# Accessibility to textual resources for people with Intellectual Disabilities within cultural spaces

# Accessibilità alle risorse testuali per le persone con Disabilità Intellettiva all'interno degli spazi culturali

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## Abstract

This paper addresses the issue of accessibility to written information in cultural spaces for people with intellectual disabilities (ID). The main goal is to present a process aimed at creating *Easy-to-Read* (EtR) texts. Two groups of participants with different levels of ID – moderate (N=7) and severe (N=7) – have been actively involved in the process of simplification of written resources within the Natural Science Museum, site in Trieste. We analyze the process that serve to create EtR textual resources functional for people with ID showing different levels of reading and comprehension abilities. By using an *Inclusive Research* approach, the contribution underlines the importance to include the voice of people with disabilities in the process of transformation of social and cultural spaces.

Keywords: intellectual disabilities; textual simplification; accessibility; cultural spaces.

## Sintesi

Questo articolo affronta la questione dell'accessibilità alle informazioni negli spazi pubblici per le persone con disabilità intellettive. L'obiettivo principale è quello di presentare un processo volto a proporre comunicazioni comprensibili e informative supportate da testi semplificati. Due gruppi di partecipanti con diversi livelli di disabilità intellettiva – moderata (N=7) e grave (N=7) – sono stati attivamente coinvolti nel processo di semplificazione delle risorse scritte all'interno del Museo di Scienze Naturali, sito a Trieste. Il disegno di ricerca è un metodo misto che comprende la raccolta di dati sia quantitativi che qualitativi volti ad esplorare criteri di leggibilità e comprensibilità delle risorse testuali considerando diversi livelli di semplificazione. Il contributo sottolinea l'importanza di includere la voce delle persone con disabilità nel processo di trasformazione degli spazi sociali e culturali.

Parole chiave: disabilità intellettive; semplificazione testuale; accessibilità; spazi culturali.

## 1. Introduction

Previous literature on Intellectual Disabilities (ID) reveals a consistent lack of focus on literacy (Jones, Long, & Finlay, 2006). The explanations why this topic has been deemphasized in this population may stem from a cultural bias historically associated with marginalized groups (Kliewer, Biklen, & Kasa-Hendrickson, 2006) which assume that individuals with a low IQ score cannot learn to read, or that can only acquire some functional sight words versus learning decoding (Browder, Mims, Spooner, Ahlgrim-Delzell, & Lee, 2008). However, the literature suggests that on the basis of the specific cognitive profile of the person with ID, the development of literacy may vary from a range of functional literacy acquisition which refers to a level of reading ability that would allow a person to cope with the literacy demands of everyday tasks, to the acquisition of more complex literacy skills which provide opportunities for a wider access to cultural information (Bransford, Brown, Cocking, & National Research Council, 2000). It has been shown that developing literacy and using the acquired abilities is an important life skill for individuals with ID as it seems to be associated to greater postsecondary outcomes, including quality of life, employment, empowerment, independence (Laing, 2002).

In the last few years, a growing interest in understanding how to promote literacy and the access to knowledge for people with ID has been fueled by legislative priorities and societal expectations for individuals in this population. Life environments and their organization have been increasingly considered as having a strong impact in favoring or hindering the functioning of people, affecting the ability of an individual to deal independently with the circumstances of everyday life (International Classification of Functioning, ICF) (WHO, 2001). The presence of environmental and social barriers could interfere, in fact, with the full expression of the person's functioning and potential.

The international legislation is giving much attention to the concept of accessibility to cultural spaces, highlighting the essential ethical value of inclusion in democratic societies. The Convention on the Rights of Persons with Disabilities (UN, 2006), underlines that participation in social and cultural life is a fundamental human right, placing great emphasis on principles such as cultural accessibility, participation, independent living, as key factors for its realization. The current focus on the need for participation for all leads to reconsider the concept of accessibility and extend it to all its dimensions (communicative, institutional, pedagogical, cultural, social, subjective, physical, etc.) (Aquario, Pais, & Ghedin, 2017), encouraging flexibility in identifying multiple ways of access to knowledge.

