatch button functional. Note: Unable to land focus on timeline question indicators • If keyboard focus is accidentally moved away from EDpuzzle and user is unable to continue interacting with embedded video, a work-around is to either access EDpuzzle logo in upper left corner of video or access the Back button to return to EDpuzzle classroom. • Once video has been watched, unable to replay it, unless the window is refreshed or EDpuzzle accessed again via the classroom
Color contrast	CCA	Color contrast of keyboard focus on Question panel is weak (uses slight color change hover state)	Color contrast of keyboard focus on Question panel is weak (uses slight color change hover state)	Color contrast of keyboard focus on Question panel is weak (uses slight color change hover state)

Test Results: Edge v.40.15063.0.0

Table 4: EDpuzzle Accessibility Testing Results

Test	Mthd	Embedded EDpuzzle	Linked EDpuzzle Video	Linked EDpuzzle Classroom
Signing in to EDpuzzle	KB	<p>Unable to sign in. Upon entering Google account information, a new window and a message appears. Message says: The site you're on is trying to close this window. Do you want to close this window? Selecting yes takes user back to embedded video. Focus remains on previous selection (e.g., sign in to Google). Selecting no leaves the window open; however, nothing happens.</p> <p>Note: According to Microsoft ListServ, Edge is not one of the supported browsers for YouTube (as of 8/30/17).</p>	<p>Visual focus on sign-in buttons is hover state. Able to sign in with ConnectMail account. Opens EDpuzzle player in new tab.</p>	<p>Visual focus on sign-in buttons is hover state. Able to sign in with ConnectMail account. Opens EDpuzzle classroom.</p>
Entering EDpuzzle frame	KB	n/a	<p>Focus lands on EDpuzzle logo (upper-left corner), play button (centered on video), YouTube logo (lower-right corner) Able to play video</p>	<p>From Classroom interface, able to locate and access EDpuzzle. Focus lands on EDpuzzle logo, My Classes, Account name, Back button, play button (centered on video)</p>
Accessing player controls	KB	n/a	<p>Unable to access player controls. Unable to:</p> <ul style="list-style-type: none"> • pause video, • maximize window, • adjust volume 	<p>Unable to access player controls. Unable to:</p> <ul style="list-style-type: none"> • pause video, • maximize window, • adjust volume
Ability to toggle captions	KB	n/a	<p>Unable to access player controls (including captions)</p>	<p>Unable to access player controls (including captions)</p>

Test	Mthd	Embedded EDpuzzle	Linked EDpuzzle Video	Linked EDpuzzle Classroom
Ability to interact with content (e.g., quizzes, etc.)	KB	n/a	<ul style="list-style-type: none"> • Question types: <ul style="list-style-type: none"> ○ Open-ended: Able to type text response for open-ended question ○ Multiple choice: Unable to select an answer for multiple-choice question. Answer was required, forced to skip those questions. ○ Instructor comment box with hyperlink: able to access link, though tabs are out of order. Also, suggest including new window in hyperlink text. • Other features: <ul style="list-style-type: none"> ○ When enabled, ability to skip content when question appears, when enabled, Skip button is available and functional. Rewatch button functional. Note: Unable to land focus on timeline question indicators • If keyboard focus is accidentally moved away from EDpuzzle and user is unable to continue interacting with embedded video, a work-around is to either access EDpuzzle logo in upper left corner of video or access the Back button to return to EDpuzzle classroom. • Once video has been watched, unable to replay it, unless the window is refreshed or EDpuzzle accessed again via the classroom 	<ul style="list-style-type: none"> • Question types: <ul style="list-style-type: none"> ○ Open-ended: Able to type text response for open-ended question ○ Multiple choice: Unable to select an answer for multiple-choice question. Answer was required, forced to skip those questions. ○ Instructor comment box with hyperlink: able to access link, though tabs are out of order. Also, suggest including new window in hyperlink text. • Other features: <ul style="list-style-type: none"> ○ When enabled, ability to skip content when question appears, when enabled, Skip button is available and functional. Rewatch button functional. Note: Unable to land focus on timeline question indicators • If keyboard focus is accidentally moved away from EDpuzzle and user is unable to continue interacting with embedded video, a work-around is to either access EDpuzzle logo in upper left corner of video or access the Back button to return to EDpuzzle classroom. • Once video has been watched, unable to replay it, unless the window is refreshed or EDpuzzle accessed again via the classroom
Color contrast	CCA	n/a	Color contrast of keyboard focus on Question panel is weak (uses slight color change hover state)	Color contrast of keyboard focus on Question panel is weak (uses slight color change hover state)

Screen Reader Testing (embedded video)

For screen reader testing, the tables below outline how a student might attempt to access the EDpuzzle content. Testing assumes there is a heading in Sakai that indicates the presence of EDpuzzle content. The student will use the screen reader to open the headings dialog box and navigate the EDpuzzle heading.

