



Making Democratic Deliberation and Participation more Accessible: The iDEM Project

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Accessibility and Natural Language

- Information & Accessibility
 - Access to information = Universal Declaration of Human Rights
 - Accessibility = UN Convention on the Rights of Persons with Disabilities (CRPD)
- **Text** is still the most widespread source for transmission of information and human knowledge
- It is nowadays widely accessible through the Internet, however **information in written form** can be **difficult to understand** by a number of people
- People who encounter difficulties making meaning out of content are a diverse group of individuals



Why is accessibility important in a democracy context?



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- Participatory processes exclude people with language comprehension difficulties
 - electoral programs
 - information about candidates
 - democratic debates



Why is accessibility important in a democracy context?

- Participatory processes exclude people with language comprehension difficulties
 - electoral programs
 - information about candidates
 - democratic debates
- Information in democracy can be very challenging

The American Constitution

“No Person shall be a Representative who shall not have attained to the Age of twenty five Years, and been seven Years a Citizen of the United States, and who shall not, when elected, be an Inhabitant of that State in which he shall be chosen.”



“A representative to Congress must be 25 years old or older and be a citizen for at least seven years. He must live in the state that elects him.”

(Elizabeth Claire, Easy English NEWS)

Making Texts Easy-to-Read and Understand

- Difficult texts: long sentences, uncommon vocabulary, complex terms...

*España se constituye en **un Estado social y democrático de Derecho**, que **propugna** como **valores superiores de su ordenamiento jurídico** la libertad, la justicia, la igualdad y **el pluralismo político**.*

- “Easy-to-read” texts: shorter sentences, more common vocabulary, explanations...

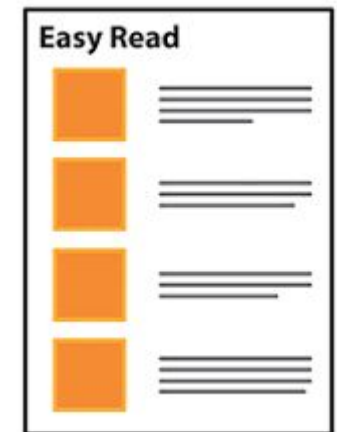
*España es **un país democrático y respetuoso con los derechos de las personas**. Los valores más importantes son la libertad, la justicia, la igualdad y el respeto de **las distintas ideas políticas**.*

- “Easy-to-read” texts may help several people: with dyslexia, second language learners, migrants, non-experts, deaf people, people who need assistive technology, etc.

Making Texts Easy-to-Read and Understand



- Easy-to-Read, Easy Language, Plain Language ...
 - “A language variety which aims to make information more comprehensible and accessible”
- Standards or guidelines for Easy-to-Read usually for content creators
 - Words, Numbers
 - Sentences, Information order
 - Layout, Images
- User-centered design and testing
 - Involve target users if possible from the beginning



Accessibility and Natural Language Processing

- **Natural Language Processing (NLP), Accessibility, and Inclusion:**
 - **Text simplification**
 - The process of automatically transform a text into a more accessible easy to read and understand equivalent
 - Text simplification started long but with the objective of ***simplifying text for their computational processing***
 - Nowadays, text simplification is more focused on societal contributions such as ***facilitating access to information***

Simplifying with Natural Language Processing

Lexical Simplification (LS): **Identifying complex words** / phrases and **replacing them with “easy to read context aware synonyms”** so that meaning is preserved

*This period **spanned** the years from 1278 through 1288* □ *This period **covered** the years from 1278 through 1288.*

Syntactic Simplification (SS): **Identifying complex syntactic structures** in sentences and **propose simpler, meaning “preserving” sentences**

*The festival was held in New Orleans, **which was recovering from the hurricane.*** □ *The festival was held in New Orleans. **New Orleans was recovering from the hurricane.***

iDEM project: Innovative and Inclusive Democratic Spaces for Deliberation and Participation