Within cultural spaces it is necessary to ensure accessibility for all types of disabilities (motor, auditory, visual and intellectual) by implementing measures that involve the design or adaptation of both physical spaces and communication supports. Regarding Intellectual Disabilities, specific measures are necessary especially on the communication and learning domains, in order to promote the processing, elaboration and understanding of the conveyed cultural information.

The Design for All principles (Universal Design for Learning, UDL) (CAST, 2011) are intended to guide the transformation of cultural spaces to address the needs of a wide audience of people with intellectual difficulties. As established by the United Nations Convention (article 2) the design and implementation of products, environments, programs and services should be aimed at all people, as widely as possible, without the need for adaptations or specialized design. The basic idea of universal design according to the criteria of the UDL is that what is designed for people with some kind of difficulty, will inevitably be adequate even for those who have no special needs (Mitchell, 2014).

Therefore, solutions involving new forms of cultural transmission centered on the UDL concept could allow inclusive innovations of cultural contexts, from schools to social centers and museums.

The application of the UDL principles to written contents within cultural spaces is linked to the use of a simplified language, such as Easy-to-Read language (EtR). EtR is an approach aimed at reducing language complexity and was specifically designed to meet the needs of people with cognitive and learning disabilities through the application of specific guidelines[1]. EtR guidelines allow the creation of accessible contents in different formats, from written to electronic and audio formats. The application of EtR guidelines serves for multiple purposes, from the simplification of written instructions in health, school or cultural contexts to the simplification of web contents, allowing people with limited learning and/or reading skills to face new knowledge or learn new procedures useful in everyday life (Buell, Langdon, Pounds, & Bunning, 2020).

As for the methodology used to create texts in EtR, an important aspect is that no easy-to-read text should ever be written without the active involvement of people with ID. Through the active involvement of people with ID it is possible to write a document in EtR and/or to translate a difficult text into a text based on EtR criteria. As for museum accessibility, this second approach is more useful when there is the need to translate written information created for a general audience to comprehensible and informative contents supported by EtR language. In those cases, a translation of a difficult text into a facilitated language is required.

As evidenced by Del Bianco (2019) the translation of difficult texts in EtR texts can be done in two main ways. On the one hand, the adult could produce an initial translation of a document in an EtR text and then ask to people with ID to read and check its comprehensibility. On the other hand, the adult can cooperate with people with ID right from the first steps: this involves reading the difficult text together, seeing what is grasped and explaining the rest, and then arriving at the joint writing of a facilitated version. The evaluation phase is crucial to approve or reject/modify the written text. In this step, people with ID are involved in reading and checking what has been written to see if the formulated text is easy to read and understand. The adult (e.g. a social worker, a teacher, a parent) plays an important role in engaging and supporting participants with ID in the expression of thoughts and ideas.

Regarding the use of EtR in the Italian context, unlike what happens in other European countries, its use is limited to associations that work with people with ID and there is a scarcity of studies related to the use of EtR, with the exception of Sciumbata (2022) who approached the issue from a linguistic point of view. As recently pointed out by the author, users who use the guidelines to write texts in EtR (i.e., educators, trainers, teachers, and parents) report as a main criticism the fact that EtR guidelines are too generic. The

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[1] EtR guidelines have been developed within the *Pathways* project sponsored by the European Commission (*Pathways I*, between 2007 and 2009; *Pathways II*, between 2011 and 2013). Several European associations took part in the project: Inclusion Europe (Belgium), Atempo (Austria), Me Itse ry (Finland), Nous Aussi (France), UNAPEI (France), Büro für Leichte Sprache of Lebenshilfe Bremen (Germany), Inclusion Ireland (Ireland), VILTIS (Lithuania), FENACERCI (Portugal), ENABLE Scotland ACE (Scotland), and the Italian association Anffas (National Association of Families of People with Intellectual and/or Relational Disabilities). Guidelines have been translated in sixteen different languages (for the Italian guidelines see: http://www.anffas.net/it/linguaggio-facile-da-leggere/linee-guida/).

instructions they contain are often insufficient to write a text that is accessible for people with specific cognitive needs. For example, the guidelines suggest using *short sentences* and *simple words*, without however providing further details such as the recommended number of words per sentence, the type of syntactic structures to be preferred or avoided, or useful sources for choosing easy and understandable words.