Table 5: Screen Reader Notes (reviewing embedded EDpuzzle frame in Sakai, Chrome)

Task	Announcement	Note or Visual Description
↓	EDpuzzle frame	n/a
↓	EDpuzzle document	n/a
↓	Link Graphic EDpuzzle	This is the EDpuzzle logo. It appears in the upper-left corner, following it takes user to EDpuzzle's website (test site separately). Log in is required: <ul style="list-style-type: none"> the page's headings are not descriptive. can locate log in button by Tabbing, but
↓	Graphic for Amy's testing: The Punishable.....clickable	This is the title of the video; attempting to click/ENTER results in no event
↓	Title of video repeated.....clickable	Attempting to click/ENTER results in no event
↓	Blank	n/a
↓	Duration 3:47 ...clickable	This is the duration of the video; attempting to click/ENTER results in no event
↓	Blank	n/a
↓	Heading level five, I am a ...clickable	This is text that appears next to a drop-down menu; attempting to click/ENTER results in no event; it is unknown that this is a menu
↓	Heading level 5 button student	This is the drop-down menu, but that information has not been provided (need more testing on what happens when this button is clicked)
↓	EDpuzzle log in with EDpuzzle button	n/a
↓	Log in with Google button	n/a
↓	Edmodo log in with Edmodo button	n/a
↓	Separator	n/a
↓	Blank	n/a
↓	Heading level 5 don't have an account? Then dot dot dot ...clickable	Text is not clickable
↓	Sign up button	n/a
↓	EDpuzzle document end	n/a
↓	EDpuzzle frame end	n/a

Table 6: Screen Reader Notes (entering EDpuzzle content from 10th arrow down, Chrome)

Task	Announcement	Note or Visual Description
Start from	Heading level 5 button student	n/a
Enter	Heading level 5 expanded student	The drop-down menu has expanded, but there is little indication that this is a menu; it was announced as a button
↓	Heading level 5 link teacher	Not clear that 10 th arrow down indicates a log in selection. Pressing ENTER simply collapses the menu, but the announcement simply says collapsed.

Table 7: Screen Reader Notes (entering EDpuzzle content from 12th arrow down, Chrome)

Task	Announcement	Note or Visual Description
Start from	Login with Google button	n/a
Enter	Untitled. Forms mode. Email or phone edit	Modeless dialog box appears. It is a google sign in form. Possible to infer that this is a login screen.
Attempt to sign in	n/a	Able to type in email address
Tab to locate password field	Next button. Next button	Able to access a Next button; however, it is confusing that no password was required.
Press Next button	n/a	The cursor is waiting in the password field, but focus is lost. Need to up and down arrow to try to orient. It takes two up arrows to locate "password edit"
Enter password	Announces a string of words and numbers. Ends announcement with "YouTube player."	Not sure where words and numbers came from. With the announcement of YouTube player, am I now in YouTube? Try to orient with down arrow.
↓	Visited link graphic EDpuzzle	This is logo in upper-left corner of video
↓	List of two items nesting level 1	Expecting a list of two items, but visually, this is the account name. Navigationally-speaking, arrowing down will reveal the two list items; however, this is not really a list.
↓	Says account holder's name ...clickable	Pressing ENTER results in no event
↓	...clickable	Visually, focus has moved to logout button. This is not clear.
↓	List end nesting level 1	Not clear what the items in this list were.
↓	YouTube video player frame	Visually, focus is on overlaid video play button. Would not infer to press ENTER to play video at this point.
↓	Says video's title ...document	n/a
↓	Play button	Need to further test what happens when Play button is accessed
↓	Link watch on www.youtubeducation.com	Focus has moved to YouTube logo in bottom-right corner
↓	Video title...document end	n/a

Task	Announcement	Note or Visual Description
↓	YouTube video player frame end	Focus is to the right of the timeline, on 0:00
↓	Graphic zero o'clock clickable	Pressing ENTER does not result in an event
↓	Graphic three forty-seven clickable	Pressing ENTER does not result in an event
↓	EDpuzzle document end	n/a
↓	EDpuzzle frame end	n/a

Table 8: Screen Reader Notes (entering EDpuzzle content from Play button, Chrome)

