ARE EASY-TO-READ TRAINING AND STANDARDS IN SYNC?

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Abstract: After two Erasmus+ projects researching the competencies of Easy-to-Read professionals and two standards published - one international and one national, the question arises whether training and requirements are developing in sync. This article explores standards and skills cards that describe the competencies creators, facilitators, and validators of Easy-to-Read content have or should acquire during training. Specifically, this case study seeks to identify whether the skills cards created during the Erasmus+ projects EASIT and TRAIN2VALIDATE account for the competencies set out in the international standard ISO/IEC DIS 23859-1 Guidance on making written text easy to read and the Spanish standard UNE 153101 EX Easy to read. Firstly, the study uses primary and secondary data to determine the comparability of the standards and training programmes in terms of goals, processes, and professional roles. Secondly, the content is annotated to identify whether there is a common understanding of the knowledge, skills, and attitudes that professionals should demonstrate. The results show that standards and training programmes are developing in sync with training programmes showing a more comprehensive range of competencies, including working contexts and cross-functional areas, such as safety and hygiene.

Keywords: Easy-to-Read; skills cards; standards; training.

1. Introduction

Vocational education programmes aiming at raising trainees' skills can undergo accreditation to prove the quality of the training providers and programmes. The overall motivation is to deliver transparent, competitive, and high-quality training to educate professionals who can deal with market demands and challenges (Cedefop, 2011). According to Cedefop (2009), accreditations can be carried out based on quality standards.

Standards accounting for the quality validation of programmes can be of different types. On the one hand, these standards can be requirements that account for client needs, expectations, and individual demands (Cedefop, 2011). On the other one, standards can also be documents created by international or national standardisation organisations, such as ISO (International Standardisation Organisation: www.iso.com) or the Spanish UNE (Asociación Española de Normalización: www.une.org).

Standardisation organisations provide requirements, specifications, or guidelines for products in the widest sense. The overall goal is to make products "safe, reliable, and of good quality" (ISO, 2021a; Small Business Standards, n.d.; Oster, n.d.). Currently, there are two standards in Easy-to-Read: the ISO/IEC WD 23859 Guidance on making written text easy to read and easy to understand (1), dated 2021, and the Spanish standard UNE 153101:2018 EX - Easy to read - Guidelines and recommendations for the elaboration of documents (2).

One question arises when using standards to assess training, i.e., to what extent standards and training share the same understanding with regards to goals, processes,

and roles. Concerning its goals, the ISO/IEC WD 23859 addresses the United Nations Sustainable Development Goals (3), with a focus on education and equity. The standard provides guidance in three processes: creation, adaptation, and evaluation of written content that should be easy to read and to understand for anyone with reading comprehension difficulties (ISO, 2021b, p.3). As for the roles, the standard does not clearly define the professional roles involved in the creation or adaptation processes and uses the general terms author, users, and experts instead (ibid, p. 8). An exception is facilitators, a role the standard explicitly mentions in the context of user evaluation to refer to those professionals conducting evaluation sessions with users, i.e., persons with reading comprehension difficulties (ibid, p. 9).

UNE standards also aim to support persons with reading comprehension difficulties and the right of access to information, as stated in the Universal Declaration of Human Rights (United Nations, 1948) and ratified in the Convention on the Rights of Persons with Disabilities (United Nations, 2008). UNE has a dedicated Technical Committee 153 in charge of assistive technologies for persons with disabilities, which has also led the development of the standard. The Spanish standard about Easy-to-Read delivers similar guidance as the ISO one and has two parts addressing different reading needs. The first one is entitled UNE 153101 EX Easy to read Guidelines and recommendations for the elaboration of documents, and the target readers are persons without reading difficulties. Conversely, the second part is written in Easy-to-Read to address the reading needs of validators, as described in the title: UNE 153102 EX Guide in Easy-to-read for validators of documents.

The Spanish standards focus on Easy-to-Read as a writing method for a readership that has reading comprehension difficulties (UNE, 2018 p. 7). While the processes described in the Spanish standards coincide with those included in the ISO standard, i.e., creation, adaptation and validation, terminology differs slightly with regards to Easy-to-Read and validation.

The term Easy-to-Read is defined in the UNE standard as a method to create or adapt written texts irrespectively of their presentation format, e.g., digital, paper. This notion of a text being fixed by writing leaves out oral, spontaneous texts. The ISO standard tries to react to this limitation by introducing the term Easy Language (ISO, 2021b, p. 2): “Note to entry [Easy Language]: Easy language is often referred to as ‘easy-to-read’ but in this document, the term ‘easy language’ is preferred as it can be applied not only to written content which is read but also to oral or multimodal content.”

