

Accessible written information resources for adults with intellectual disability: compiling the evidence to inform good practice

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Background

The importance of promoting access to information so that all people can go about their daily lives, exercising informed choice and self-determination, has been recognized by the United Nations Educational, Scientific and Cultural Organisation (UNESCO). To raise the profile of these issues, UNESCO has declared the 28th September to be *International Day for the Universal Access to Information*; <http://unesdoc.unesco.org/images/0023/002352/235297e.pdf>.

Consistent with this, the United Nations' 2030 Development Agenda includes a stated goal (Goal 16) to establish '*just, peaceful and inclusive societies by promoting public access to information*'. Furthermore, the United Nations Convention on the Rights of Persons with Disabilities (UN, 2006) enshrines the right to access to information, and obliges signatories to UNCRPD, such as Australia, to promote the "*design, production and distribution of accessible information...*". Reflecting international standards, the National Disability Insurance Scheme (NDIS) has made explicit a commitment to '*providing clear and accessible information to Australians with disability*' (Australian Government Department of Social Services, December 2016).

While the importance of easy access to information is universally agreed, what defines accessible written information (AWI) and the extent to which information that is purported to be accessible remains in contention. To address these complex issues, the University of Melbourne in collaboration with Scope Australia (The Communication Inclusion Resource Centre), the University of Sydney and Western Sydney University has commenced a programme of research to investigate what constitutes truly accessible written information, and how such resources might be produced.

Our Accessible Information Project has already reviewed a range of guidelines, from Australia and overseas. We have gathered the evidence to answer a number of questions, as detailed in this preliminary project report. In this report we address:

1. What issues need to be considered when preparing accessible written information?
2. What evidence is there to support the recommendations made by the various guidelines with respect to preparing accessible written information resources?
3. What else do we need to consider when supporting people to use written information?

While we have been able to identify some commonalities across various guidelines, not all guidelines have included the same specifications. Notably, there is evidence of some contradictory recommendations. Also, when examining the research evidence supporting the various guidelines, overall there is a paucity of empirical evidence. Very few studies had endeavored to systematically measure the various components of documents asserted to be 'accessible written communication'.

What is documented in the literature is that material written in short clear sentences with information clearly punctuated into small chunks is commonly found to enhance comprehension. Not a surprising conclusion! However, what constitutes 'short clear sentences with information clearly punctuated into small chunks' is open to scientific debate and, on a practical level, remains problematic for people charged with the every-day responsibility of preparing accessible written information.

Our on-going program of research to address these technical issues with very practical implications, will be characterized by a programme of research not ON people with disabilities, but *co-designed* and *co-produced* WITH people with disabilities. We are confident that if we can address these issues with people with disabilities, then we will be able to progress accessible written communications for all Australians; so that we can all, in the words of the OECD, 'understand, evaluate, use and engage with written texts to participate in society, achieve our goals, and realise our potential.

Locating the guidelines and the supporting evidence

To identify established guidelines informing the production of AWI, and the research evidence supporting these guidelines, we conducted a systematic literature review. The review process was informed by the *Preferred Reporting Items for Systematic Reviews and Meta-Analyses* (PRISMA) (Moher, Liberati, Tetzlaff, & Altman, 2010), and the *Social Care Institute of Excellence* (SCIE) (Rutter, Francis, Coren, & Fisher, 2010). Three primary research databases were used (Web of Science, Academic Search Complete and ProQuest), as well as Google Scholar.

Following review of all the documents retrieved, eight research articles were identified. These included citations of seven guidelines. Subsequently, the guidelines were also reviewed to determine their common and unique features. Some of the guidelines included information about different forms of accessible information (e.g. video, digital and audio communications) however, these were excluded from our current considerations, as the focus of this review was on written and printable information.



What issues need to be considered when preparing accessible written information?

