

ARTICULATING TECHNOLOGICAL AND PEDAGOGICAL ACCESSIBILITY FOR ADULT LEARNERS IN DISTANCE EDUCATION

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Project presentation

General context: Research with support from ERASMUS+ European agency funds

IDEA (Implementing a Digital E-learning @lternative)

General objective: develop an accessible and inclusive approach into online training of adult trainers

Leadership : GIP Formation continue et insertion professionnelle, Académie de Créteil (France), with:

- Universitat Autònoma de Barcelona (Spain)
- European Certification and Qualification Association (ECQA, Austria)
- Koena, a French organisation specialised in Web accessibility, and
- Université TÉLUQ (Canada)

Accessibility... a short history

World Wide Web Consortium's (W3C) definition of web or digital accessibility
« means that websites, tools and technologies are **designed** and **developed** so that people with disabilities can use them » (our emphasis)

Implementation of digital accessibility follows W3C's Web Content Accessibility Guidelines (**WCAG**), which are in line with global, UN principles of human and disability rights laws (CRPD)

International standard (ISO/IEC 40500:2012)

2008 : WCAG 2.0 12 rules (SGQRI)

2018 : WCAG 2.1 13 rules (EN 301 549)

December 2022: WCAG 2.2

Chronology of accessibility standards

WCAG 2.0 12 rules (SGQRI)



2012

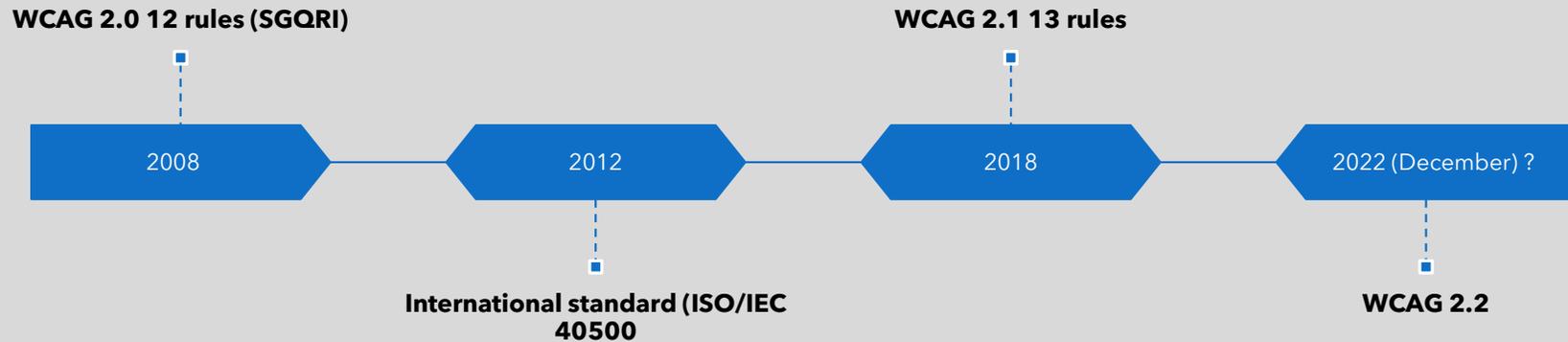
**International standard (ISO/IEC
40500**

WCAG 2.1 13 rules



2022 (December) ?

WCAG 2.2



WCAG principles and rules

4 main accessibility principles:

perceivable, operable, understandable, robust

WCAG 2.0 = 12 rules

WCAG 2.1 = 13 rules

Each rule has three cumulative compliance criteria:

lowest level: A

intermediate level: AA

highest level: AAA

National legislations aim compliance to level AA

Norms and legal requirements: EN 301 549 (EU) and SGQRI 008 2.0

EU : Directive EU 2016/2102

- Harmonized European Standard EN 301 549
- WCAG 2.1

- Quebec: Act to secure handicapped persons in the exercise of their rights, and Quebec Charter of Human Rights and Freedoms
- SGQRI 008 2.0
- WCAG 2.0

EU: WCAG 2.1

Each content has to comply with the 4 main principles

For example, for a video only material (regardless of its publication mode):

Perceivable, Level A: an alternative text or an audio track presenting equivalent information for prerecorded video-only content; captions are provided, except when the video is an alternative for text; an alternative content is provided except when the video is an alternative for text;

Perceivable, Level AA: includes Level A requirements, and:

Audio description is provided

Operable, understandable, robust principles: not relevant for video

Such details are explicated for every type of content (text, audio, images, graphics...).