Beyond any good intention to expand the scope of Easy-to-Read to oral production, this attempt may lead to confusion. On the one hand, the term Easy Language appeared after Easy-to-Read and, thus, Easy-to-Read cannot refer to it, but the other way around. On the other, experience-based Easy-to-Read guidelines have already described the use of Easy-to-Read in audio and multimodal content (Inclusion Europe, 2009; IFLA, 2010), as well as empirically-based research (Bernabé & García, 2019; Bernabé & Orero, 2019, Bernabé, 2020). Nonetheless, the terms Easy-to-Read in UNE and Easy Language in ISO represent the same concept and can, thus, be used for this case study.

Regarding the term ‘validation’, the UNE standard defines validation as "The process of evaluating the comprehensibility of an Easy-to-Read document, which has to be carried out by the end users." [translation by the authors] (UNE, 2018, p. 6). This definition corresponds with the ISO notion of ‘user evaluation’ (ISO, 2021b, p. 3): "Process to determine whether content is easy to read and easy to understand. Note to

entry: This process should be iterative and include not only a technical evaluation by experts but also, and most importantly, an evaluation with end users."

These differences in terminology as a problem across countries and approaches to Easy-to-Read have already been spotted and discussed by Bernabé and Cavallo (2022) in a previous article. Despite the terminology issues, both standards pursue the goal of facilitating comprehension and include end-users in the comprehensibility assessment of texts, a process that is guided by a facilitator and carried out by persons with reading difficulties, i.e., validators.

This cohesion regarding goals, processes, and roles is also found between the standards and the two Erasmus+ projects, EASIT and TRAIN2VALIDATE. Erasmus+ KA203 projects are strategic partnerships supported by the European Commission. The aim is to bring together European education institutions and stakeholders to deliver tangible outputs that satisfy market needs, such as the lack of training for emerging job roles in the field of Easy-to-Read (E2R). EASIT ran from 2018 to 2021 and delivered curricula for prospective creators of E2R audiovisual content and news. For its part, TRAIN2VALIDATE started in 2020 and will end in August 2023. The aim of TRAIN2VALIDATE is to deliver competence-based training for facilitators and validators (Dejica et al. 2022) as professionals ensuring content comprehensibility.

Both projects and the standards address the need for end-user validation of newly created content, adaptations or translations. Terminologically, the projects use the terms Easy-to-Read for the methodology, Easy language for the language as a historical object (Coseriu, 1986) and validator for end users who participate in validation sessions with facilitators. This conceptual agreement allows using the standards to explore whether the standards and the new training programmes are in sync in terms of the necessary knowledge, skills, and attitudes. Exploring this synchronization will enable us to answer whether the standards' demands are being accounted for in training programmes.

Before starting the next section, Table 1 summarizes the different terms used in the sample documents.

Term	Source	Meaning
Advisor	EASIT	See Validator
Adaptor	ISO/IEC WD 23859 UNE 153101 EX EASIT TRAIN2VALIDATE	A person who creates an E2R version of an original, which was not in E2R. Adaptors can create E2R versions in the same language or in a different one. Adaptors are also called translators in some countries.
Creator	ISO/IEC WD 23859 UNE 153101 EX EASIT TRAIN2VALIDATE	A person who creates an E2R text from scratch.
Easy Language	ISO/IEC WD 23859	Language variety that results from applying the E2R language guidelines.
Easy-to-Read	UNE 153101 EX EASIT TRAIN2VALIDATE	Language modality and methodology used to create E2R content. The guidelines and recommendations include linguistic rules, design

Term	Source	Meaning
		techniques as well as the use of paratextual features.
Evaluator	ISO/IEC WD 23859	See Validator
Facilitator	ISO/IEC WD 23859 UNE 153101 EX EASIT TRAIN2VALIDATE	A person in charge of organising validation processes and conducting validation sessions.
Producer	EASIT	See "Creator"
Translator	ISO/IEC WD 23859 UNE 153101 EX EASIT TRAIN2VALIDATE	See “Adaptor”
Validator	UNE 153101 EX EASIT TRAIN2VALIDATE	A person with a reading difficulty who validates the comprehensibility of a text in E2R. Validators carry out validations together with facilitators.
Writer	ISO/IEC WD 23859	See “Creator”

Table 1. Terms on professions around Easy-to-Read

2. Methodology

The method used in this analysis is exploratory research of manually annotated data. Explorative research is often used for topics that are at an early developmental stage and do not aim at providing a conclusive answer but to identify issues or specific research questions for future research, e. g. effectiveness of training (Saldanha & O’Brien, 2014; Singh, 2007; Williams & Chesterman, 2002).