Besides the lack of clarity on lexical, syntactic and morphosyntactic aspects, the guidelines are very generic in describing the procedures to be used when creating texts in EtR. Although the EtR guidelines recommend the involvement of people with ID in the process of text simplification, they not provide objective criteria on how this participation should be conducted. There is a lack of clarity on which strategies would be most suitable for the active involvement of people with ID and on how these strategies should be adapted to consider different cognitive profiles. This produces two main negative outcomes: the quality of translation or creation of texts in EtR usually depends on the expertise developed by the facilitator; the simplification process hardly takes into account different cognitive profiles within the population with ID.

The aim of this paper is to analyze the process that serve to design and create *Easy-to-Read* (EtR) textual resources by considering different levels of text simplification. By using an *Inclusive Research* approach, we describe the process of creating and validating simplified textual resources through the active involvement of people with ID presenting different levels of reading and comprehension abilities. The research questions are the following: How cultural contents must be designed to display clear, understandable, informative messages? How can we promote learning processes for a wide range of users with disabilities during their interaction with museums? How can we meet the needs of readers having different cognitive profiles and different levels of reading and comprehension abilities?

To answer these questions, two groups of people with intellectual disabilities characterized by a medium-moderate and a medium-high intellectual disability have been actively involved in the process of simplifying cultural contents within the Natural History Museum located in Trieste (Italy) in order to make written information accessible to a large number of visitors.

## 2. Study design

### 2.1. Objectives and hypotheses

The aim of this research is to analyze the process that serve to create simplified textual resources functional for people with ID showing different levels of reading and comprehension abilities. For this purpose, we recorded and described in detail all the steps that have been used by an expert in EtR while engaging participants with ID in creating EtR texts. Moreover, we explored the contribution of two groups of participants with ID, with different needs in terms of reading and comprehension abilities. We hypothesized that, in order to create clear, understandable, informative messages that are useful for a wide range of users with ID, the adequate involvement of people with different profiles is crucial.

## 2.2. The context

The Museum of Natural Science (Trieste) participated to the present research. For several years now, the museum has been giving attention to the renewal of communicative spaces in an inclusive perspective in collaboration with the Cooperativa Sociale Trieste Integrazione a m. Anffas Onlus located in the same city. The museum expressed a particular interest in evaluating and adapting the accessibility of textual information within the museum.

## 2.3. Participants

14 participants with intellectual disabilities, part of the Anffas Association (Cooperativa Sociale Trieste Integrazione a m. Anffas Onlus), participated to the present research. Participants were divided in two groups based on their cognitive profile: one group was characterized by a moderate intellectual disability (group 1, N=7), the other by a severe intellectual disability (group 2, N=7). Participants in each group had a similar level of schooling (i.e. completion of compulsory schools) and a similar level of reading, writing and textual comprehension abilities. Only one of the participants (S.) was in a wheelchair, while the others had no particular motor difficulties. Participants' characteristics in terms of age, sex, diagnosis, level of education and reading abilities are reported in the Figure 1. Their reading and comprehension capacities were obtained through the MT Reading Test – first-grade level (final test) – (Cornoldi & Colpo, 1995). As evidenced by the test scores, all participants presented adequate reading capacities while their comprehension capacity was classified as medium for participants in group 1, and low for participants in group 2.

