

**Training Young Adults with Intellectual Disability to Read Critically on the  
Internet**

Delgado, P., Ávila, V. Fajardo, I. & Salmerón, L.

ERI Lectura, University of Valencia

Manuscript accepted for publication 02/12/18

*Journal of Applied Research in Intellectual Disabilities*

Correspondence may be sent to:

Ladislao Salmerón

ERI Lectura & Department of Developmental and Educational Psychology

University of Valencia

Avd. Blasco Ibáñez, 21. 46010 - Valencia (Spain)

e-mail: ladislao.salmeron@valencia.edu

Authors' notes:

The four authors contributed equally to this work.

This research was funded by a grant from the Spanish Secretaría General de Universidades (EDU2014-59422). We thank the students and schools for their participation, and to Prof. Marc Stadler for sharing the materials used in their intervention program and for providing useful insights on the program.

## **Abstract**

### Background

Young people with intellectual disability (ID) are becoming frequent Internet users but they present difficulties selecting reliable Internet sources (Salmerón et al., 2018).

### Methods

We tested an instructional program aimed at increasing skills to evaluate information from the Internet of 33 young adult students with ID enrolled in special needs education (19.4 years). The program was composed of different webpages that provided conflicting views on a controversial topic. Students participated in small groups discussions supported with Wh-questions graphic organizers and contrasting cases during seven sessions.

### Results

Differences between pre and post tests indicated that the program is effective in increasing students' ability to select trustworthy webpages, and to use source characteristics to justify such selection by means of supervised instruction.

### Conclusion

Promoting Internet use in a safe way might increase young people with ID's opportunities to make choices and self-determined decisions about their live (Shogren & Wehmeyer, 2016).

**Keywords:** Intellectual disability; media literacy; intervention; Internet reading.

## **Introduction**

People with intellectual disability (ID) are characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social and practical adaptive skills, which originates before age 18 (Schalock et al., 2010). Regardless of such limitations, there is a growing movement recommending that students with ID now be held to higher literacy standards (Browder et al., 2009; Copeland & Keefe, 2016; Lundberg & Reichenberg, 2013). Promoting individual literacy skills to satisfy personal interest and enjoyment, and to improve decision-making in real life, may have positive consequences in students' self-determination (Shogren & Wehmeyer, 2016). However, most research on reading instruction with students with ID has focused on training basic skills such as vocabulary and phonemics, while more advanced literacy instruction remains an under-researched but essential area for this population (Afacan, Wilkerson, & Ruppard, 2018; Browder, Hudson & Wood, 2013).

In our current digital world, people with ID need increased literacy skills to benefit from the unprecedented access to information and communication on the Internet. Indeed, the Internet enables this population to participate actively in society to a greater level, because it reduces or even eliminates many barriers that limit their access to activities in daily life (Chadwick, Wesson, & Fullwood, 2013). For example, the Internet allows laypersons to access expert information that can inform them about relevant life decisions, such as the consequences linked to a particular diet. Still, people with ID have to deal with some risks and cognitive challenges inherent to the open editorial policy of the Internet, which means that anybody can post information regardless of their level of expertise or their motives. Consequently, on the Internet, expert and neutral information stands hand and hand with dubious, biased and false

information. Thus, to avoid misinformation, people need to take a critical stance while gathering information from the Internet, particularly when they want to learn about a topic for which there are several conflicting views (Salmerón, Kammerer, & Delgado, 2018).

As it is next reviewed, people with ID have been traditionally defined as credulous (Greenspan, Loughlin, & Black, 2001; Lussier-Desrochers et al., 2017), which makes them susceptible to fraud in daily live activities in general and prone to accept untrustworthy information in particular (Salmerón, Gómez, & Fajardo, 2016). In this study, we tested an instructional program to teach students with ID to read critically on the Internet. In the next sections, we review the literature on source evaluation by people with ID, as well as previous instructional programs aimed at improving evaluation skills. We then present the results of our program and discuss its implications in light of the current social trend to raise the literacy threshold to students with ID.