Data annotated manually by experts are used in the early stages of data model development (enfuse, 2020). While creating a data model is not the purpose of this study, semantic annotation provides us with a tool to be transparent, draw conclusions and enable others to replicate the outcome. Overall, this approach aims to fill the gap in comparing training documentation and standards, and for the lack of annotation vocabularies in the fields of accessibility and E2R. The comparison process used in this study follows the same steps used in curricula mapping, as proposed by Greatorex et al. (2019), but adapted to the fact that two of the documents are not curricula:

1. Define the study aims and use.
2. Decide which documents will be considered.
3. Determine the document features that will be the basis for the comparison.
4. Collect relevant documentation and sources of data.
5. Extract data and input using the annotation scheme.
6. Consolidate findings.

2.1. Annotated documents

The annotated data are from primary research, i.e., three skills cards, and secondary research, i.e., the two standards. This is possible because one author has participated as a researcher in both projects, and the other one has participated in one project as a leader and researcher, and was a member of the working committee that created the Spanish standard and as a consultant for the ISO standard.

2.1.1. The skills cards

The input for the skills cards was collected in both projects in online surveys designed to gather current knowledge about Easy-to-Read training across Europe (Gillham, 2008; Munn and Drever, 2004). The skills cards in TRAIN2VALIDATE and EASIT mapped not only the data gathered online, but also data obtained by revisiting skills cards from other Erasmus+ projects, such as LiveTextAccess (www.Ltaproject.eu) and ILSA (www.ilsaproject.eu). This process in TRAIN2VALIDATE also included skills frameworks from a repository of specialised literature on Easy-to-Read and interviews with current Easy-to-Read facilitators and validators.

The knowledge mapping into the skills cards was carried out using learning outcomes, as recommended by European Centre for the Development of Vocational Training (Cedefop, 2016). Learning outcomes are statements about the necessary knowledge, skills, and attitudes trainees need to develop during training. As such, learning outcomes are a tool to foster transparency across qualification frameworks and countries (Cedefop, 2016; 2022).

Table 2 shows the input collected in the projects, organised by competence areas and professional profile, i.e., C for creator/adaptor/translator, F for facilitators and V for validators. Percentages express how often respondents selected a knowledge category for a profile.

Topics grouped by competence areas	C	F	V
ACCESSIBILITY AND USERS			
Target groups: types of disabilities, needs, perception and cognitive processing	84%	82%	-
LINGUISTICS			
Language and linguistics: e.g., knowing the principles of text analysis, text cohesion and coherence, language complexity, simplification methods	44%	-	-
Cognitive linguistics: e.g., knowing the principles of language processing	23%	-	-
Reading: print and multimodal texts, and reading disabilities	21%	-	-
Genre knowledge: familiarity with the content and structure of different text types	-	57%	41%
E2R SPECIFIC			
Basic validation skills and strategies to develop validations	-	78%	-
Easy-to-read principles, guidelines, recommendations, and standards	79%	-	73%
General Easy-to-Read knowledge: history, guidelines, target groups	10%	78%	64%

MANAGEMENT			
Time management skills	-	61%	-
Organisation and time management skills	-	78%	38%
VALIDATION/FACILITATION			
Familiarity with basic communication and mediation principles	-	71%	-
Writing skills (including punctuation and spelling)	-	-	52%
Active listening skills	-	-	73%
Skills for working in teams	-	-	71%
Reading skills	-	-	70%
Vocal and communication skills	-	-	64%
TECHNOLOGIES			
(Media) accessibility: standards, legislation, guidelines, principles and applicable scenarios, technologies, etc.	34%	59%	-
Computer skills: including dedicated software and new technologies	-	66%	38%
Multimodality: including moving images, pictures, tone of voice, noises, background music, etc., and the role of paratextual information	11%	53%	36%

Table 2. Input comparison among the EASIT (C) and TRAIN2VALIDATE (F and V) surveys

Table 2 shows stakeholders' perceptions about the required skills, knowledge and attitudes that Easy-to-Read professionals should have. The competence areas about Easy-to-Read specific knowledge and technologies are shared by the three profiles. While creators and facilitators share the competence area of Accessibility and End users, facilitators and validators share the competence areas Management and Validation. As it might have been anticipated, creators are expected to demonstrate higher linguistic skills than the other two profiles. Interestingly, facilitators did not receive any mention in this area.