| Participant | Group | Age | Sex | Diagnosis | Level of education | MT reading | MT comprehension |
|---|---|---|---|---|---|---|---|
| S. | 1 | 36 | F | Spastic cerebropathy with cerebellar ataxia and hemiparesis | middle school | adequate | medium |
| M. | 1 | 48 | M | Infantile cerebropathy with intellectual deficit and psychotic disorders | middle school | adequate | low |
| S. | 1 | 56 | M | Oligophrenia in outcomes of encephalopathy, hypoacusis and visus deficit | middle school | adequate | low |
| M. | 1 | 30 | M | Severe mental retardation and | middle school | adequate | low |
| E. | 1 | 61 | F | Down syndrome | middle school | adequate | medium |
| R. | 1 | 45 | F | Spastic tetraplegia | middle school | N.A. | N.A. |
| A. | 1 | 22 | F | Cerebropathy | high school | N.A. | N.A. |
| G. | 2 | 48 | M | Severe oligophrenia with reduced motor mobility | middle school | adequate | medium |
| F. | 2 | 24 | M | Severe mental retardation | high school | adequate | low |

| M. | 2 | 39 | M | Mental retardation due to feto-alcohol syndrome | middle school | N.A. | N.A. |
| P. | 2 | 43 | M | Mild Mental retardation | middle school | N.A. | N.A. |
| L. | 2 | 46 | F | Cerebropathy in hemiparesis | middle school | N.A. | N.A. |
| S. | 2 | 34 | M | Psychomotor mental retardation | high school | N.A. | N.A. |
| M. | 2 | 23 | M | Mental retardation | middle school | N.A. | N.A. |

Figure 1. Participant's characteristics.

## 2.4. Data collection

The research paradigm is that of *Inclusive Research* (Correia, Seabra-Santos, Campos Pinto, & Brown, 2017; McEvoy & Keenan, 2014) which is based on a participatory approach allowing an accurate analysis of participants' thoughts, needs and desires (Bigby, Frawley, & Ramcharan, 2014; Coons & Watson, 2013; Strnadová, Walmsley, Johnson, & Cumming, 2016). We analyze the process that serve to create EtR textual resources functional for people with ID showing different levels of reading and comprehension abilities. For this purpose, qualitative data have been collected to explore thoughts and ideas of people with ID while giving their contribution to text simplification. Some questionnaires were specifically developed to measure the level of comprehensibility of the written resources. Questionnaires have been developed according to the EtR criteria to be easily comprehended by participants with ID.

## 3. Procedure

The group with moderate ID and an education worker from the Anffas Association were involved during a brainstorming immediately after the visit at the Museum of Natural Science in Trieste. The brainstorming aimed at analyzing which of the museum's themes/topics aroused most interest in the group of participants with ID. The heads of the educational area of the museum then provided the information material on the topic which was of most interest (i.e. the area of the museum dedicated to bats). The material provided by the museum consisted of a brochure containing information, in the form of a descriptive text of a scientific nature, on the specific topic. The original text released by the museum has been evaluated by an education worker specialized in the use of the EtR guidelines. According to the education worker's judgment the original text was extremely complex and had to be translated according to EtR criteria. The original text has therefore undergone a first simplification (simplification - baseline level) carried out by the education worker without the active involvement of the direct users. Participants in both groups were involved in 8 meetings per group (each lasting about 3 hours) led by the education worker. During these meetings, all videotaped for research purposes, the two groups of participants with ID (moderate and severe ID) worked separately with the aim of elaborating two simplified versions of the text.

## 4. Results

The analyses of video allowed the authors to describe in detail all the steps for engaging people with ID in creating EtR textual resources (Figure 2), outlined as follows:

1. pre-reading (1 meeting of 3 hours per group);
2. actual reading and first evaluation (1 meeting of 3 hours per group);
3. simplification in two levels (5 meeting of 3 hours per group);
4. review of the simplified text (1 meeting of 3 hours per group).

