A study on accessibility requirements for TelEduc 5


Abstract
In this research, we analysed the WCAG 2.0 accessibility criteria applied to TelEduc 5 e-learning environment. TelEduc is under development and our aim is to propose accessibility guidelines to guide the development team.

Key words: Accessibility, Digital Inclusion, E-learning.

Introduction
Accessibility and digital inclusion are important steps in the exercise of citizenship. Schools, universities and other educational spaces should give access to computer resources and take advantage of it to increase students' possibilities1.

Education and computing professionals should understand what it means to promote accessibility, because these professionals can contribute to minimize the barriers encountered by people with disabilities in the use of technologies1.

The e-learning environments are important solutions for education in general, as they have the potential to reach a lot of people. They are developed with the purpose of their participants to interact via technology, bypassing the barriers imposed by distance, to carry out educational activities. So, they are composed of tools that enable the provision of materials, synchronous or asynchronous communication, construction of content and management of courses made available to students2.

The audience of users of an e-learning environment is very broad, differing in degree of knowledge, social class and age, without excluding people with physical or cognitive limitations. So that those users can perform the activities of teaching and learning, it is necessary that the interface of the software does not impose barriers to any target audience. So accessibility is a key requirement of this kind of software2.

The aim of this work is to make an analysis of the accessibility requirements that are applicable to TelEduc 5, considering the nature of the e-learning environment and the complexity for implementation.

Results and Discussion
The WCAG 2.0 is the second version of a series of accessibility guidelines for the web in which many developers are based to make the website accessible to all people. In this work, we conducted a study of WCAG 2.0 applied to TelEduc 5.

The WCAG 2.0 accessibility recommendations are organized into four principles (1 - Perceivable, 2 - Operable, 3 - Understandable and 4 - Robust), containing topics with principles and success criteria. Each success criteria has a level of conformance that ranges from A (lowest) to AAA (highest)3.

For example: principle 1 (perceivable), Guideline 1.2 (time-based Media), and success criteria 1.2.3 (audio description or media alternative - the level of priority is A)3. This success criteria is about having an alternative for time-based media or audio description of the prerecorded video content. This criteria is not applicable to TelEduc, because the e-learning environment does not have time-based media on its interfaces, unless the user post that kind of content. For cases like this, TelEduc can offer a link to upload a file with an audio description.

For each of the success criteria, we did an analysis similar to that presented in the previous paragraph. Table 1 shows the total of criteria which are applicable to the TelEduc and the total not applicable.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Total</th>
<th>Applicable</th>
<th>Not applicable</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 to 1.4</td>
<td>22</td>
<td>7</td>
<td>15</td>
</tr>
<tr>
<td>2.1 to 2.4</td>
<td>20</td>
<td>11</td>
<td>9</td>
</tr>
<tr>
<td>3.1 to 3.3</td>
<td>17</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>4.1</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

A full version of the analyzed success criteria can be found in the document available at memos 2017 http://www.nied.unicamp.br/ojs/index.php/memos.

Conclusions
With this work we aim to define accessibility guidelines to help the development team of TelEduc 5 on implementing a more inclusive e-learning environment.


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