The final structure of the skills cards shows how the online data was complemented with knowledge from the secondary sources also consulted during the design. Table 3 shows the final mapping for the three profiles:

Area	**C**	**F**	**V**
Accessibility and Users	- Human diversity - What is accessibility - What is universal design	- Accessibility and Universal Design - End-users and needs	- Accessibility and Universal Design - End-users and needs
Linguistics	- The language of E2U	- Basic linguistic knowledge - Analysis of original texts	- Basic linguistic knowledge - Analysis of original texts
E2R	- Understanding E2U - Legislation, standards and guidelines - Processes - The language of E2U - Visual presentation	- The process of creating easy-to-read texts - Text production using easy-to-read guidelines - Easy-to-read facilitation strategies	- The process of creating easy-to-read texts - Text production using easy-to-read guidelines - The easy-to-read validation process

Area	C	F	V
		- Quality and reporting	
Management skills	- Interpersonal skills - Personal skills	- Teamwork skills - Planning and time management skills - Skills to apply in working environments - Entrepreneurial skills	- Teamwork skills - Skills to apply in working environments - Entrepreneurial skills
Professional skills	- Audiodescription - Subtitling - Audiovisual news - Linguistic specificities of audiovisual content	- The facilitator's professional profile	- The validator's professional profile
Technologies	- What is media accessibility - Media accessibility services - Technical aspects	- Computer skills	- Computer skills - Advanced computer skills
Other		- Cross-functional skills	- Cross-functional skills

Table 3. Competence areas in the skills cards

2.1.2. The standards

Standards are technical documents issued by standardisation organisations following a recommendation from stakeholders in a domain of expertise. Standards can be applied voluntarily or become mandatory if the standard is referenced in regulations or directives. Standardisation organisations operate through technical committees in which stakeholders of a specific economic field discuss the guidelines that will define the quality of a product or a service (Your Europe, 2022)

Developing a standard can be initiated by stakeholders of a market sector or when a standardisation organisation itself identifies a need. The standardisation organisation starts the process by consultations with the stakeholders about the need for a standard. In case of positive feedback, the standardisation organisation constitutes a working group. The members meet regularly to discuss the contents and elaborate a draft following the organisation's guidelines. The working group includes representatives of the sector who aim to defend their interests. After the first draft is agreed upon, an external consultation takes place. During this stage, stakeholders outside the working group are asked to comment on the draft. Once the external consultation is closed, the working group revises the content and agrees on a final version. The final draft is then published as a standard and can be purchased through the organisation's webpage. (UNE, 2019)

Because national standards are often the base for an international standard, they follow a similar structure. While skills cards and standards have different structures and content, both include process-related terms and process descriptions. These common sections served as the basis for the comparison, as described in the next section.

2.2. Annotation

Manual annotation by experts was used to identify the knowledge, skills or attitudes associated with the activities that professionals need to perform on their jobs. The annotation was carried out manually following the agile annotation proposed by Voormann and Gut (2008) and tested empirically by Alex et al. (2010) to extract data from curricula vitae for matching applicants to job offers. To foster sustainability and reproducibility, all documents were doubly annotated to allow for inter-annotator agreement (IAA).

The idea behind the agile approach is to extract data faster than in linear annotation and to correct potential mistakes in the iteration loops. Moreover, the iterative approach allows for detecting errors in the annotation guidelines and correcting them timely. Because literature on curricula annotation is scarce, iterations were considered key to the schema creation. All annotated sources were available as digital documents. All documents were converted to PDF before annotation. The pre-processing also included sentence boundary detection and correction, where necessary. Annotators were free to choose the annotation order, however, they were requested to limit their annotations to two daily to avoid accumulation.

The annotation schema was generated in several iterations. In the first, each annotator performed an annotation in a randomly-assigned document from the sample. This cycle led to a set of sections and named entities that occur within the standards and the skills cards. For example, in the standards, the sections referring to knowledge (KNOWLEDGE) are entitled General Terms and Framework. In contrast, the section Process considerations refers to procedures and the ability to perform tasks, i.e., skills (SKILLS). Some examples of named entities in these sections are Universal Design (ACCESSIBILITY), Easy-to-Read (E2R), validation (VALIDATION), adaptation (ADAPTATION), and facilitation (FACILITATION). Lastly, tentative binary relations were discussed, and a first set was created (e.g., know accessibility [ACC-KNOW].

Then, a second annotation was carried out in the standards using the updated schema. After that, a feedback session was organized to revisit the schema and discuss uncertainties. As a result, two new entities were added: MAG, for management, and PROF, for profession, and the corresponding relation types. The last iteration included all documents, providing 962 tokens summing the ones from skills cards and the ones from standards. A total of 5 sessions took place during annotation to clarify ambiguity or missing labels. Prior to the sessions, the IAA was registered. After the sessions, annotators were asked to update the annotated data where necessary.

2.2.1. Annotation schema

The final annotation schema includes 15 entity types that refer to the formula What, How, and Context that enables a job holder to accomplish the activities that describe their job (Quinones, & Eherenstein, 1997). The counterpart of these items being acquired skills described as learning outcomes in training (Kraiger, Ford, & Salas, 1993; Cedefop, 2022).

Named Entities

Annotators marked all mentions of the named entities in all documents. Furthermore, annotators were asked to write down difficulties during the process and to actively call up sessions to clarify doubts. Table 4 shows the set of named entities:

- Three entities corresponding to the learning categories knowledge, skills, and attitudes.
- Four entities to process (i.e., creation adaptation, facilitation, and validation).
- Eight to contexts of expertise.