The guidelines were reasonably consistent about the recommendations for producing AWI. However, not all guidelines included the same specifications, and a few provided contradictory recommendations for the same specifications. One guideline from the International Federation of Library Association and Institutions (IFLA) (Nomura et al., 2010), did not make recommendations on many of the specifications included by the other organisations. This is noteworthy, as an earlier version of these guidelines (Tronbacke, 1997), is one of the few guidelines cited as the basis for accessible literature subsequently empirically tested in the studies selected for review (Fajardo et al., 2014). The three broad factors that emerged as important across the guidelines were: formatting documents, writing accessible language and using images.

Formatting documents

How information is presented in a written document is important, and formatting specifications are perhaps the least ambiguous guidelines to follow when producing AWI.

1) Page layout

According to the guidelines, text should be broken into short chunks, with plenty of space between lines and paragraphs. The Inclusion Europe (2014), ILSMH (Freyhoff et al., 1998) and the IFLA (Nomura et al., 2010) guidelines recommended one sentence per line, where possible. Most guidelines also recommended the use of clear headings to break up information. The Department of Health Guidelines (November, 2010) and Mencap (2000) recommended including content lists, especially in longer documents.

2) Text alignment and hyphenation

All guidelines (except the IFLA guidelines, which did not include a recommendation) recommended left aligning text and caution against justifying the right-hand margin. Most guidelines caution against hyphenating words on the right-hand margin of the text (i.e. when a word flows over on to the next line). Inclusion Europe (2014), the Norah Fry Research Centre (Rodgers et al., 2004) and Scope (2015) recommended avoiding laying text out in columns.

3) Font and the use of contrast and coloured text

Almost all guidelines recommended non-serif fonts, such as Arial, Helvetica or Verdana. However, two guidelines recommended clear serif fonts, such as Times New Roman (Freyhoff et al., 1998; Nomura et al., 2010). Most guidelines agreed that 14 point is a good font size, although the Department of Health guidelines (November, 2010) recommended a minimum of 16 point and the IFLA guidelines (Nomura et al., 2010) suggested 11-12 point font size.

All guidelines stress the importance of clear, easy-to-read font and high contrast between text and background, but the recommendations around the use of coloured text were less clear. Some guidelines recommended the use of black or dark text on a white or light-coloured background, or white text on a dark-coloured background (Scope (Aust) Ltd., 2015; UK Department of Health, November, 2010), while others suggest avoiding white text on a dark background (Freyhoff et al., 1998; Mencap, 2000; Rodgers et al., 2004).

All guidelines (except the IFLA guidelines, which did not include a recommendation) recommended avoiding the use of block capitals and italics. Most cautioned against the use of underlining, although the *Make it Simple Guidelines* (Freyhoff et al., 1998) recommended the use of underlining for emphasis.

4) Highlighting important points

Most guidelines recommended the use of bullet points, boxes and bold text to highlight important points, although some urged caution about the number of layers or levels of bullet points (Freyhoff et al., 1998; Inclusion Europe, 2014).

The Department of Health Guidelines (November, 2010) both recommended and cautioned against the use of bold text in documents, claiming that too much bold text on a page can be distracting.

5) Paper

Most guidelines recommended the use of good quality matt paper that is not 'too thin'. Three guidelines specified the size of paper to be used, although they all made different recommendations. Norah Fry Research Centre's *Information for All* guidelines (Rodgers et al., 2004) recommended A4 size paper, Inclusion Europe (2014) recommended A4 or A5, while Mencap (2000) suggested the use of A3 paper.

6) Number of letters and words

A majority of the guidelines did not make recommendations about the optimal number of characters to a line of text, number of words in a sentence, or the number of pages in a document. CHANGE (2009), *Information for All* (Rodgers et al., 2004) and Scope (2015) recommended lines of text of no more than 60 characters. CHANGE noted that this figure should be less if using a larger font or pictures, and Scope recommended no more than 25-30 characters if using pictures. Mencap (2000) did not quantify line length, but recommended keeping it short, noting the width of an A3 page is too long.