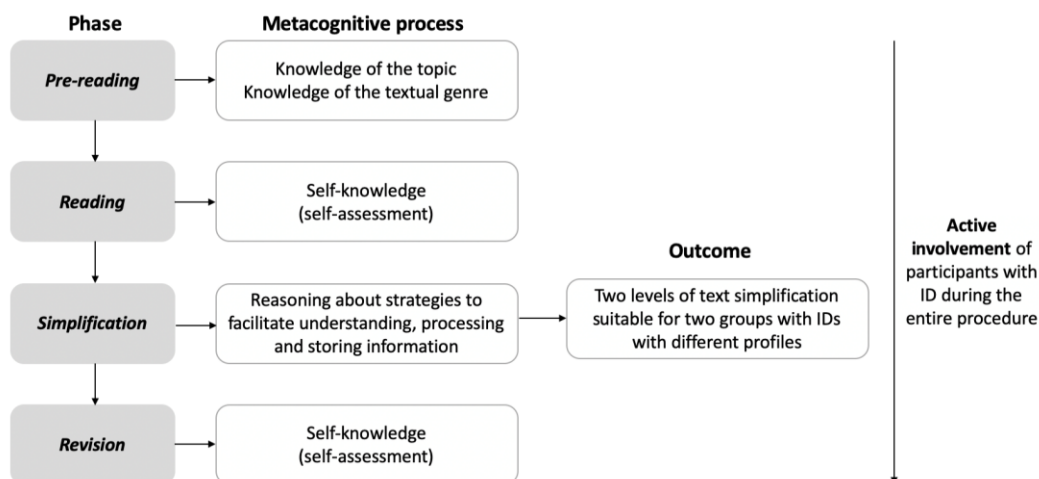Each step and its main results are described in the next paragraphs.

Figure 2. Steps for simplifying textual resources.

### 4.1. Pre-reading phase

Participants were involved in an initial brainstorming. The objective of this phase was to foster participant's use of specific metacognitive skills involved in reading and comprehension processes:

- Topic knowledge: "Do I already know something about what I read? What I know could help me in better understanding the text?"
- Textual genre knowledge: "Do I already have experience of reading similar texts?"

In order to facilitate the use of these metacognitive skills the education worker, after inviting the participants to read the text title, asked the following questions:

- By reading the title, what text do you expect to read? A story, a newspaper article, a scientific text?
- Before starting to read the text, try to think if you already know something about this topic. If so, what do you remember?
- How interested are you in the subject?

Results from this phase showed that the majority of participants had only a general idea on the topic although all expressed a general interest in expanding their knowledge on it.

### 4.2. Reading phase and first evaluation

Participants were asked to read the text individually for the first time. Participants from group 1 were administered the text in its simplified version made by the education worker

(simplification - baseline). Participants from group 2 were involved in a second step and were administered the text in its simplified version previously made by group 1 (simplification – level 1) (Figure 4). After reading the text, each participant filled a questionnaire containing multiple-choice answers aimed at assessing participant's comprehension of text contents. The education worker developed the questionnaire according to EtR guidelines so that participants in both groups could read and understand both questions and multiple-choice answers.

The two questionnaires were administered to group 1 and group 2 independently (Figure 3). Results showed that three participants from group 1 (graph with blue columns, left) were able to answer 9 out of 9 questions regarding the content of the text they just read, while four participants from the same group showed some difficulties in comprehending the text. As for group 2 (graph with green columns, right), the majority of participants had serious difficulties to comprehend the administered text (simplification – level 1, text in its simplified version made by group 1). Therefore, a more extensive simplification process would have been necessary to foster its comprehensibility.

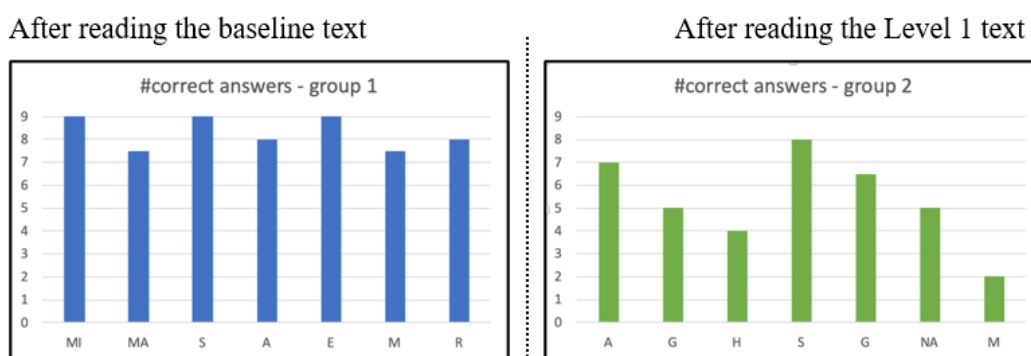After reading the baseline text                    After reading the Level 1 text

Figure 3. Graphical representation of the questionnaire scores. Questionnaires were administered to Group 1 and 2 after reading the text in its simplification-baseline (made by the education worker) and in its simplification-level 1 (made by Group 1), respectively.