Table 5 shows the synonyms used to avoid confusion or to reduce nested entities, as in the case of Universal Design and accessibility (ACC).

Entity type	Description
ACCESSIBILITY	Terms related to the concept of accessibility or accessible design, except for standards, guidelines, and regulations.
ADAPTATION	Adaptation of an original to an Easy-to-Read version.
ATTITUDE	Viewpoint, perception or belief, including motivational disposition
CREATION	Creation of a text from scratch.
CULTURE	Terms related to cultural aspects.
E2R	Easy-to-Read as a language or a method.
FACILITATION	Facilitation of validation sessions to assess comprehensibility of texts
IT	Terms related to Information Technology
KNOWLEDGE	Factual and declarative knowledge, knowledge organisation or metacognitive strategies
LINGUISTICS	Terms related to Linguistics
MANAGEMENT	Terms related to management
PROCUREMENT	Terms related to the fulfilment of contracts to provide E2R content.
PROFESSION	Terms related to the profession
REGULATIONS	Terms related standards or regulations
SKILLS	Ability to perform a task applying knowledge.
USERS	Persons who are the indented readers of E2R content
VALIDATION	Validation by end-users of a text in Easy-to-Read.

Table 4. Entities and descriptions

Entity	Synonyms
Accessibility	Disability, Design for All, Universal Design, barrier-free design, inclusive design, transgenerational design.
Adaptation	Translation
Validation	User evaluation

Table 5. List of synonyms

Sections

Annotators were asked to leave out sections that contain information about the implementation of single Easy-to-Read guidelines. In the case of the ISO standard, the excluded sections were 6. Guidance on language in written texts, 7. Guidance on content presentation, and 8. Guidance on the audio presentation of written text. The sections excluded from the UNE standard included 6. Guidelines and recommendations for writing texts in Easy-to-Read, 7. Guidelines and recommendations regarding the layout of Easy-to-Read texts, and the Annexes A to C. Lastly, in the case of the skills cards all sections were included.

Section	Synonyms
Processes considerations	-.-
Guidance on hybrid access services	-.-
Guidance on identifying and accessing easy content	-.-
Guidance on procurement of easy content	-.-

Table 6. List of sections

Relations

The binary relations annotated belong to the same section in each document, i.e., no cross-section annotation took place. The binary relations associated a learning category, i.e., knowledge, skills or attitude, with a context of expertise, e.g., accessibility (ACC) or linguistics (LI). In that line, the binary relation ACCESSIBILITY-KNOWLEDGE referred to having knowledge about accessibility, while the binary relation ACCESSIBILITY-SKILLS referred to the ability to apply knowledge about accessibility in a task. Lastly, implicit relations were not annotated. Table 7 shows the binary relations in the schema.

Binary relation	Description
ACCESSIBILITY-KNOWLEDGE	Having factual and declarative knowledge about accessibility.
ACCESSIBILITY-SKILLS	Ability to perform a task using one's knowledge about accessibility.
E2R-KNOWLEDGE	Having factual and declarative knowledge about E2R.
E2R-SKILLS	Ability to apply one's knowledge about E2R.
IT- KNOWLEDGE	Having factual and declarative knowledge about Information Technology
IT-SKILLS	Ability to perform a task using one's knowledge Information Technology.
LINGUISTIC-KNOWLEDGE	Having factual and declarative knowledge about Linguistics
LINGUISTIC-SKILLS	Ability to perform a task using one's knowledge about Linguistic
MANAGEMENT-KNOWLEDGE	Having factual and declarative knowledge about management tasks
MANAGEMENT-SKILL	Ability to perform a task using one's knowledge about management
PROFESSIONAL-KNOWLEDGE	Having factual and declarative knowledge about the profession
PROFESSIONAL-SKILLS	Ability to perform a task using one's knowledge about the profession
REGULATIONS-SKILLS	Ability to perform a task using one's knowledge about standards or regulations
REGULATIONS-KNOWLEDGE	Having factual and declarative knowledge about standards or regulations

Table 7. Binary relations and descriptions

Lastly, the software used was Adobe Pro. Annotators added the annotations anonymously using the commenting tool. Finally, the results were transferred to an Excel file for calculating the totals.

Inter-Annotator Agreement

Annotation processes, in general, and especially those conducted manually, use inter-annotator agreement to assess consistency and reliability (Artstein & Poesio, 2008). To this end, annotation meetings took place to confirm that the annotation criteria were correctly understood and realised in a way that would allow for replication (Krippendorff, 2004). The use of software for calculating coefficients was not deemed necessary for this study.