### **Source evaluation by students with ID**

During the last decade, several efforts from media studies and education have started to provide a comprehensive picture of students' with ID skills, perceptions and use of Internet resources (e.g. Caton & Chapman, 2016; Chiner, Gómez-Puerta, & Cardona-Moltó, 2017). A general concern has been the potential digital divide between people with ID and typically developing ones (Chadwick et al., 2013; Lussier-Desrochers et al., 2017). While in the past it has been reported that young adults with ID lack the basic skills to access Internet resources (Li-Tsang, Yeung, Chan, & Hui-Chan, 2005), more recent studies suggest that this population can master the technical skills to efficiently interact with some Internet resources. Rocha et al. (2012) found that young adults with ID can efficiently search for specific pages in web menus, especially if images are used to support textual information. They can still master to some extent

Internet search with textual information after appropriate instruction (Zisimopoulos, Sigafoos, & Koutromanos, 2011). Molin, Sorbring, and Löfgren-Mårtenson (2017) reported that the young adults with ID they interviewed didn't have major technical difficulties to interact with Social Network Sites such as Facebook, and that if they encountered a technical problem they knew whom to consult to find a solution.

Although young adults with ID tend to have a positive perception of the Internet and its potential, they are also aware of the dangers of interacting with non-disabled peers, such as the risk of being hurt or ending up in undesirable situations. Young adults with ID are affected by several risks on the Internet, such as excessive frequency of use (Jenaro et al., 2018), being threatened on social media or accessing webpages with undesirable content (Chadwick, Quinn, & Fullwood, 2017; Chiner et al., 2017; Sallafranque-St-Louis, & Normand, 2017). The effect of such risks can limit the positive effects of interacting with the Internet. For example, previous bad experiences, and not a lack of motivation, has been reported by young people with ID as the main reason to decrease their Internet use (Molin et al., 2017). Regarding the different uses, young people with ID tend to use the Internet more often for social and recreational than for educational tasks (Jenaro et al., 2018). Their ability to efficiently use Internet resources for learning purposes is the focus of the current study.

Drawing upon this background, in this study we analyzed young adults' with ID ability to critically identify information sources when learning about controversies on the Internet. Previous research has defined sourcing as attending to, evaluating, and using available or accessible information about the sources of documents, such as who authored them and what kind of documents they are (Bråten, Stadtler, & Salmerón, 2018). Traditionally such skills have been considered exclusive of academics (Wineburg, 1991), and therefore not much attention has been paid to develop sourcing

skills in primary and secondary education. To the extent that textbooks are edited and curated by experts, in a ‘print only World’ there was no need to develop such skills to become literate. However, the emergence of the Internet as a main provider of information has rapidly changed this scenario. The Internet has brought to the main public an unprecedented access to controversial, dubious, biased and even false information. In such context, applying sourcing skills allow laypeople, as well as students, not only to filter relevant information (e.g. to identify and to evaluate potentially misleading or false information), but also to comprehend complex controversial topics (e.g. different sources may have different views according to their interests, preferences or expertise) (Rouet & Britt, 2011). In sum, developing sourcing skills has become an essential aspect of digital literacy.

Previous works have extensively documented that typically developing students from primary and secondary education will often fail to attend to source information (e.g., author and document type) when reading multiple webpages with the goal to learn about a topic (for a review see Bråten et al., 2018).

Few recent studies have explored sourcing skills of students with ID in different Internet scenarios (Salmerón, Fajardo, & Gómez, 2018; Salmerón, Gómez, & Fajardo, 2016). Salmerón et al. (2016) have studied to what extent a group of young adults with ID used source characteristics when selecting the best recommendation in a web forum. In such scenarios, a fictitious friend had posted a request to solve a daily life problem (e.g. Should I bring my pet with me on vacation?), and she obtained responses from authors with different credentials (e.g. anonymous or experts on the topic). The results showed that adolescents with typical development selected more often recommendations from experts on the topic, while students with ID selected to the same extent anonymous and expert recommendations. In a follow up study, Salmerón et al.