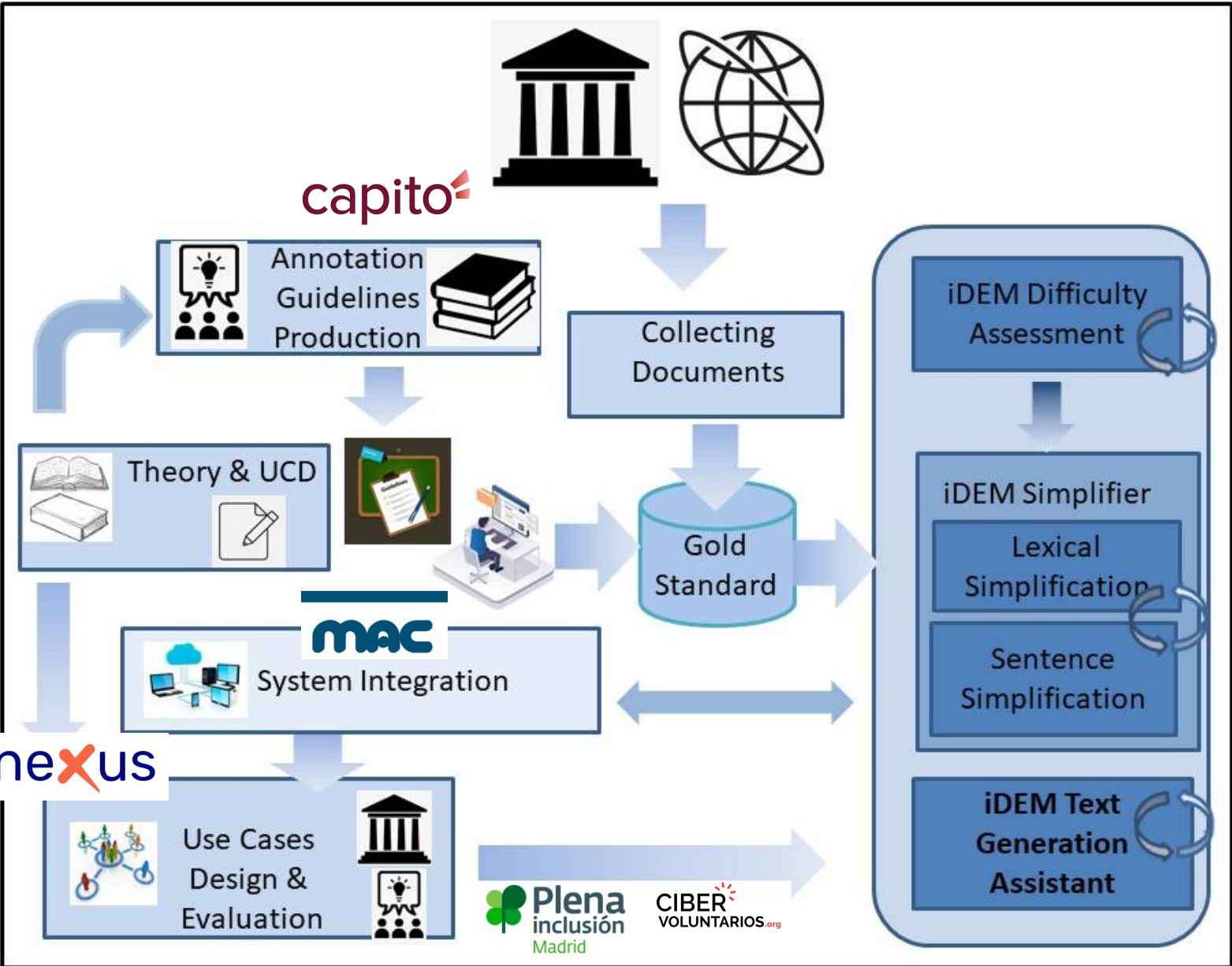


- iDEM is an Horizon Europe program funded under the Horizon-CL2-2023-Democracy-01-07 CALL
 - Understand the linguistic barriers people face in democracy
 - Implement NLP and AI tools to simplify difficult texts
 - Empower citizens with tools to participate in democracy
 - Evaluate the solution with our users

Requires a multidisciplinary approach



Our Approach



upf. Universitat Pompeu Fabra Barcelona

CIBER VOLUNTARIOS.org

nexus



SINDICATURA DE GREUGES DE BARCELONA

act:onaïd REALIZZA IL CAMBIAMENTO

Anffas ASSOCIAZIONE NAZIONALE DI FAMIGLIE E PERSONE CON DISABILITÀ INTELLETTIVE E DISTURBI DEL NEUROSVILUPPO dal 1958 la persona al centro

nexus

Use Cases Design & Evaluation

Plena inclusión Madrid

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Piloting the iDEM solution

- **Piloting our solution in three different languages**

- Catalan, Italian, Spanish
- Technology also available in English



- **Three different cities in Europe**

- **Apply our solution to different deliberative processes**

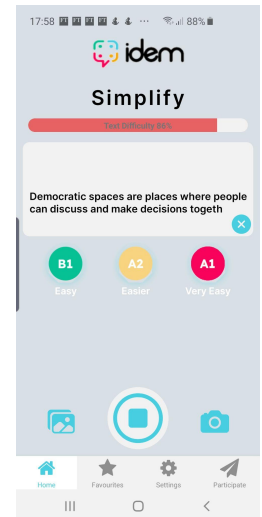


- **Include a diverse sample of the population**



- people who have reading/writing difficulties: cognitive disabilities, migrants, the elderly

- **Taking into account ethical principles and data protection restrictions**



Summary and Current Work

- Several people are currently excluded from democracy due to language comprehension barriers
- The iDEM project wants to make democratic spaces more accessible providing text simplification solutions
- Current work is looking into
 - Understanding barriers in democratic processes
 - User-centered design
 - Data collection and annotation
 - Application prototyping
 - Lexical complexity prediction and lexical simplification





Thank you!

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