The Department of Health (November, 2010) and *Information for All* (Rodgers et al., 2004) both recommended sentences of 15 words or less. Rodgers et al. (2004) also cited James Hartley (1994), indicating that sentences of more than 40 words each are too long. CHANGE (2009) noted that lines of text should not be shorter than 5 words, stating that very short lines of text make the reader's eye jump from one line to the next too quickly.

You

You must
**understand your rights
and responsibilities**

tell your manager when you are
not happy with your work

understand the rules at work

ask for help if you need it.

5

Writing accessible language

One of the criticisms of accessible information guidelines in the literature is that many of the recommendations are written in general terms, making them difficult to apply (Fajardo et al., 2014; Karreman et al., 2007). For example, the *Make it Simple* guidelines (Freyhoff et al., 1998) recommends avoiding “long words which are difficult to read and speak” (p. 12). As Fajardo et al. (2014) noted, it is difficult to judge how well a document meets a guideline such as this, since it is difficult to quantify such a variable. Unlike formatting, which is a relatively concrete concept, following guidelines for writing accessible language can be challenging. For example, the extent to which words are easy to understand is not easily quantifiable, especially if the material is for an audience of diverse literacy.

The following offers a summary:

1) **Language**

All guidelines agree that clear, simple, everyday language is best, and that sentences should be short and clear. Most guidelines recommended using active language (i.e., active voice in contrast to passive voice, where the subject of the sentence performs an action rather than being the receiver of the action) and the presentation of one main idea per sentence. Most guidelines recommended consistency – using the same word or form of words when referring to the same thing throughout the document. Inclusion Europe (2014), ILSMH (Freyhoff et al., 1998) and the Norah Fry Research Centre (Rodgers et al., 2004) emphasised the importance of using adult language when writing for an adult audience. All guidelines (except the IFLA guidelines, which did not include a recommendation) caution against the use of jargon and complicated words. If difficult words need to be included, they should be explained.

Most guidelines caution against the use of acronyms or abbreviations, unless commonly known, and recommended the use of personal language (i.e. ‘I’, ‘you’, ‘we’).

2) **Grammar**

The Department of Health (November, 2010) and IFLA (Nomura et al., 2010) both noted that it is acceptable to start sentences with prepositions such as ‘and’ and ‘but’. Scope (2015) recommended the use of nouns rather than pronouns, and Inclusion Europe (2014) noted that, if using pronouns, it is important to be clear about who or what the pronoun is referring to. CHANGE (2009), Department of Health (November, 2010), ILSMH (Freyhoff et al., 1998) and Scope (2015) all advised against the use of contractions such as don’t or can’t. Inclusion Europe (2014) and ILSMH (Freyhoff et al., 1998) recommended the use of present tense, rather than past tense or subjunctive tense.

3) **Punctuation**

Most guidelines advised keeping punctuation simple, avoiding semicolons, colons, hyphens and too many commas. In addition, CHANGE (2009), ILSMH (Freyhoff et al., 1998) and Scope (2015) all noted that special characters and symbols (e.g. #, &, %, ~, ?, \$, etc.) should be avoided.

4) **Numbers**

All guidelines (except the IFLA guidelines, which did not include a recommendation) recommended writing numbers as digits, not words. Department of Health (November, 2010), ILSMH (Freyhoff et al., 1998) and the Norah Fry Research Centre (Rodgers et al., 2004) all noted that using percentages and large or complicated numbers can be confusing and should be avoided. Instead they recommended examples like using ‘1 in 10’ or ‘some’ instead of 10% and words like ‘many’ for a large number like 3421.

Using images

All the guidelines included recommendations for the use of images as a means of improving the accessibility of information. Images can be drawings, photos or symbols. The following represents a summary of findings:

1) The nature, size, and placement of images

The Department of Health (November, 2010) and ILSMH (Freyhoff et al., 1998) recommended using only one type of image throughout a document, while Mencap (2000) and the Norah Fry Research Centre (Rodgers et al., 2004) both recommended using a mixture of image types.