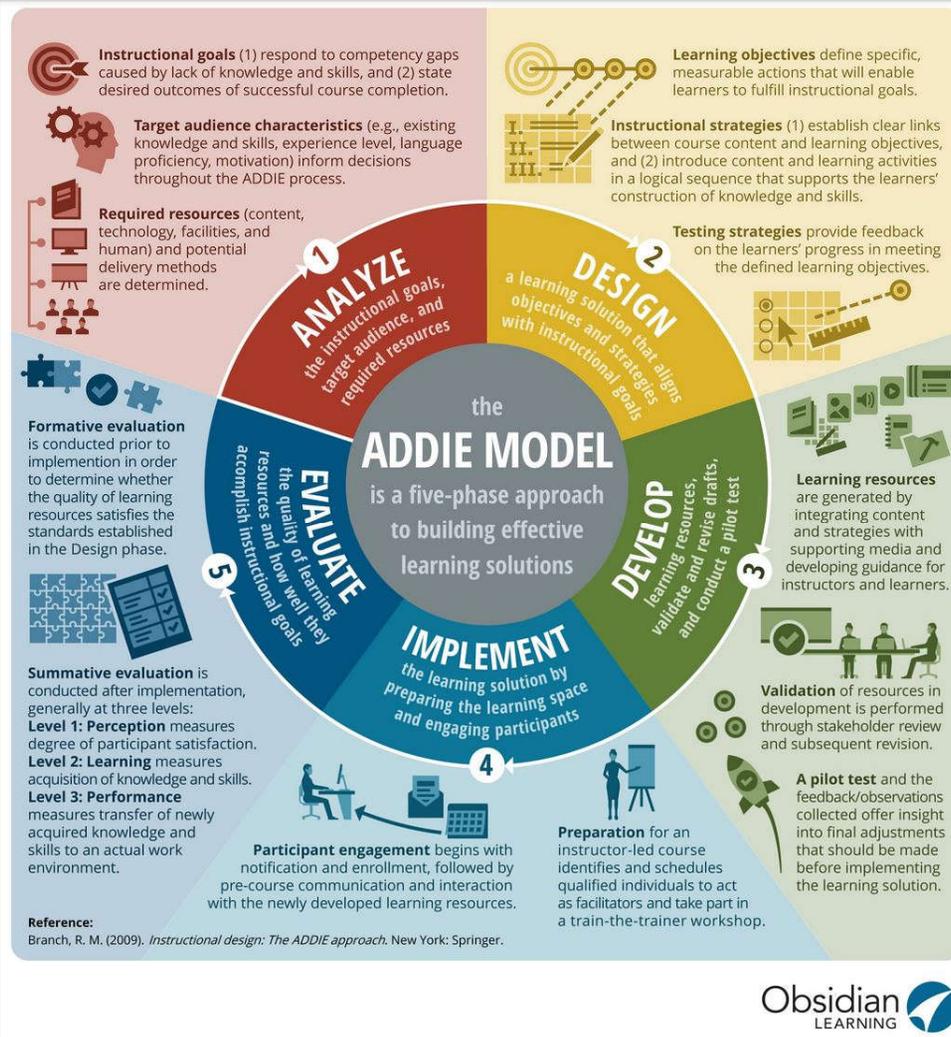
With other types of contents, one might see additions from WCAG 2.0 to 2.1.