Participants were then involved in a further brainstorming stage aimed at answering to the following questions:

- Did you have some troubles in reading the text? If yes, why?
- Do you think there were to many information within the text?
- Do you think this text was difficult to comprehend? If yes, why?
- Which information were easy to understand? Which information were difficult to understand?

The brainstorming was conducted by the education worker and it was entirely recorded for research purposes. Through the brainstorming the following difficulties have emerged:

- the language chosen to convey the information was too technical;
- the text included too much information;
- information was presented by using a font and page layout that did not facilitate reading;
- the choice of images was not appropriate.

Results of the questionnaires, together with those of the brainstorming, led to the conclusion that a further text simplification was necessary for both groups. This data-driven

approach informed the later simplification procedure which led to the implementation of the level 1 – medium level of simplification, and level 2– high level of simplification, carried out by participants from group 1 and 2, respectively. In this way, participants of group 2 would benefit from the simplification already carried out by the group of participants with higher reading and comprehension skills.

## 4.3. Simplification phase in two levels

The goal of this phase was to enhance the metacognitive ability of participants to think about the most useful strategies to facilitate content reading and understanding. Through the mediating role of the education worker, participants were actively involved in the following actions aimed at realizing the two simplified versions of the text:

- to select the most relevant information related to the text;
- to define some linguistic and stylistic aspects related to text simplification: text length, structure of sentence, choice of lexicon, relationship between text and images, font and layout.

Following the EtR guidelines, the simplification process took into account the need to use very short, but also informative sentences, and a vocabulary that refers mainly to high-frequency words, where the reader's ability to retrieve knowledge is facilitated. The simplification phase was conducted by the education worker, who is expert in EtR guidelines. Through the entire process, the education worker included the voice and contribution of all participants in each group. The individual involvement was carried out by asking direct questions to each participant, so that they could express their idea about the contents to be simplified, the choice of vocabulary, images, graphic elements. As in the previous phase, the education worker paid a lot of attention to the avoidance of possible response biases.

The double level of simplification was intended to consider, to the greatest extent, interindividual differences in reading and comprehension abilities within the broad ID functioning. Figure 4 shows four extracts from the text: the first one is related to the text in its original version created by the museum curator, the second one is related to its first simplified version made by the education worker (simplification – baseline), the third one is related to its simplified version made by group 1 (medium level of simplification), while the fourth one is related to its simplification made by group 2 (high level of simplification).

| Text in its original version. |
|---|
| Do bats only live in caves? |
| No! Many *species* of bats routinely *take refuge* in the *cavity* of trees or in *cracks* between rocks. It is precisely these species that often enter *households.* |
| (italian version) I pipistrelli vivono solo nelle grotte? |
| No! Molte *specie* di pipistrelli si *rifugiano* abitualmente nel *cavo* degli alberi o in *fessure* tra le rocce. Sono proprio queste specie che spesso entrano nelle *abitazioni.* |
| Text in its simplified version (simplification-baseline), made by the EtR expert |
| Bats (live) in caves and tree (holes). |
| Some types of bats have become accustomed to live |
| near (houses) and cities. |
| (Italian version) I pipistrelli vivono nelle grotte e nei buchi degli alberi. |
| Alcuni tipi di pipistrelli si sono abituati a vivere |