Several guidelines recommended that images should be as big and clear as possible and placed to the left of the accompanying text (Change, 2009; Rodgers et al., 2004; Scope (Aust) Ltd., 2015; UK Department of Health, November, 2010). All guidelines (except for ILSMH, which did not make a recommendation) recommended that images should be placed in direct connection with the text they refer to. The Department of Health (November, 2010) and Scope (2015) both noted that images should be used sparingly, as too many images can be confusing.

2) Photographs

According to the Mencap guidelines (2000) and the Norah Fry Research Centre guidelines (Rodgers et al., 2004), people with ID prefer photos. Most guidelines agreed that photos were good for showing specific people, places and things happening (Change, 2009; Inclusion Europe, 2014; Mencap, 2000; Rodgers et al., 2004; UK Department of Health, November, 2010). If using photos, it is important to ensure that they are clear, and without background or foreground clutter. The extent to which generic photos can be used, and where the images need to be individualised to the person remains unclear from the guidelines.

3) Drawings or illustrations

The Mencap (2000) and the Norah Fry Research Centre guidelines (Rodgers et al., 2004) note that drawings can often convey information better than a symbol or photo, especially when trying to show a single concept. They also note that it is important to ensure that drawings and illustrations are not childlike portrayals.

4) Symbols

The use of symbols was less universally endorsed than other types of images. Some guidelines opposed the use of symbols outright, noting that their meaning has to be learned (Change, 2009), while others cautioned against the use of symbols unless the intended audience are known to be confident symbol users (Freyhoff et al., 1998; Mencap, 2000). Symbols can be as abstract as letters or words, and their meaning needs to be taught to an end-user before they can be used effectively. As Freyhoff et al. (1998) noted in the ILSMH guidelines, "It is not realistic to put a page of symbols in front of someone with a learning disability and expect him or her to understand what the symbols mean. Just as words must be taught to children learning to read, the meaning of the symbols also has to be taught" (p. 15).



The evidence informing the most commonly-used guidelines

The guidelines displayed were consistent with respect to their recommendations on how to prepare AWI, however, it was not clear whether research informed their development. A number of the guidelines cited other guidelines in their references, but only one, *Information for All: evidence based guidance on producing accessible information for people with learning disabilities* (Rodgers et al., 2004) was informed by a research process. The authors used thematic analysis of data from semi-structured interviews with providers of accessible information and a review of the evidence in the field of accessible information design and production (Rodgers & Namaganda, 2005). Guidelines were developed using categories identified in the initial data analysis. The authors found a general lack of traditional ‘high grade’ evidence (e.g. randomised control trials). Consequently, they also included suggested techniques from the interviews in the final guidelines. Rodgers and Namaganda (2005) concluded “we have not (if we ever could) reached a stage where there can be hard and fast rules about what makes a piece of information accessible for people with learning disabilities.” (p. 54). Instead, they suggested that aspects of accessible information guidelines should be prioritised according to the needs of the audience.

What evidence is there to support the recommendations made by the various guidelines with respect to preparing accessible written information resources?

There is relatively little evidence in the literature to support most of the recommendations from the commonly-used guidelines for preparing AWI. It is evident that there are a large number of variables included in the guidelines, which makes empirical measurement challenging, especially when the diversity of the audience using AWI and differences in the way they engage with it are taken into consideration as well. Therefore, it is hardly surprising that what little evidence there was in the literature considered aspects of the recommendations found in the guidelines, rather than focusing on the process as a whole.