(2018) requested a group of students with ID to select the best webpage to get information about a conflicting topic (e.g. Can a social network use my pictures for commercial purposes?) from a short list of results resembling a well-known search engine. The URL provided relevant source information, while half of the webpages were hosted in trustworthy web sites (e.g. police), the other half were hosted in less trustworthy pages (e.g. students' blog). The results showed that while searching familiar topics (i.e. social networks), students with ID selected more relevant and trustworthy pages than irrelevant and less trustworthy ones. For the searches of less familiar topics (i.e. daily health), their selection of pages was rather random.

In sum, the existing evidence suggests that students with ID struggle to evaluate information from texts, especially when faced with conflicting information about less familiar topics. The reasons for such ineffective processing are unclear, as it could be a lack of strategic knowledge, or a deficit in pre-requisite skills. For example, not using source information could be partially rooted in their deficits in social thinking, such as the inability to interpret the intentions of others (Leffert, Siperstein, & Widaman, 2010) or the lack of understanding of new social interaction rules and conventions on the internet (Lussier-Desrochers et al., 2017). Consequently, the extent to which evaluation skills can be promoted in people with ID by means of instruction remains an open question, which will be the educational challenge addressed in this study.

### **Instructional programs to foster source evaluation**

During the last decade there have been several attempts to develop instructional programs to enhance students' evaluation skills (for reviews see Brante & Strømsø, 2018; Jeong, Cho, & Hwang, 2012; Nordheim, Gundersen, Espehaug, Guttersrud, & Flottorp, 2016). Brante and Strømsø (2018) have reviewed 18 intervention studies specifically focused on source evaluation skills in primary, secondary and graduate

education. Most intervention programs request students' to solve an inquiry task by using multiple webpages that provide different perspectives of the topic. Guidance to source is usually provided via scripts or prompts. Most interventions emphasize the need to identify the information source and to evaluate its credibility. Programs addressing secondary and graduate students also focus on the need to link the information source to what is said in the text, to help students interpreting the message. Overall, students profit from instruction to a certain degree, with big variations between studies. Of note is that in a majority of studies the effectiveness of the programs are measured by using post-tests that took place immediately after the intervention, and thus the long time effects are still unclear (Brante, & Strømsø, 2018; Nordheim et al, 2016).

As evidenced in Brante and Strømsø's (2018) review, all intervention programs aimed at improving students' source evaluation have involved typically developing students, with the exception of the work by Stadtler, Scharrer, Macedo-Rouet, Rouet, & Bromme (2016). In that study, the authors explored a group of 20 year old students from a vocational school, whom had low levels of reading skills. Specifically, their average score in a standardized reading test corresponded to the 30<sup>th</sup> percentile. The intervention program included pairs of texts about different controversies. Texts included author's occupation, which could be more or less pertinent for the topic discussed. For example, in the discussion about carbon dioxide storage the pertinent expert was a physicist, while the non-pertinent expert was a business man. The instructional group was trained during 90 minutes by means of direct instruction and group discussion. The major strategies emphasized at the program were to identify texts' sources and to evaluate its credibility according to the correspondence between the authors' area of expertise and the topic. Results from an immediate post-test revealed that the instructional group at the post-test, compared to the pre-test, agreed more often with the experts' account and



referred more often to sources to justify their selection. No difference was found regarding memory for sources.

The need of educational programs or individualized support to people with ID aimed to prevent the deception risk on the Internet has been highlighted before (e.g. Lussier-Desrochers et al., 2017) but, to our knowledge, it has been neither implemented nor tested. Programs designed specifically for students with ID usually aim to train literacy skills in paper, but not evaluation skills applied to webpages (e.g. Lundberg & Reichenberg, 2013). In the absence of studies aimed at training sourcing skills to students with ID, the question arises as to what extent we could use programs developed for typically developing students to instruct students with ID. In their review of reading literacy interventions, Copeland and Keefe (2016) have concluded that many of the research-based strategies used in programs with typically developing students are also effective with students with ID, such as strategy instruction. For this purpose, the authors conclude that students with ID need systematic direct instruction to acquire reading strategies.