| anche vicino alle case e nelle città. |
| Level 1 – medium level of simplification, made by participants with moderate ID |
| Bats live in *(places where it's dark)*<br><br>For example, in *caves.*<br><br>Bats can also live near houses,<br><br>and can also live in attics and cellars of houses.<br><br>(Italian version) I pipistrelli vivono nei *(posti dove c'è buio)*<br><br>Per esempio nelle *grotte.*<br><br>Le grotte sono sotto terra.<br><br>I pipistrelli possono vivere anche vicino alle case,<br><br>e possono vivere anche nelle soffitte e nelle cantine delle case. |
| Level 2 – high level of simplification, made by participants with severe ID |

| Bats live in places where it's dark<br><br>For example, in caves.<br><br>*(Caves are underground).*<br><br>Bats can also live near houses,<br><br>and can also live in attics and cellars of houses.<br><br>(Italian version) I pipistrelli vivono nei posti dove c'è buio<br><br>Per esempio nelle grotte.<br><br>*(Le grotte sono sotto terra).*<br><br>I pipistrelli possono vivere anche vicino alle case,<br><br>e possono vivere anche nelle soffitte e nelle cantine delle case. |  |

Figure 4. Different levels of simplification. Lexical elements considered difficult to understand by the participants are underlined in the text, while descriptive elements that participants wanted to add to the text are indicated in brackets.

With regard to the font and layout, the two groups considered more readable a text: formatted in standard A4 format (21 x 29.7cm); with a double line spacing; with Arial 14 as font; with 2.5 cm-margins on the four sides. Only participants from group 2 decided to select and insert some pictures to further simplify some part of the text.

### 4.4. Final evaluation phase

In this phase, each participant was asked to read the final draft of the simplified text and a second brainstorming was conducted by the education worker to verify whether the text was fully comprehended. Participants were then involved in a further brainstorming stage aimed at answering to the following questions:

- Did you have some troubles in reading the text? If yes, why?
- Do you think there were to many information within the text?
- Do you think this text was difficult to comprehend? If yes, why?

- Which information were easy to understand? Which information were difficult to understand?

The brainstorming was conducted by the education worker and it was entirely recorded for research purposes. A good level of readability and comprehensibility of the two versions was confirmed by participants from the two groups. Through all the work phases, the multimedia whiteboard (LIM) was used as a mediation tool. It allowed to display the text in its different versions, as well as to visualize all the suggestions participants gave during the brainstorming phase.

## 5. Discussion

Making culture accessible to people with ID represents an ethical challenge (Coons & Watson, 2013) that may open interesting implications for research and educational practice.

The analysis of processes related to the transformation of cultural spaces from an inclusive perspective represents a research field which is increasingly arousing the attention in educational sciences (Austin et al., 2018; Hayhoe, 2018; Sandell, Dodd, & Garland-Thomson, 2010). The present research highlights the importance of including the voice of people with disabilities in this transformation process doing a type of research that is "with them" rather than "for them".

The museum under investigation was highly interested in investing in the renewal and removal of environmental and social barriers that could interfere with the full expression of the cultural potential of the site itself. Right after the museum visit, a first brainstorming allowed to understand the thoughts and ideas of visitors with ID on the obstacles related to the access to knowledge. In structuring the questions that guided the brainstorming a great deal of attention was paid to avoiding possible response biases. Several studies (Heal & Sigelman, 1995; Matikka & Vesala, 1997) revealed the propensity of people with ID to answer yes (acquiescence bias) or no (nay-saying) to questions or to choose the last answer (recency bias). The presence of response bias derives from general difficulties of reasoning in abstract terms and of making judgments regarding complex topics.

The main goal of this study was to create easy-to-read resources by using a research-based approach. For this purpose, two groups of participants with different levels of intellectual disability (moderate and severe) have been involved in the elaboration of two levels of simplified texts following the easy-to-read guidelines. The entire simplification process allowed the co-design of textual contents to be displayed within the museum in order to make information clear, understandable, informative for people with ID. The novelty of the present study is the creation of a multi-level simplification text that may allow people with ID, with different reading/comprehension skills, the access to cultural contents. Messages were designed according to the perspective of universal design and calibrated to reflect a wide range of functional profiles (people with moderate and with severe ID). This scope is important especially in the case of ID since there is a great heterogeneity in cognitive profiles and in reading and comprehension skills (Bransford et al., 2000).