Task	Announcement	Note or Visual Description
Start from	Focus on Play button	n/a
Enter	YouTube video player frame only. YouTube video player frame.	Video begins playing. At first pause, there is no announcement. Visually, a modeless dialog box has appeared, but not announced. This example contains a graphic. Need to orient. Use down arrow.
↓	Link watch on www.youtubeeducation.com	n/a
↓	Says video title...document end	n/a
↓	Says YouTube video player...frame end	n/a
↓	Graphic zero fifty-one ...clickable	Pressing ENTER results in announcement "EDpuzzle frame" Focus does not appear to be on anything.
↓	Graphic three forty-one ...clickable	Focus does not appear to be on anything
↓	Graphic CC clickable	The tester now realizes that the focus is behind the dialog box (specifically on the closed caption button), but as a screen reader user, the tester is still trying to orient. The video continues to be paused. At this time, user might assume there is an error (instructions about how many pauses to expect may help)
↓	List of one items nesting level 1	Visually, focus has moved to dialog box. Have been down arrowing to unlabeled elements. Expecting a list of one(?) item.
↓	Clickable	Unclear what is clickable. Pressing ENTER does not result in an event.
↓	List end nesting level one	n/a
↓	Graphic fifty-nine thousand seventy-seven A8B2D58D93EOC7C9E ...clickable	Pressing ENTER does not result in an event.
↓	Same page link	Not sure what the link is.
ENTER	Same page link. Same page link.	Continue attempt at orienting.
↓	Same page link.	Visually, focus has moved to the left and right arrows that appear near the top of the dialog box.
↓	Continue button	Note that it has taken 13 down arrow presses to locate the Continue button.
ENTER	n/a	Video plays

Table 9: Screen Reader Notes (interacting with additional EDpuzzle content, Chrome) – Graphic with text

Task	Announcement	Note or Visual Description
Start from Video pause	No announcement	Visually, a modeless dialog box has appeared, but not announced. Need to orient. Visually, this example contains a graphic with text appearing below it. Use down arrow
↓ x 11	Announces the text appearing below image.	Note that it is not clear that this is text associated with the image. In the down arrowing leading up to this one, graphic was ambiguously announced.
↓	Blank	n/a
↓	Blank edit	Edit indicates that a text box is present. Visually, cursor is in the text editor. Note: Could include specific response instructions under the image. Check for limitations on character count.
↓	Same page link	n/a
↓	Same page link	n/a
↓	Submit button	n/a
↓	Skip button	n/a
↓	Rewatch button	n/a
↓	EDpuzzle document end	n/a
↓	EDpuzzle frame end	n/a

Table 10: Screen Reader Notes (interacting with additional EDpuzzle content, Chrome) – Graphic with text (con't)

Task	Announcement	Note or Visual Description
Start from cursor in text box	n/a	Successfully typed some text
↓ to Submit button	No announcement	Visually, typed text is displayed with the message “To be graded.” Need to orient.
↓ x 20	Announces “To be graded”	Note that by the time the user hears this, he/she has been attempting to reorient. It is possible that the user might think an error has occurred.
↓	Blank	n/a
↓	Reads first half of typed text	n/a
↓	Reads second half of typed text ...clickable	n/a
↓ x 3	Continue button	n/a
ENTER	n/a	Video plays

Table 11: Screen Reader Notes (interacting with additional EDpuzzle content, Chrome) – Graphic with true/false question containing checkboxes

Task	Announcement	Note or Visual Description
Start from Video pause	No announcement	Visually, a modeless dialog box has appeared, but not announced. Need to orient. Visually, this example contains a graphic with a true/false question with checkboxes appearing below it. Use down arrow
↓	Announces the next content that appears in Sakai	Focus moved to Sakai. Attempt to reorient with Headings.
Reenter EDpuzzle content via Sakai headings	n/a	Able to locate EDpuzzle frame
↓ x 21	Announces text appearing below image ...clickable	n/a
↓	Blank	n/a
↓	List of two items nesting level one	n/a
↓	Clickable	n/a
↓	True ...clickable	<ul style="list-style-type: none"> • Visually, the focus is on the word True. Pressing ENTER places a check in the box. <ul style="list-style-type: none"> ○ This was purely a functional test as it is not clear that this is a checkbox toggle. The announcement when pressing ENTER is “Enter.” Not clear a selection has been made. • Pressing ↓ and ↑ indicates it is not clear a selection has been made. • Continue to press ↓ to attempt to move forward
↓ x 5	Continue button	Video plays. Note that there was feedback available; however, in the attempt to reorient, the feedback was not apparent to the screen reader user.