### **The current study**

The present intervention program is aimed to train information evaluation on the Internet to a group of young adults with ID whom were enrolled in special needs educational programs of two secondary schools in Valencia, Spain. As it is described at the methods section, the program is substantiated in recent theories of source evaluation (Bråten et al., 2018), and uses instructional methods that have been applied with success in different literacy programs with students with ID (Copeland & Keefe, 2016; van den Bos, Nakken, Nicolay, & van Houten, 2007). We expect that a seven-session intervention will improve students' consideration of source information, which will lead

them to select more trustworthy webpages. Specifically, we expect that, as compared to the pre-test, students receiving the instruction:

Hypothesis 1: will select more often trustworthy than untrustworthy webpages.

Hypothesis 2: will base their selection of webpages more often on source characteristics.

Hypothesis 3: will show better memory for source information.

## **Method**

### **Participants**

Fifty young adults with moderate to mild ID (22 females, mean chronological age = 19 years) participated in the study. Participants were students from two educational centers from Valencia, a large city in Spain. Seventeen students came from a center that hosts a special needs program, within a regular high school. The remaining thirty-three students came from a vocational training center for people with special needs, addressed to people that have completed the mandatory 10 years of schooling in Spain. To access both programs, students must have an official diagnosis of ID and enough personal and social autonomy to follow different training modules. The study was approved by the pedagogical team of both centers, and the intervention program was included as a training activity aimed at training students' digital literacy. The study was approved by the Ethical Committee of Experimental Research of the University of Valencia (procedure H1443008998347) and it was conducted according to the principles of the Declaration of Helsinki. The final sample included those participants who attended the pre- and immediate post-tests, as well as the 75% of the training sessions ( $n = 33$ ). Both the results of baseline assessment (see Table 1) as well as of experimental tasks are only provided for this final sample of 33 students.

### ***Baseline measures***

Participant's intelligence quotient (IQ, see Table 1) was determined by their scores on the Spanish versions of the Kaufman Brief Intelligence Test (KBIT) (Kaufman & Kaufman, 1997) or the Wechsler Intelligence Scale for Children (Wechsler, 2005).

Sentence reading comprehension was assessed by means of the sentence comprehension subtest of the PROLEC-R (Spanish standardized reading battery of Cuetos, Rodríguez, Ruano, & Arribas, 2014). This subtest asks participants to read a sentence and, afterwards, perform the action described at the sentence (e.g. Hit the table three times) or select the picture that best matches the meaning of it (out of 3 or 4). The average direct scores of the participants (see Table 1) was more than two standards deviation below the mean of sixth grade, the higher schooling age for which the PROLEC-R provides scales for this subtest.

Additionally, participant's use of Internet was assessed by means of an ad hoc questionnaire (see Appendix), which was orally applied by evaluators and self-reported by participants. Most of the participants had Internet connection at home, were active Internet users and use it in an everyday basis, especially for watching videos and looking for information about their interests and worries and reading Internet forums (for a full report of these results see Table 1). This profile of Internet uses confirms that the sample was a suitable target for the intervention program.

[Insert Table 1 here]

### **Training program**

The training program was adapted from previous intervention works (Pérez et al., 2018; Stadtler et al., 2016), and was inspired by theoretical accounts that conceive

sourcing as attending to, evaluating, and using information about the sources of documents (Bråten et al., 2018). The training consisted of 7 modules. Modules 1 to 4 aimed to sensitize and to train participants to identify the existence of four main factors that affect the trustworthiness and validity of claims they can meet on the Internet: (1) It is possible to find different statements about the same issue; (2) Webpages vary in restrictions on who can publish on them; (3) Expertise of the author of the text in regards to the issue; and (4) The intention of the author or the webpage. Modules 5 to 7 tried to teach participants how to globally attend to the factors affecting the trustworthiness of information and how to evaluate it by means of what they learnt during the four first sessions. These seven modules were organized around three Wh-questions: (1) What it is said, (2) Who said it, and (3) Where it is said.