Content simplification process involved the use of short and informative sentences, and a vocabulary that refer mainly to high-frequency words, where the possibility of recovery of knowledge by the reader would be facilitated. The group with a more severe intellectual disability decided to add meaningful images that could accompany some of the written content and make it easier to understand. The choice to add pictures is explained is

explained by the fact that the use of images helps the processing and storage of new information (Campagnaro & Dallari, 2013; Emili & Macchia, 2020).

By using high readability criteria, the simplification process considered the need to make written contents clear also from a graphic/perceptual point of view. The high readability criteria have been supported by scientific evidences showing how the use of particular typographic criteria related for example to the choice of the type, size, and color of the text font, the contrast with the background, the text alignment, the length of paragraphs, and spacing can greatly affect the text readability (Emili & Macchia, 2020). In particular, it has been seen how adequate spacing between letters, words and lines (double line spacing) is useful in avoiding visual page crowding (i.e. crowding effect; Zorzi et al., 2012).

The method described in the present paper can serve to outline good practices related to the processes of textual simplification for people with disabilities, considering the principles of readability and comprehensibility in their complexity. Through this process, a key role is played by metacognitive strategies, such as the activation of prior knowledge, as well as self-knowledge and self-assessment. In the presence of cognitive impairments there is a lack in metacognitive control. These difficulties arise mainly in the poor use of strategies to integrate information, select content, formulate hypotheses and identify inconsistencies in the texts. As pointed out recently by Santulli and Scagnelli (2019) a number of emotional factors, as well as cognitive, are involved in the process of understanding texts. Promoting the success in the execution of a reading task means, therefore, strengthening positive emotional processes, self-esteem and self-efficacy in people with intellectual disabilities. The method described here may be useful for all those who want to create simplified and accessible resources paying attention to their applicability, usability and effectiveness.

The transformation of cultural contents from an inclusive perspective serve to promote accessibility, considered as a principle to ensure the expression of fundamental human rights avoiding forms of discrimination caused by disability. Accessibility is recognized as a value in itself, useful to all individuals and therefore to be protected in the interest of the community (Aquario et al., 2017).

Making cultural information accessible to everyone is especially important in our today's society, which is increasingly characterized by a plurality of cultures and languages. The process of simplification of textual resources could be useful not only for people with intellectual disabilities but also for people who, for linguistic and cultural reasons, may lack in the full access to cultural contents. Museums are increasingly interested in transforming themselves from places for cultured people to places for everyone. Research in this field can help understanding how museums could become places that promote cultural democracy.

## 6. Conclusions

As recently highlighted in the literature (Hadley & McDonald, 2018), the growing interactions between museum institutions and scholars interested in disability issues are generating new reflections on how to promote accessibility. The resulting interdisciplinary and international reflections not only stimulate new insights into this innovative field, but also inform ethically and experimentally based practices to enhance inclusion.

This paper highlights the importance of making people with disabilities protagonists of the social/cultural progress of the community in which they are embedded. Not only the users

may benefit from their active involvement in the process of transformation of cultural spaces, but the entire community may benefit from it. This paper opens reflections ranging from special pedagogy to economics, summarizing central assumptions about the Community Based Rehabilitation (CBR) (WHO, Unesco, & International Labour Organization, 2010) and the Generative Welfare (Zancan Foundation, 2012) approaches. CBR promotes rehabilitation, equal opportunities, poverty reduction and social inclusion of people with disabilities within their community by making them protagonists of the decisions that take place within it. The perspective of Generative Welfare suggests the strategies that must be taken to address insufficient institutional responses to the needs of vulnerable people. As recently suggested by Pasqualotto (2016) the practical application of these two approaches can promote the social inclusion of people with disabilities within their communities.

Their active participation may allow local authorities, social services, health care companies, schools, cooperatives, associations, foundations, as well as cultural spaces to rethink their organization, encouraging a relational and inclusive perspective. The whole community may participate to the empowerment of people with disabilities, and in turn may benefit from it.

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