3. Results

This section presents the results in two steps. Firstly, the results from the annotated skills cards and standards are shown in tables. The data appears in descending order according to the total or percentage of tokens. Secondly, the results are compared.

3.1. Results from the skills cards

The annotation of the three skills cards yielded 520 tokens and 518 binary relations. Table 8 displays the results ordered by total tokens per entity and binary-related entity. According to the totals, having skills and knowledge related to the professional domain is the most important ability, followed by having skills and knowledge in accessibility and Easy-to-Read. Then, having linguistic and management skills and knowledge seem to be almost equally relevant to the profession and appear closer to the previous entities than to entities with the least tokens in the ranking, i.e., REGULATIONS and IT. Lastly, the entity ATTITUDES did not have any binary relation and appeared in only one skills card.

Entity with related entities	Total tokens	Percentage %
PROFESSION skills and knowledge	132	25.38
ACCESSIBILITY skills and knowledge	96	18.46
E2R skills and knowledge	86	16.54
LINGUISTIC skills and knowledge	77	14.81
MANAGEMENT skills and knowledge	72	13.85
REGULATIONS skills and knowledge	28	5.38
IT skills and knowledge	27	5.19
ATTITUDES	2	0.38
Total	520	100%

Table 8. Total tokens from the skills cards ordered by percentage

The next tables 9 and 10 present the results per skills card showing the differences between the professional profiles. The departing point is Table 9 with the tokens in %. The results show that the order by the percentage of tokens per entity remains almost unchanged for creators while it changes for facilitators and validators. As for creators, the entity REGULATIONS becomes slightly more important than MANAGEMENT. The shift in facilitators concerns four entities, i.e., MANAGEMENT, which swaps to the second place after PROFESSION, E2R and LINGUISTIC, which switch places, and IT, which receives more tokens than REGULATIONS. The new order in the case of validators shows that the entity IT is considered more relevant than having skills and

knowledge in MANAGEMENT or REGULATIONS. Interestingly, the entity LINGUISTIC appears to be slightly more important than E2R.

Entity with related entities	% tokens Creator	% tokens Facilitator	% tokens Validator
PROFESSION: skills and knowledge	26.21	23.50	24.48
ACCESSIBILITY skills and knowledge	21.38	16.50	16.67
E2R skills and knowledge	21.38	13.00	15.10
LINGUISTIC skills and knowledge	13.10	14.00	15.62
MANAGEMENT skills and knowledge	6.21	20.50	11.46
REGULATIONS skills and knowledge	6.90	4.50	4.68
IT skills and knowledge	3.45	8.00	11.98
ATTITUDES	1.38	0.00	0.00
Total	100.00	100.00	100.00

Table 9. Tokens by profile in %

Table 10 helps us better understand these differences regarding the required type and level of knowledge. This shows that the creator's and facilitator's training is more outcome-oriented (skills-orientated) than input-orientated (knowledge). Nonetheless, the type of entities differs for each profile, except for REGULATIONS, which remains input-oriented for all three.

Entity	Binary-related entity	% tokens Translator/Creator	% tokens Facilitator	% tokens Validator
PROFESSION	SKILLS	9.66	14.00	13.02
PROFESSION	KNOWLEDGE	16.55	9.50	11.46
ACCESSIBILITY	SKILLS	11.03	7.50	7.29
ACCESSIBILITY	KNOWLEDGE	10.34	9.00	9.38
E2R	SKILLS	4.14	6.50	7.29
E2R	KNOWLEDGE	17.24	6.50	7.81
LINGUISTIC	SKILLS	8.28	7.50	8.33
LINGUISTIC	KNOWLEDGE	4.83	6.50	7.29
MANAGEMENT	SKILLS	4.83	18.00	9.38
MANAGEMENT	KNOWLEDGE	1.38	2.50	2.08
REGULATIONS	SKILLS	0.00	2.00	2.08
REGULATIONS	KNOWLEDGE	6.90	2.50	2.60
IT	SKILLS	2.07	3.50	5.21
IT	KNOWLEDGE	1.38	4.50	6.77
ATTITUDES		1.38	0.00	0.00
TOTAL		100.00	100.00	100.00

Table 10. Detailed presentation of the tokens per skills card in percentage

3.2. Results from the standards

The tables in this section present the results of annotating the standards. The process yielded a total of 442 tokens. Table 11 shows the entities' distribution according to the

tokens reached. Like in the skills cards, PROFESSION remains the entity with the most tokens, while REGULATIONS and IT receive the least amount.