The ADDIE model

Working methodology at TÉLUQ U. (and others) for design and development of online courses

ADDIE offers a framework for design and development of courses, online or not - without prior emphasis on accessibility or inclusiveness

Is there a model integrating an approach relevant for accessibility and inclusiveness?



Source:
<https://www.saperessere.com/instructional-system-design-modello-addie/>

Universal Design for Learning (UDL)

release of version 2.2 of the UDL guidelines also makes evident a vertical orientation, in which each principle has three levels – *Access*, *Build*, and *Internalize* (Center for Applied Special Technology (CAST, 2018). Similar to the foundation of a building (as illustrated in Figure 2), *access* is foundational in the UDL framework, as it supports learners to be able to *build* and *internalize*. The ultimate goal of the framework is equipping learners to become *purposeful and motivated*, *resourceful and knowledgeable*, and *strategic and goal-directed* (CAST, 2018).

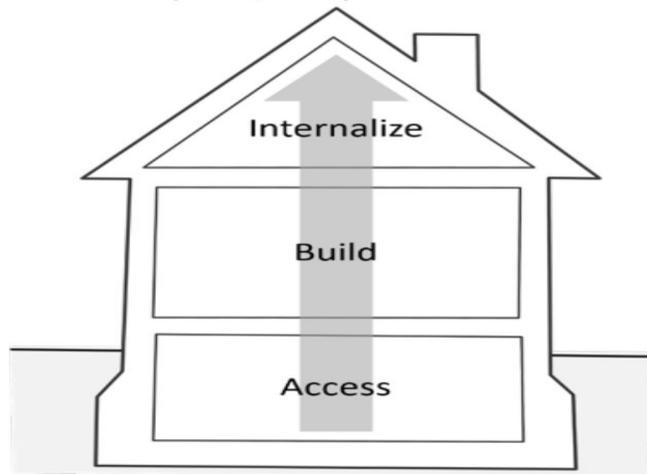
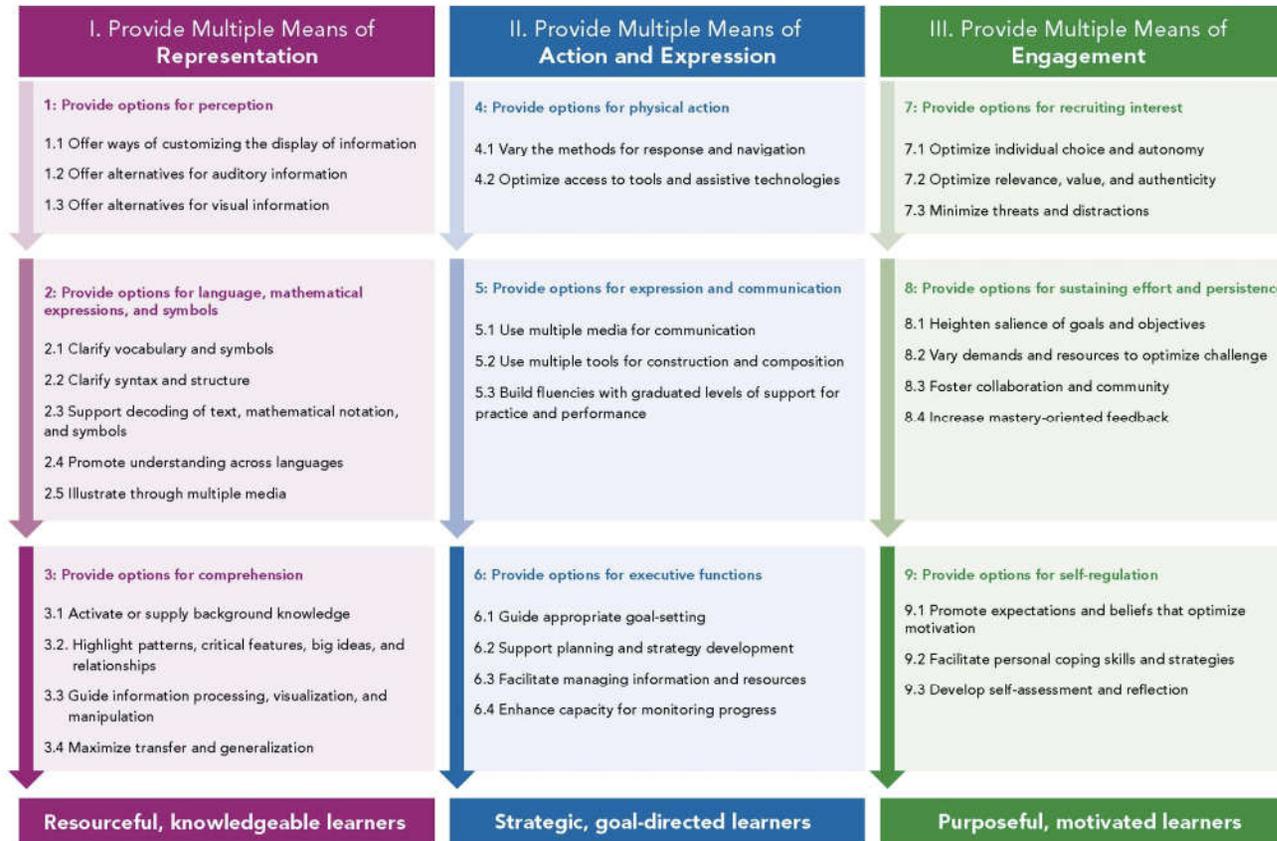