The program used a combination of instructional methods, including elements of direct instruction, group discussions, Wh-questions graphic organizers, modelling and contrasting cases, all of them adapted to guide and group oral reading. Such methods have proved to be effective in previous intervention studies aimed to promote reading and social skills to students with ID (Copeland & Keefe, 2016; Hetzroni & Banin, 2017; Lundberg & Reichenberg 2013; van den Bos, et al., 2007). In particular, van den Bos et al. (2007) tested the effectiveness of two reading comprehension intervention programs to a group of adults with mild intellectual disabilities. One program used mostly elements of direct instruction, in which an expert explained and modelled comprehension strategies. Another program used reciprocal teaching (Brown & Palincsar, 1989), which started with direct instruction and gradually introduced dialogues and discussion with and between peers. Results indicated that participants improved their comprehension level equally in both programs (van den Bos et al., 2007).

Specifically, in our program modules 1 to 4 started with the researcher directly instructing and modelling the use of the strategies using the module's conflicting texts (see below). Following Browder, Hudson & Wood (2013), a graphic organizer was used to teach the Wh-questions (What, Who and Where) to the students during these modules (one Wh-question per module). Then, participants were encouraged to discuss in group to respond to the conflict raised during the session. Finally, modules 5 to 7 used contrasting-cases, an instructional method in which students compare cases about the information or procedure to be learned (Braasch, Bråten, Strømsø, Anmarkrud, & Ferguson, 2013; Salmerón & Llorens, 2018). Our program provided participants with descriptions of the steps taken by two fictitious students to evaluate the trustworthiness of a webpage. While one of the students applied correct strategies, as the ones identified in modules 2 to 4, the other student used incorrect strategies. Participants were required to discuss which of the fictitious students will solve the task correctly, and to explain why. Again, a graphic organizer was used to help readers to make a decision and to explain it accordingly to the answers to the Wh-questions.

We designed eight pairs of conflicting texts (one pair per module) with different socio-scientific controversies. Topics were selected in a pilot study, following the interests of a different group of eleven students with ID enrolled in a vocational school. This was done in order to promote students' engagement and to facilitate comprehension (Copeland & Keefe, 2016). Topics included: Consumption of pills "for learning", Dangers of diets to lose weight, Diesel or gasoline car, which is better? Are zoos suitable? Mineral or tap water, which is better? Texts were drawn out from actual web sites and simplified linguistically following the recommendations of the International Federation of Library Associations and Institutions (Nomura, Nielsen, & Tronbacke, 2010). Simplification was aimed to support comprehension of students with

ID, who usually present deficits in reading comprehension skills (Fajardo et al., 2014; Fajardo, Tavares, Avila, & Ferrer, 2013).

Texts were presented to the whole group using of a video projector. Texts were presented as webpages, that included the *url*, a web logo and some information about the author (i.e., name and profession) at the bottom (Figure 1). In each session, the webpages were presented as part of a narrative in which two fictitious characters wanted to learn about the controversies. Each webpage presented a different view on the controversy. They also differed on their degree of trustworthiness. More trustworthy webpages were written by an expert and benevolent author, or they were published in a website with strict editorial policies (e.g. web of a medical journal). By contrast, less trustworthy webpages were written by laypersons, webpages had clear vested interests (e.g. a commercial company), or they were published in websites without editorial policies (e.g. web forum) (cf. Paul et al, 2017)

[Insert Figure 1 here]

### **Intervention measures: Measures of Internet sourcing**

**Selection and justification task.** We developed three multiple document tasks for the pre, immediate and delayed post-tests. In all three tasks participants saw two webpages, one more trustworthy and another less trustworthy, that provided different views on a controversy (see Table 2 for an overview of the webpages). Participants had to orally indicate which of the two webpages they would recommend and to justify their decision. Responses were videotaped, and later transcribed for analysis. Justifications were first divided between ideas, and each idea was coded to the extent that a) justification used their prior knowledge (e.g. “Because Vodafone [participant refers to this company as an agent] and my mother tell me that WiFi is not bad”), b) justification was a paraphrase of an idea from the text or an elaboration, and c) justifications cited an

information source (author's occupation, web provider, or embedded source, see Table 2). When a source was cited, we also coded the extent to which they specified authors' expertise (i.e. occupation) or intentions. 42% of the transcriptions were coded by two trained researchers, yielding an average reliability score of Cohen's  $kappa = .88$  (ranging from .71-1).