Formatting documents

Only one of the factors relating to formatting documents – the number of letters and words – has been empirically tested in a study looking at whether the use of ‘easy-to-read’ text improved reading comprehension for people with ID. In a study testing the reading comprehension of groups of people with ID using AWI resources adapted according to IFLA guidelines (Nomura et al., 2010), Fajardo et al. (2014) measured linguistic variables to determine which linguistic features of text were important in rendering a piece of text easy to read. They found that the longer the texts, that is, the greater the number of words in a sentence, and the greater the number of sentences in a paragraph, the lower the inferential comprehension (i.e. the underlying meaning of the text, and its implications, which requires the person to abstract meaning from what they have read) of the students. However, neither word length nor word frequency correlated significantly with comprehension. These results supported the recommendations of most guidelines regarding writing in short clear sentences and breaking information up into smaller chunks.

A second study from Karreman et al. (2007) also tested whether reading comprehension was improved using a website adapted according to the principles of ‘easy-to-read’ using ILSMH guidelines (Freyhoff et al., 1998). The study compared the reading comprehension of a group of participants with ID and a group of participants without ID using a website adapted using AWI guidelines and the same website without adaptation. They found that while the group with ID’s comprehension was lower than the control group, both groups’ comprehension was improved when using the adapted website. While the authors listed a number of factors applied to the adapted website, including using short sentences, covering one idea per sentence and limiting text to one sentence per line, they did not measure the impact of specific factors on comprehension.

Writing accessible information

The two studies cited in the previous section both noted the recommendation to use clear, simple, everyday language in the preparation of AWI. (Fajardo et al., 2014; Karreman et al., 2007). Neither study specifically tested this factor in their study, although Fajardo et al. (2014) attempted to measure this using a number of linguistic variables. We found no other evidence in the literature to support the use of any of the other factors that contribute to writing accessible information.

The use of images

Few studies have empirically tested the impact of adding images to simplified language on the comprehension of readers with ID. Three studies tested the value of using images to improve comprehension of AWI, two using symbols (Jones, Long, & Finlay, 2007; Poncelas & Murphy, 2007) and one using photographs (Hurtado, Jones, & Burniston, 2014). These studies employed different measurements (e.g., variation in familiarity with symbols, method used to test comprehension), making comparison difficult, but the results did not offer overwhelming support for the use of images in AWI. For example, Jones et al. (2007) compared the comprehension of participants with ID reading an example of written text, with and without symbols added. Jones et al. presented participants with two texts without symbols and two texts where symbols had been added, and asked comprehension questions about each text. Participants had not received any training in symbols. The researchers found a small, but significant improvement in participants' comprehension when using the symbolised text when compared to the non-symbolised text. In addition, participants with a lower baseline reading level benefitted more from the addition of symbols than those with higher reading levels (Jones et al., 2007).

Poncelas and Murphy (2007) randomly assigned participants to a text only or text and symbol document, and then presented a series of comprehension questions. Unlike participants from the Jones et al. (2007) research, these participants were very familiar with symbols. The results suggested that the comprehension levels of both groups were relatively low and that the addition of symbols to text did not significantly increase understanding in either time set. The study did find that participants with higher reading levels showed greater comprehension of the material, and that those who were familiar with symbols showed significantly higher comprehension of the leaflets at time 2.

It is difficult to draw conclusions about the use of symbols in AWI given differences in participants and research methods. However, both studies reported increased benefit from the addition of symbols for participants who had prior familiarity with them. This supports the recommendations of some guidelines included in this review, which propose caution with the use of symbols for people who are not familiar with them (Freyhoff et al., 1998; Mencap, 2000).

While some guidelines offered qualified recommendations for the use of symbols, or did not recommend their use at all, the use of photos is more universally recommended by the guidelines. One study from Hurtado et al. (2014) compared comprehension of an Easy Read leaflet adapted using text and photos or photos-only by a group of people with ID. While both modalities resulted in improved understanding for participants, neither was significantly better at promoting comprehension, regardless of baseline reading level. Interestingly, the authors found that the photo-only material was more effective for promoting comprehension for people with higher verbal IQ, leading them to recommend that the use of picture only resources might be beneficial for some people with mild ID. However, this recommendation may be viewed with some caution, because although the picture-only material did not include text, researchers read the leaflet text to the participants, raising some doubt as to whether this method was 'photo-only'.