Entity with related entities	Total tokens	Percentage %
PROFESSION: skills and knowledge	208	47.05
E2R skills and knowledge	81	18.32
LINGUISTIC skills and knowledge	69	15.61
MANAGEMENT skills and knowledge	61	13.80
ACCESSIBILITY skills and knowledge	14	3.16
IT skills and knowledge	4	0.90
REGULATIONS skills and knowledge	3	0.67
ATTITUDES	2	0.45
Total	442	100.00%

Table 11. Detailed presentation of the tokens from standards

Table 12 displays the results separated by type of related entity, i.e., skills or knowledge, in descending order according to the percentage. The distribution shows that the standards use an input-orientated approach, showing more tokens for all seven entities with a binary knowledge relation.

Entity	Binary-related entity	Total tokens	Percentage %
PROFESSION	SKILLS	100	22.62
PROFESSION	KNOWLEDGE	108	24.43
E2R	SKILLS	26	5.88
E2R	KNOWLEDGE	55	12.44
LINGUISTIC	SKILLS	25	5.65
LINGUISTIC	KNOWLEDGE	44	9.95
MANAGEMENT	SKILLS	24	5.42
MANAGEMENT	KNOWLEDGE	37	8.37
ACCESSIBILITY	SKILLS	1	0.22
ACCESSIBILITY	KNOWLEDGE	13	2.94
IT	SKILLS	1	0.22
IT	KNOWLEDGE	3	0.67
REGULATIONS	SKILLS	0	0.00
REGULATIONS	KNOWLEDGE	3	0.67
ATTITUDES		2	0.45
TOTAL		442	100.00

Table 12. Detailed presentation of the tokens from standards

The data in Table 13 confirm that both standards follow the same input-oriented approach. This breakdown by standard reveals that the Spanish standard only considers knowledge for binary relations with ACCESSIBILITY, IT and REGULATIONS. The situation in the ISO is similar, with only one token for binary skills relations for ACCESSIBILITY and IT and none for REGULATIONS. With regards to the main

differences in the other entities, the main ones concern E2R SKILLS and ACCESSIBILITY KNOWLEDGE.

Entity	Binary-related entity	% tokens ISO	% tokens UNE
PROFESSION	SKILLS	23.94	21.40
PROFESSION	KNOWLEDGE	22.07	26.64
E2R	SKILLS	0.94	10.48
E2R	KNOWLEDGE	11.74	13.10
LINGUISTIC	SKILLS	6.57	4.80
LINGUISTIC	KNOWLEDGE	13.62	6.55
MANAGEMENT	SKILLS	4.69	6.11
MANAGEMENT	KNOWLEDGE	8.92	7.86
ACCESSIBILITY	SKILLS	0.47	0.00
ACCESSIBILITY	KNOWLEDGE	4.69	1.31
IT	SKILLS	0.47	0.00
IT	KNOWLEDGE	0.47	0.87
REGULATIONS	SKILLS	0.00	0.00
REGULATIONS	KNOWLEDGE	0.47	0.87
ATTITUDES		0.94	0.00
TOTAL		100.00	100.00

Table 13. Tokens from the standards separated by binary relation in %.

Lastly, the presentation in percentages in Table 12 shows the focus of each standard at an entity level and per type of knowledge. The results illustrate that all entities receive similar attention, with the exception of E2R, LINGUISTIC and ATTITUDES.

Entity with related entities	% tokens ISO	% tokens UNE
PROFESSION: skills and knowledge	46.01	48.03
ACCESSIBILITY skills and knowledge	5.16	1.31
E2R skills and knowledge	12.68	23.58
LINGUISTIC skills and knowledge	20.19	11.35
MANAGEMENT skills and knowledge	13.62	13.97
REGULATIONS skills and knowledge	0.47	0.87
IT skills and knowledge	0.94	0.87
ATTITUDES	0.94	0.00
Total	100.00	100.00

Table 14. Tokens per entity with related entities from the standards in %

3.3. Results from the comparison between skills cards and standards

This section displays the data in a tabulated form to compare the results from the annotated sources. Table 15 shows differences in two main entities with binary relations, i.e., PROFESSION and ACCESSIBILITY.

Entity with related entities	Standards (%)	Skills cards (%)
PROFESSION: skills and knowledge	47.05	25.38
E2R skills and knowledge	18.32	16.54
LINGUISTIC skills and knowledge	15.61	14.81
MANAGEMENT skills and knowledge	13.80	13.85
ACCESSIBILITY skills and knowledge	3.16	18.46
REGULATIONS skills and knowledge	0.67	5.38
IT skills and knowledge	0.90	5.19
ATTITUDES	0.45	0.38
Total	100.00%	100.00%

Table 15. Comparison of tokens between standards and skills cards in percentage

Table 16 includes the results by tokens and documents in percentages. The data show that the standards focus more on the entity PROFESSION while hardly attributing any attention to ACCESSIBILITY. As for the entities E2R, LINGUISTIC and MANAGEMENT, the results are similar with two exceptions, i.e., the entity MANAGEMENT for creators and facilitators. The standards account for fewer tokens regarding REGULATIONS and IT than the skills cards, even if the overall percentage is low in all documents. Lastly, ATTITUDES is the entity with the overall least number of tokens, accounting for zero tokens in three documents.