Figure 2. Access as the foundation of UDL

- UDL's 3 steps: access, build, internalize
- Emphasis on accessibility and inclusiveness
- Gives indications on what to take into account, features, but not how to design, prepare and develop an accessible and inclusive online course
- Steps to follow to attain goal? covered by ADDIE

Source: Gronseth, S. (2018). « Inclusive design for online and blended courses: Connecting Web Content Accessibility Guidelines and Universal Design for Learning ». *Education Renaissance*, 7 (14-22).

Universal Design for Learning Guidelines



UDL (continued)

UDL guidelines offer “a set of concrete suggestions that can be applied to instructional design” (<https://udlguidelines.cast.org/more/frequently-asked-questions>)

One could say that UDL puts emphasis on D (design), D (development) and I (implementation) phases, but neglects A (analysis) and E (evaluation) phases

... but UDL guidelines are not meant to offer steps of designing an inclusive course

ADDIE model’s five phases (Analysis, Design, Development, Implementation and Evaluation) are considered as the typical process of instructional design, for both face-to-face and distance learning delivery modes

... but the focus of the ADDIE model is not on the accessibility and inclusiveness of a distance learning course

Therefore... there is a need for a method of instructional design that integrates actions proposed by UDL and W3C recommendations (WCAG) into corresponding ADDIE phases.

Accessibility and inclusiveness: users' perspectives

How do norms translate into accessibility and inclusiveness?

Research project looking at users' experience with websites satisfying international norms (WCAG 2.0) (COPHAN, 2016)

Results:

- some websites satisfy most regulatory requirements but fair poorly in users' evaluation
- or reverse: other websites are less satisfactory on normative scales, but end up being well rated by users' experience

Factors explaining this paradox:

- website's programming failures, leading to navigation problems on internet
- unclear or counter-intuitive information structure
- bad information quality
- general lack of clarity

CONCLUSION (1/2)

- Accessibility has gained ground through various national legal frameworks (EU : WCAG 2.1, soon 2.2; Quebec, WCAG 2.0)
- but... Actual access is not granted by only applying accessibility standards
- End users' experience appears crucial

CONCLUSION (2/2)

- ADDIE suggests steps to design and develop online courses, but needs further details to include accessibility and inclusiveness
- UDL details features to take into account for accessibility and inclusiveness but lacks detail on how to actually proceed into design and development of online courses
- Looking ahead: propose steps to build an accessible and inclusive approach into design and development steps of online courses for all adults