[Insert Table 2 here]

**Memory for sources.** We measured students' memory for sources with a recognition task, that included six correct source names from the webpages (the name of two author occupations, two web providers, and two embedded sources) together with six distractors (the same number of different kind of sources not mentioned at the webpages). For each participant we calculated  $A'$  as a discrimination index.  $A'$  is a non-parametric statistic appropriate for calculating outcomes from *yes/no* tasks. Its formula takes into account hits rate, false-alarms rate and response bias (Stanislaw & Todorov, 1999). The  $A'$  index yields a minimum value of 0 and a maximum of 1, where .5 represents performance at chance level.

**Source-to-content links task.** For each scenario, students were given 4 statements that paraphrased ideas included at the two webpages (2 statements per webpage), together with 3 distracting statements. They were requested to link each statement to one out of three webpages (represented by their logo), or to the statement 'This is not said in any of the webpages'. We considered the total number of statements correctly linked to the corresponding webpage (max = 7). This task has been used as a measure of source evaluation in previous studies (Kammerer, Meier, & Stahl, 2016; Stang Lund et al., 2017; Strømsø et al., 2010).

## **Design and Procedure**

The training program included seven sessions, and took place after the pre-test. Each session lasted between 50 and 60 minutes, and took place at the regular students' classroom. Classes were composed of small groups of 5-6 students. Groups participated in one session per day, with 1-2 days between sessions.

All students participated in a pre and an immediate post-test. In both cases a fictitious character requested help to decide which webpage, out of 2, was the best to learn about a controversy. The information of the two webpages was read aloud by the researcher to the group. Then, each participant selected individually the webpage they considered to be the best, by using a coloured card, and explained verbally their decision. Finally, each participant responded to the source-to-content links and memory for sources tasks in an individual booklet. The immediate post-test was administered between 1-2 days after the end of the intervention program. To control for potential effects of topics, 50% of participants completed the controversy 'Possible health damage of mobile phone screens' at the pre-test, and 'Possible health damage of Wi-Fi' at post-test, whereas the other 50% received the scenarios in reversed order.

A sub-sample of the students ( $n = 12$ ) participated in a delayed post-test, that was used as an indicator of long-term effect of the intervention, as recommended by Brante and Strømsø (2018). This took place approximately three weeks after the end of the intervention program. This phase differed from the immediate post-test in two relevant ways: at the delayed post-test students were tested individually in a regular classroom, and they read the webpages on their own on a laptop computer. They could ask the researcher if they had any comprehension difficulty while reading. Besides, the researcher ensured that participants understood the main claims of the texts.

Participants completed the tasks with the teacher's guidance, who read aloud the tasks, clarified its requirements and helped participants to provide the responses, with



special attention to those with higher difficulties and those who explicitly expressed doubts or demanded help.

## **Results**

### **Baseline measures**

To gain a better understanding on how students with ID critically –or uncritically- read webpages about conflicting topics, we first assessed their performance at the pre-test. Results revealed that 54.5% of students selected the trustworthy webpage (see Table 3). Most students referred to the webpage content to justify their selection (69.7%), whereas they seldom used prior knowledge (21.2%) or source information (15.1%). Please note that each participant could refer to more than one criterion in their justifications, and therefore the sum of percentages exceeds 100%. Finally, students' performance at the source-recognition task yielded an  $A' Mdn = .77$  ( $IQR = .59-.90$ ), and they correctly linked  $Mdn = 3$  ideas to its corresponding webpage at the content-to-source link task ( $IQR = 2-4$ ). In sum, the results indicate that students from our study, even if they are frequent Internet users, don't consider source information to select the best webpage of a controversy. Nevertheless, they remember a relatively high number of source parameters, and they are able to link ideas to the corresponding source to some degree. All things considered, they could benefit from an intervention aimed to foster evaluation source. Next, we report the effects of such intervention.