Entity with related entities	% tokens ISO	% tokens UNE	% tokens Creator	% tokens Facilitator	% tokens Validator
PROFESSION: skills and knowledge	46.01	48.03	26.21	23.50	24.48
ACCESSIBILITY skills and knowledge	5.16	1.31	21.38	16.50	16.67
E2R skills and knowledge	12.68	23.58	21.38	13.00	15.10
LINGUISTIC skills and knowledge	20.19	11.35	13.10	14.00	15.62
MANAGEMENT skills and knowledge	13.62	13.97	6.21	20.50	11.46
REGULATIONS skills and knowledge	0.47	0.87	6.90	4.50	4.68
IT skills and knowledge	0.94	0.87	3.45	8.00	11.98
ATTITUDES	0.94	0.00	1.38	0.00	0.00
Total	100.00	100.00	100.00	100.00	100.00

Table 16. Tokens from the standards and skills cards in %.

4. Discussion

The results of the exploration outline that standards and skills cards seem to be mostly in sync in terms of identified entities. The deep dive into the topic through the proposed

annotation scheme reveals shortcomings that could otherwise lead to unsought problems. For example, the standards disregard some competence areas, such as having knowledge about accessibility. This competence, however, enables professionals to develop a deeper understanding of end users' needs and approach the profession from the For All approach behind current disability models. In this sense, standards are very focused documents that can lack a wider vision of a professional field.

Skills cards seem to capture the wider picture of a profession. The underlying training perspective may play a role as well as the designed methodology which included a Europe-wide online survey and, in the case of TRAIN2VALIDATE, also relied on secondary literature research beyond existing skills cards. As a result, so-called Cross-functional skills were identified, including, for instance, the ability of a professional to know about related safety and hygiene regulations and to implement solutions that ensure equal opportunities. These topics are also necessary as general regulations include many obligations that professionals must learn. Another example of the results of the secondary research in TRAIN2VALIDATE is that the data from the online surveys did not consider that validators should acquire knowledge or skills about the target group, as shown in Table 2, possibly because validators are already a target group. This gap was corrected in the skills cards.

Annotating curricula and standards related to accessibility and, in particular, to Easy-to-Read is quite novel. However, the resources used in this case study to develop the proposed scheme have led to a reliable, reproducible procedure to compare documents that are used as referents. That is, on the one hand, standards, which are documents internationally accepted given their domain-specificity and controlled process. And, on the other, skills cards that use learning outcomes to design training.

The limitations of human annotation (e.g., more time, effort, and costs) carried out in this study can be improved in future annotations while preserving its novelty and replicability. Above all, the manual annotation enabled to spot differences between the needed type of knowledge and shed light on the question of whether one professional can do all three jobs, i.e., creating or adapting, facilitating, and validating. According to the collected data, the domain-specific abilities or professional skills are the ones with the most tokens, and each profile has its own focus. For example, while standards consider management knowledge and skills, the actual relevance for a given profile becomes clear when the annotated percentages are compared. For example, the 6.21% reached by creators versus the 20.50% attached to facilitators. In a job-interview situation, for example, a company hiring a facilitator should assess the candidate's management skills before hiring. This difference also highlights that the three professions need specific training developments according to their particularities, although all of them are part of the same production process.

Future research avenues that aim to annotate data in this field could improve and expand this first schema and include other types of documents, such as job offers or even certifications. Over time, the annotation could be automatic. Comparative studies between manual and automatic annotations might be relevant to analyse if any of both contains biases.

The data delivered in this case study should help trainers, industry, and trainees to fine-tune their programmes and self-assessments about the type of knowledge needed to deliver the expected outcomes. For instance, skills cards for facilitators and validators skip competences related to subtitling, audiodescription and audiovisual production that are key for creators and translators, while the weight on multimodality is very light for

these confronted to those. The differentiation between skills and knowledge is especially useful for designing tasks for prospective students.

5. Conclusions

To a certain extent, comparing two different types of documents, such as standards and skills cards, may seem irregular. However, both types of documents aim at setting a quality standard for a final product, in this case, Easy-to-Read content. Standards do so by defining processes and qualities of the end-product, while skills cards by stating the abilities that professionals need to acquire to deliver such quality. When standards and training are in sync, stakeholders from the industry and education can expect and provide the same outcome. The results of this case study show that current standards and skills cards in the field of Easy-to-Read are in sync.

The benefits of human annotation outweighed the disadvantages by identifying edge cases. Furthermore, the method emphasised the need for individual training programmes for each profile and for acknowledging that the proficiency and type of knowledge may differ among profiles, even if the competence areas are the same.

Notes

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