What else do we need to consider when supporting people to use written information?

Finally, we examined what the research literature had to say about how a person with ID might best be supported when using AWI. This is important, given that all people have different needs and preferences for communication, regardless of whether they have a disability or not. A resource can be prepared using all the recommendations from a chosen guideline, but if the recipient of the information cannot read it, it is of little use.

Supporting the delivery of accessible written information

A number of studies included in the review involved researchers reading the AWI to participants in addition to providing it in written form (Hurtado et al., 2014; Mander, 2016; Poncelas & Murphy, 2007). Hurtado et al. (2014) found that participants benefitted most from having material shown and read to them. The authors postulated that, given the reading difficulties experienced by many people with ID, they may be auditory learners and may be more likely to understand and retain information given orally. However, reading or explaining AWI to people with ID is not necessarily a guarantee of greater comprehension. In their study examining the benefit of symbols, Poncelas and Murphy (2007) suggested that delivering information aurally, in addition to visually, may contribute to a reduction in comprehension due to information overload.

These contradictory results highlight an important issue in the field of AWI. Careful consideration needs to be given to tailoring the communication support that is given to the individual. Mander (2016) used conversation analysis to assess interactions between two women with ID and their community-based nurses as they discussed health-related AWI. The researcher reported a number of considerations when supporting the delivery of information using AWI. Firstly, the quality and accuracy of the AWI was important, especially when it focuses on simple statements which are more likely to be agreed with, rather than difficult concepts which are harder to explain (e.g., focusing on the social aspects of an activity, such as attending a dementia clinic, rather than what the activity entails). The author also emphasised the importance of remaining vigilant to verbal and non-verbal cues that may demonstrate a lack of understanding. Finally, the delivery of additional information may have the intention of facilitating understanding, but could also mean the person with ID may be more likely to agree if they do not understand (Mander, 2016; Poncelas & Murphy, 2007; Turnpenny et al., 2016).

The involvement of people with intellectual disability in producing accessible information

There is broad agreement that involving people with ID in the production of that information (i.e., employing the principles and practices of co-design) is important. As Rodgers and Namaganda (2005) noted, one of the most important principles identified during the *Information for All* project was that 'information for people with learning disabilities should be produced *by* or *with* people with learning disabilities' (p. 33).

Involving people with ID in the production and testing of AWI (i.e., co-design and co-production) was deemed to be of particular use when preparing tools for data collection where input from people with ID can identify issues with interpretation of words and images (Turnpenny et al., 2016). More broadly, several articles emphasised that the best way to ensure accessibility of all written information was to understand the target audience, and involve people with ID at all stages of production and evaluation (Karreman et al., 2007; Poncelas & Murphy, 2007; Rodgers & Namaganda, 2005). However, it is interesting to note that none of these studies made direct comparisons of the nature and effectiveness of information prepared with and without the involvement of people with ID.

What do we know and what should we do?

Access to information is an important human right for all people. Article 9 of the UNCRPD states that people with disability have the right to access to information on an equal basis to others (United Nations, 2006). Accessible written information is a popular way of conveying information to people with ID, and a number of international guidelines have been written on the factors that need to be considered when preparing AWI. However, making information accessible involves more than following a set of recommendations from a guideline. It also means delivering that information in a way that suits the needs and preferences of the person with ID, and maximises the person's choice and control over the information.

Without accessible information, the right of people with disability to self-determination, as outlined in the UNCRPD, cannot be upheld, and we run the risk of falling short of achieving key goals of the United Nations' 2030 Development Agenda. Communication is highly individualised, so it follows that tailoring information to reflect the needs and preferences of the intended audience, and delivering it in a way that best suits the individual with ID, offers the greatest chance of providing information that is accessible and which will promote an inclusive society.



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