### **Intervention measures: Measures of Internet sourcing**

#### *Immediate effects of the intervention*

We compared the extent to which students selected the trustworthy or less trustworthy webpage (number of students who selected each one), as a function of time (pre vs immediate post-test) by means of a Pearson chi-square test. As it can be seen in

Table 3, results showed a significant effect,  $\chi^2(1) = 6.35, p = .01$ . At the immediate post-test, more students selected the trustworthy webpage (75.8% of students) than at pre-test (45.5%).

Next, several Pearson chi-square tests were performed to compare the type of justifications used by students to support their selection of a particular webpage pre and post-test. Specifically, we compared the use of justifications based on students' prior knowledge, on text content, and on text source, as a function of time (pre vs immediate post-test) (for descriptive data see Table 3). Justifications based on students' prior knowledge didn't change after the instruction,  $\chi^2 < 1$ , as it remained infrequent in both times. Justifications based on text content differed after the intervention,  $\chi^2(1) = 3.97, p = .04$ . More students at the pre-test than at the immediate post-test used text content to justify their selection. Finally, justifications based on the webpage's source also changed after the intervention,  $\chi^2(1) = 20.18, p < .001$ . While almost no students referred to sources to justify their selection of webpages at pre-test, a majority of them cited source information at the immediate post-test. From those who cited sources, most of them referred to authors' occupation, and mostly ignored the web provider or the embedded sources. They mostly referred to the source's benevolence (as measured by references to the provider's or author's intention), and to some degree to their level of expertise.

Finally, we further explored the effect of our intervention on students' sourcing by comparing students' scores at the memory for sources and source-to-content links tasks, as a function of time (pre vs. post-test). Results from Wilcoxon signed-ranks test indicated that our intervention didn't improve memory for sources,  $Z = .38, p = .70$ , nor the source-to-content links scores,  $Z = -1.69, p = .09$  (see also Table 3).

[Insert Table 3 here]

### *Delayed effects of the intervention*

Delayed effects of the intervention were analysed by testing a sub-sample of the participants ( $n = 12$ ) in a 3-week delayed post-test (see Design and Procedure section) by means of several Pearson chi-square tests. Regarding the selection of webpages, even though more participants within this sub-sample selected the trustworthy webpage at the delayed post-test than at the pre-test, this difference was not significant ( $p = .22$ ). On the other hand, differences between delayed post-test and immediate post-test were not significant either ( $p = .35$ ).

Results regarding the justifications provided to support their selections resulted in significant differences between the pre and delayed post-test. The number of participants that supported their selection based on their prior knowledge was only marginally higher at the pre-test (three participants) than at the delayed post-test (none of the participants,  $p = .06$ ). In addition, justifications based on text content were given more often at the pre-test than at the delayed post-test ( $\chi^2(1) = 4.80, p = .03$ ). More important, while none of this sub-sample of participants referred to the source of the webpage at the pre-test, six participants did it at the delayed post-test,  $\chi^2(1) = 8.00, p < .01$ . At the delayed post-test, students referred to a similar degree to the authors' occupation and to the webpage provider. While they barely qualified the sources, those who did so mentioned the source's expertise, but not its benevolence (see Table 4). Neither justifications nor the criteria used differed between the immediate and delayed post-test (all  $ps > .08$ ).

Finally, as indicated by Wilcoxon signed-ranks tests, performance didn't vary between the pre and delayed post-test ( $Z = -1.60, p = .11$  for memory for sources and  $Z = -1.44, p = .15$  for source-to-content links tasks), or between the immediate and

delayed post-tests ( $Z = -.13, p = .89$  for memory for sources and  $Z = -.85, p = .40$  for source-to-content links tasks) (Table 4).