Table 12: Screen Reader Notes (interacting with additional EDpuzzle content, Chrome) – Text and hyperlink

Task	Announcement	Note or Visual Description
Start from Video pause	No announcement	Visually, a modeless dialog box has appeared, but not announced. Need to orient. Visually, this example contains instructor text with a hyperlink for the student to follow.
↓ x 17	Announces text appearing just before hyperlink ...clickable	Not clear. Seems this text is the hyperlink (clickable); however, it is not clickable nor is it the hyperlink text. Pressing enter results in no event.
↓	Reads hyperlink text	Note. Since so much is announced as clickable when it is NOT clickable, use (new window) or (opens new window) as part of the hyperlink text to make it stand out among the surrounding text.
↓	Reads text appearing after the hyperlinked text ...clickable	n/a
↓ x 4	Continue button	n/a

Table 13: Screen Reader Notes (interacting with additional EDpuzzle content via EDpuzzle website, Chrome)

Task	Announcement	Note or Visual Description
ENTER on Sakai link	EDpuzzle.com site appears. Modeless dialog box appears. Begins reading from the URL and down the page.	Announces an edit, but unclear what to edit. Not clear that there is a dialog box appearing. Announces content behind the dialog box. Since it sounds like this was just a webpage, will attempt to orient with Headings.
Access Headings	No headings found	Attempt to orient with hyperlinks
Access hyperlinks	EDpuzzle For teachers For admins & coaches For schools For districts Mail us Jobs Help Center Terms of Service Privacy policy	None of the hyperlinks is for students nor are any of them dedicated to logging in. Attempt to orient with refresh (Shift + F5) of page and ↓.
↓	Content information end	Audibly, not sure where focus is. Visually, the cursor is in the Username field.
↓	Content information end	Appears there is no more content. Use ↑ to attempt orientation.
↑	Link privacy policy	n/a
↑	Link terms of service vertical bar clickable	n/a
↑	Copyright 2017 EDpuzzle link clickable	n/a
↑	Link help center	n/a
↑	List end	A user might stop here out of confusion. Will continue ↑ for testing purposes.
↑	Link jobs	n/a
↑	Company clickable	n/a
↑	List of two items	Expecting two items in a list. Cursor is still in username field.
↑	List end	Note that no items were announced.
↑	Tweet us clickable	n/a
↑	Send mailing mail us	n/a
↑	Contact clickable	n/a
↑	List of three items	Expecting three items in a list. Cursor is still in username field.
↑	List end	Note that no items were announced.
↑	Link for districts	n/a
↑	Link for schools	n/a
↑	Link for admins and coaches	n/a

Task	Announcement	Note or Visual Description
↑	Link for teachers	n/a
↑	Resources clickable	n/a
↑	List of five items	n/a
↑	Content information	n/a
↑	Banner end	n/a
↑	Navigation region end	n/a
↑	List end	n/a
↑	Log in button	Somehow accessing login behind dialog box. Will test if able to log in.
↑	List of one items	n/a
↑	Link visited link graphic EDpuzzle	This is the logo in the upper-left of the screen
↑	Navigation region	n/a
↑	Banner	n/a
↑	EDpuzzle	SR focus is on the logo in the upper-left of the screen
↑	EDpuzzle	SR focus is on the logo in the upper-left of the screen. Note that repeated ↑ results in same announcement.

Table 14: Screen Reader Notes (interacting with additional EDpuzzle content via EDpuzzle website, Chrome) – begin with login button – TEST 1

Task	Announcement	Note or Visual Description
ENTER on log in button	Enter	Visually, the dialog box reloads, but SR focus remains on the log in button. Unclear what has happened. Try to orient with ↓
↓	List end	n/a
↓	Navigation region end	n/a
↓	Banner end	Repeats announcements in table above. The cursor continues to blink in the Username field.

Table 15: Screen Reader Notes (interacting with additional EDpuzzle content via EDpuzzle website, Chrome) – begin with login button – TEST 2

Task	Announcement	Note or Visual Description
ENTER on log in button	Enter	Visually, the dialog box reloads, but SR focus remains on the log in button. Unclear what has happened. Try to orient with ↑
↑	List of one items	n/a
↑	Visited link graphic EDpuzzle	This is the logo appearing in the upper-left corner of the page
↑	Navigation region	n/a
↑	Banner	n/a
↑	EDpuzzle	SR focus remains on the logo. The cursor continues to blink in the Username field.

Additional Screen Reader testing notes

- Accessing regions announces the regions in the list below. Using the screen reader to enter and exit them is documented in the tables above:
 - Banner
 - Navigation
 - Content information

Follow up testing

- Test instructor interface
- Test student progress interface
- Test mobile apps

Instructor Interface notes

Upon initial log in, EDpuzzle walks instructor through some of the tools:

- Trimming a video: Requires user to drag sliders to a pre-determined spot on a timeline
 - Concerns: requires the user to drag the sliders. Unable to get keyboard focus on the slider region. Able to land on the video.
- Insert a question: Cursor starts in textbox
 - Concerns: none noted at initial review
- Student progress: Displays a list of five students. Each student row is ...clickable and displays additional information.
 - Concerns: possible color contrast concerns, keyboard skips over ...clickable content