



Universidad Politécnica de Madrid

Escuela Técnica Superior de Ingenieros Informáticos

# Data Science Seminars

Cognitive Accessibility and Easy-to-Read Methodology

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## 1 Introduction

The purpose of this report is to evaluate the application of *FACILE* in identifying linguistic challenges within different articles and adapting them to align with the *Easy-to-Read (E2R)* guidelines. Two web pages were selected and analyzed using *FACILE* to identify potential readability issues and evaluate any errors in the tool's decisions.

## 2 Selected Web Pages

The analysis was conducted on the following two web pages:

- **El secreto del éxito de ‘La Revuelta’ es que está en todas partes:** This article explores the presence and influence of ‘*La Revuelta*’, analyzing the factors that contribute to its success and impact. <https://theconversation.com/el-secreto-del-exito-de-la-revuelta-es-que-esta-en-todas-partes-242411>
- **La comunicación clara como herramienta para mejorar las alertas por emergencia:** A discussion on how a clear communication improves the effectiveness of emergency alerts for the general public. <https://theconversation.com/la-comunicacion-clara-como-herramienta-para-mejorar-las-alertas-por-emergencia-243900>

## 3 Issues Identified Using FACILE

*FACILE* implements the *Una Norma Española (UNE)* recommendation standards for clear communication to evaluate the readability of the articles, identifying specific linguistic complexities and errors related to **vocabulary**, **expressions** or **phrases and sentences**.

- **Vocabulary:** Flags adverbs ending in *-mente*, acronyms, and abbreviations that should be avoided.
- **Expressions:** Identifies gerunds, verb periphrases, and passive voice, which should be minimized for clarity.
- **Sentences:** Detects complex sentences, negative constructions, and explanations between commas, encouraging simpler and more direct phrasing.

## 4 Benefits of FACILE

*FACILE* was a valuable tool when implemented on the web pages selected. It provided a detailed analysis for enhancing text clarity by identifying readability issues.

- Firstly, it detects passive voice, complex sentences, and unnecessary periphrasis.

*“Los avisos tienen que estar pensados, escritos y diseñados para asegurarse no solo de que se reciban, sino de que sean leídos, entendidos y provoquen una respuesta concreta en la ciudadanía”*

*FACILE* identifies this as a complex sentence and suggests a simpler version such as:

*“Los avisos deben ser claros para que las personas los entiendan y respondan de inmediato”*

- In addition, it highlights areas where vocabulary simplification is needed, for example in the case:

*“instrumento de escritura”* with *“bolgrafo”*

Or other simplifications, to adhere to *UNE* guidelines that discourage adverbs ending in **-mente**.

“*frecuentemente*“ with “*a menudo*“ or “*con frecuencia*“

Also, other suggestions to ensure compliance with *UNE* readability standards such as replacing:

“*cuarentamil*“ with “*40 000*“

- Furthermore, it identifies and minimizes the use of acronyms and abbreviations that may lead to misunderstanding for users that are not familiarized with the specific terminology.

“*RTVE*“ might be unclear to some audiences. Then, it is recommended to use “*Radio Televisión Española*“ at least once in the text

- Finally, it prioritizes the use of direct and affirmative sentences, reducing negative phrasing and double negations.

“*No es imposible de entender*“ replaced by “*Es fácil de entender*“

## 5 Challenges and Limitations of FACILE

Despite its benefits, FACILE has many limitations that compromise its efficiency in readability testing, leading to potential errors or unnecessary corrections.

- Firstly, it flags words unnecessarily, leading to unnecessary rewrites.

“*Todas las desgracias de la gente provienen de no hablar claro*“, “*decía un personaje del libro La peste de Albert Camus, publicado en 1947*“

This is a direct quote from a literary work with a rhetorical purpose and, therefore, cannot be simplified without losing its meaning.

- Additionally, it presents a lack of contextual understanding of some terms that are falsely classified as a readability problem.

The term “*X*“ is flagged for using Roman numerals, which is not recommended according to *UNE* standards. However, in the context of the text, it refers to the social media app formerly known as “*Twitter*“.

- Moreover, certain elements, like gerunds and periphrasis, are flagged repeatedly in similar contexts, which may not always require correction.

“*El programa viene cosechando éxito desde su estreno*“

*FACILE* marks “*viene cosechando*“ as incorrect, while in another sentence with a similar construction, it does not flag it.

## 6 Improvements for FACILE

To enhance the effectiveness of *FACILE*, several improvements can be made:

- Firstly, as commented above, it is necessary to incorporate better context analysis to avoid flagging literary or rhetorical elements that don’t need simplification.
- Similarly, it is required to improve differentiation between actual readability issues and stylistic choices, reducing unnecessary corrections.
- In addition, the vocabulary suggestions must be enhanced to provide more contextually appropriate alternatives based on tone and formality.
- Finally, for a more user-friendly approach, *FACILE* could allow users to set custom preferences or exceptions based on their specific writing style or domain.

## 7 Conclusion

*FACILE* proves to be a strong tool for evaluating and adapting texts to improve readability and simplify complex content. However, its limitations in handling figurative language, generating false positives, and lacking a deep contextual understanding make it unsuitable for every situation. Even though it excels in certain contexts, these limitations highlight the need for complementary tools or human interaction to ensure accurate and context-sensitive text adaptation. For this reason, further advancements in its ability to understand complex language and context are essential.