

# Persona Cards: Introducing Users With Diverse Needs To Enhance Accessibility Teaching

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## Motivation

To raise undergraduate students' awareness about accessibility needs, enhancing their knowledge acquisition, training and build capacity, students have to become more familiarized with the diverse needs users may have when interacting with technology. Learning about universal design, accessibility considerations and guidelines that render interactive systems more accessible is key in a world where interactive technologies are widespread.

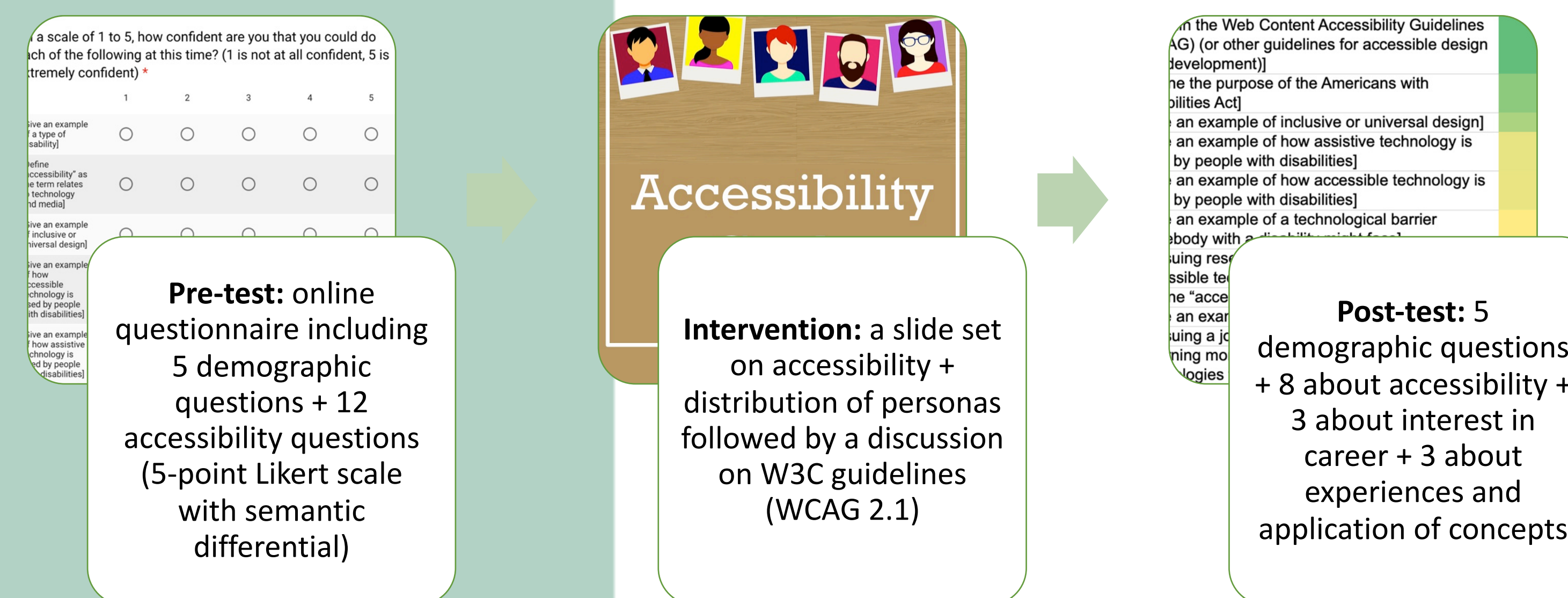
	<b>Visual</b> <ul style="list-style-type: none"> <li>• Colorblindness</li> <li>• Blindness</li> <li>• Low Vision</li> <li>• Macular degeneration</li> </ul>
	<b>Hearing</b> <ul style="list-style-type: none"> <li>• Hard of hearing</li> <li>• Deaf, American Sign Language</li> <li>• Bilingual</li> </ul>
	<b>Cognitive</b> <ul style="list-style-type: none"> <li>• Autism</li> <li>• Down Syndrome</li> <li>• Attention Deficit and Hyperactivity Disorder</li> <li>• Dyslexia</li> </ul>
	<b>Motor</b> <ul style="list-style-type: none"> <li>• Repetitive Stress Injury</li> <li>• Cerebral Palsy</li> <li>• Fatigue and Pain</li> </ul>
	<b>Multiple Impairments</b> <ul style="list-style-type: none"> <li>• Low vision, hand tremor, and memory loss</li> <li>• Deaf and Blindness</li> </ul>




## Goal

To introduce users with diverse needs to undergraduate students, we selected 16 examples of users' profiles from a didactic book on accessibility (A Web for Everyone by Horton and Quesenbery (2014)) and W3C user stories. The specific needs of those users are related to visual, hearing, cognitive, motor or multiple impairments. Each user profile is illustrated and described in a colored 4"x6" card. In a classroom activity, students attend first a lecture on accessibility, then they select two cards for discussion. For each user profile selected, students identify the accessibility guidelines from W3C (the World Wide Web Consortium) that are the most suitable to properly meet users' needs. A pre-test and a post-test were employed to assess the knowledge gained after the intervention.

## Persona Cards

The intervention using persona cards aim at providing students with a new perspective in their accessibility training. The cards illustrate real world scenarios of users with diverse needs interacting with technology. The personas aid students to build empathy, and become more familiarized with users whose needs may be different from them. The intervention is primarily targeted at future designers, programmers, or analysts, but could be generalized to other domains as well.



		
Hand tremor, memory loss, low vision	Down Syndrome	Blind user

## Method

After presenting the lecture with slides and videos, the instructor distributed the persona cards to the students and invited them to identify WCAG guidelines that matched the user profile. Then, a follow-up discussion was conducted seeking to compare, contrast and validate the choices of guidelines. Pre and post-tests were applied to assess the knowledge gained by students after the intervention. When applied in an undergraduate 200-level course of System Analysis and Design with 40 young adults, a statistically significant improvement was noted in the students' performance, regarding their understanding of accessibility as well as their interest in the topic.

## Results

The results indicate that persona cards are effective to promote the discussion about accessibility in class and to engage students in learning about accessibility guidelines. Also, the cards proved to be a low cost and effective approach to illustrate real world scenarios of interaction that may be unknown to the student population, helping them to become more empathetic in what regards diverse users' needs and to build accessible technologies. Students mentioned their willingness to incorporate accessible design practices in the software development.



## Acknowledgment

We thank all the students who participated in the intervention and TeachAccess for the financial support. Teach Access is a collaboration among members of higher education, the technology industry and advocates for accessibility, with a shared goal of making technology broadly accessible by infusing accessibility into higher education, with enhanced training and collaborations with people with disabilities. Teach Access includes members from leading tech companies, academic institutions and disability advocacy organizations and other non-profit institutions.

## References

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