Checklist for the Accessible Media Player Evaluation

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ABSTRACT

Nowadays, consumption of video content is extremely high and the corresponding technology must be accessible in order for people with disabilities to be able to access it. For this reason, the user agents or media players used to access video content must be accessible. This poster presents a checklist that includes indicators which can assist in the design and evaluation of accessible media players.

Categories and Subject Descriptors

H.5.2 [Information Interfaces and Presentation]: User Interfaces – interaction style, theory and methods, graphical user interface.

Keywords

Accessibility, media player, evaluation

1. INTRODUCTION

Consumption of multimedia content on the Internet is constantly increasing and video streaming is changing people's viewing habits. Furthermore, because of the high growth in the use of mobile devices such as tablets and smartphones, not only has Internet use been generalised everywhere, but also the creation of video content that is shared and watched on social networks such as YouTube, Vimeo or Facebook is also commonplace. There are more and more users watching TV programs or series from their computers instead of their televisions. Although it is still far from the rates of traditional TV, Video on-Demand (VoD) or video multicasts (real time streaming) are growing very quickly, especially among younger consumers. Some examples are the BBC iPlayer in the UK or the Over The Top (OTT) broadcasting services that companies as Netflix or Hulu offer. Also, multimedia is frequently used for education, both face-to-face education and distance e-learning (formal education or the fashionable Massive Open Online Courses -MOOCs-), and it is also used in work environments for training.

One of the biggest issues for people with disabilities is the access to the video content. People who are hearing impaired need the availability of caption, screen reader users need the availability of audio description, and people with mobility impairments, the biggest issue is keyboard navigation to actually play and control the video. The media player should allow the users to access to multimedia content, regardless of whether or not they have a disability.

2. CHECKLIST FOR ACCESSIBLE MEDIA PLAYER

There are a very extensive regulatory framework and standards with regards to accessibility such as the Web Content Accessibility Guidelines 2.0 (WCAG 2.0), User Agent Accessibility Guidelines 2.0 (UAAG 2.0) and Media Accessibility User Requirements. Even though these standards and guidelines are complete and exhaustive and were developed for all types of agents and users, those developers and evaluators who focus solely on media players may find them not very user friendly. After carrying out preliminary works [1] [2] and an exhaustive study of the standards, this work has identified what indicators should be taken into account to validate the accessibility of a media player. It presents a checklist that includes checkpoints grouped by type. The checklist helps to avoid passing over any of the checkpoints, depending on the level of compliance with the standards' success criteria. Table 1 shows the checklist with the mapping of each checkpoint with the UAAG 2.0 and WCAG 2.0 success criteria (with level conformance AA).

The WCAG transversal requirements have been integrated. For example, according to one of the UAAG guidelines, they must be in compliance with the WCAG. However, this is not an easy task nor is it quickly evaluated. For this reason, the WCAG 2.0 criteria are defined on the checklist in different groups. Also of the accessibility requirements of the multimedia content, the accessibility requirements of the media players must comply with the aim of achieving a complete accessibility [1]. Providing an audio description may not be useful if users cannot access it via their keyboards. Likewise, low-contrast subtitles may not be helpful a hearing-impaired individual.

This checklist has been used as a method of evaluating players such as YouTube and Vimeo; it was conducted by three experts where the Kappa index obtained was a substantial agreement among reviewers. The purpose is to provide a method which fills a gap concerning the evaluation of web accessibility based on conformance with standards.

REFERENCES

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Table 1. Checklist for the accessible media player

CODE	ACCESSIBILITY CHECKPOINT	DESCRIPTION	UAAG 2.0	WCAG 2.0
1	**CONTENT**			
1.1	Alternative audio content	Check if the media player offers alternative content to the audio content		1.2.2, 1.2.4
1.2	Alternative visual content	Check if the media player offers alternative content to the video content		1.2.3, 1.2.5
1.3	Alternative content synchronisation	Check if audio and video tracks remain synchronised across the required range of playback rates	2.10.4	
1.4	Different file extensions	Check if the media player allows different files extensions for the alternative content		
2	**CONTROLS**			
2.1	Keyboard access	Check if all functions can be operated via the keyboard using sequential or direct keyboard commands	2.1.1	2.1.1
2.2	No keyboard traps	Check if the user can move focus away from an interactive element or control using the keyboard alone	2.1.3	2.1.2
2.3	Stop, pause, play, progress bar	Check if the media player provides mechanisms to stop, pause and play the playback and to show the state of the content	2.10.5, 3.1.3	
2.4	Volume	Check if the user can adjust the volume of each audio track independently from other tracks, relative to the global volume level set through operating environment mechanisms	G: 1.5 (1.5.1)	1.4.2
2.5	Highlighted items	Check if the elements can be visually distinguished when they are selected, focused or enabled	1.3.1	
3	**INTERFACE**			
3.1	Resize	Check if the user can resize the viewport of the media player	1.8.8	
3.1	Customize display of controls	Check if the user can customize the display of the media player controls	G 2.7 (2.7.1), 2.3.5	
3.2	Contrast	Check if the contrast of the different colours that appear in the interface satisfy level AA requirements		1.4.3
3.3	Easy to use	Check if the media player is easy to use	Principle 2 and 3	Principle 2 and 3
4	**SETTINGS**			
4.1	Alternative content preferences (colour, font, size)	Check if the user can change the preferences of the alternative content (captions)	1.4.2	
4.2	Allow persistent accessibility settings	Check if the accessibility features established by a user persist between sessions	2.6.1	
4.3	Menu position configuration	Check if the position of the menu can be configured	2.7.1	
4.4	Shortcuts/Access key	Check if the user can navigate via shortcuts	G 2.3	
4.5	Change menu's controls	Check if the user can modify (add, delete, etc.) the controls of the menu according to his/her preferences	2.7.1	
5	**UTILITIES**			
5.1	Search alternative content	Check if the media player allows user to search text within alternative content (captions)	2.4.1	
5.2	Automatic transcription	Check if the media player can provide automatic transcription of alternative content		
6	**HELP**			
6.1	Accessible documentation	Check if the media player offers documentation about the player itself in a format that meets the success criteria of WCAG 2.0 level "A" or higher	3.2.1	
6.2	Describe accessibility features	Check if the media player describes its accessibility features	3.2.2	
7	**ACCESSIBILITY POLICY**			
7.1	Provide policy of accessibility	Check if the media player provides a policy of accessibility		