[Insert Table 4 here]

### **Discussion and conclusions**

Our study tested the effectiveness of an instructional program to improve young adults' with ID ability to evaluate controversial information from the Internet. Specifically, we tested its effectiveness in two scenarios in which students with ID saw two webpages that provided conflicting views on a controversial topic. Results indicate that immediately after the instruction, participants select more often the most trustworthy webpage and they justify their selection to a higher extent on source characteristics, as compared to their performance at the pre-test. Such immediate effects are in line with previous results of intervention studies conducted with students from vocational schools with low reading skills (Stadtler et al., 2016). Of note is that this pattern of results remained at a delayed post-test conducted three weeks after the instruction. As such, our study constitutes a unique contribution by demonstrating that the instructional program developed can have a long term impact on students' with ID literacy skills (Brante & Strømsø, 2018), and can be transferred to different study settings (i.e. from group researcher-led oral reading during the intervention, to individual student reading at the delayed post-test) (Schwartz & Bransford, 1998).

Partially supporting our hypotheses, the ability to remember source-to-content links (i.e. who said what), is marginally improved with the instructional program only immediately after the program, but not after a three weeks delay. Finally, memory for sources is not significantly improved by the instruction. Surprisingly, source memory of young adults' with ID proved to be rather high even at pre-test. Therefore, there may

have been a ceiling effect with such task. In any case, such lack of effect of instruction on source memory is in line with previous studies (Stadtler et al., 2016), and suggest that students tended to focus on how to use source information rather than on memorizing sources. In sum, the results suggest that the instructional program implemented in our study helps young adults with ID to improve their ability to use critically information sources to resolve controversies from the Internet.

Our results also indicate that the relationship between Internet frequency of use and students' evaluation skills is not straightforward (Salmerón, García, & Vidal-Abarca, 2018). Results reveal that young adults with ID following a special needs education program are frequent Internet users, especially for social, entertainment, and informational purposes, a pattern that concurs with recent results (Chiner, Gómez-Puerta, & Cardona-Moltó, 2017; Jenaro et al., 2018; Sallafranque-St-Louis, & Normand, 2017). However, frequent access to the Internet doesn't necessarily improve students' skills to critically read on the Internet, as is indicated by the fact that before the instruction few students consider source characteristics to justify their selection of webpages. Thus, schools must be aware of the risks of unsupervised access to Internet for students with ID. In that sense, specific training on how to evaluate information on the Internet, together with other reading intervention programs (Afacan et al., 2018), must be promoted in both special education programs and ordinary classrooms where students with ID could be enrolled.

### **Limitations**

Our study comes with limitations, some of which are common in intervention studies with students with ID. First, attrition in some of the intervention groups has been high, which has resulted in substantial changes in group configuration. For example, in one of the groups five students participated in most of the sessions, but only two of

them attended the immediate post-test session. This could have changed the group dynamics in unobserved ways.

Second, even though the intervention small groups have been organized to be comparable in regards nonverbal IQ, there is strong variability related to cognitive characteristics within groups. Regarding the nonverbal IQ, it is also worthy to note that the average standard score was 50.72 which corresponds to moderate intellectual disability. We could question if students with this cognitive profile can even face abstract decisions to evaluate information. But a key point of our program was to emphasize the use of basic source knowledge (profession and benevolence) to support students' evaluation and selection of webpages. Such knowledge is acquired early in Primary school, as revealed in recent research with Fourth grade students (Paul, Cerdán, Rouet & Stadtler, 2018).

Third, given than the immediate post-test is conducted as a group discussion, participants could influence each other when orally justifying their selection of the webpage they considered trustworthy. However, in order to minimize this bias, participants had to raise the voting cards at the same time and to justify their decision accordingly. This limitation is not present at the delayed post-test, where students read the webpages on their own and responded individually.

Finally, the lack of significance for some effects at the delayed post-test which were significant at the immediate post-test might have been due to the smaller sample size used at delayed post-test. Attrition was due to the fact that during the delayed post-test some of the participants were attending courses in other centers, and couldn't be reached by our research group. Future research should be planned in order to ensure that the same sample size in each assessment time in order to prevent a similar loss of statistical power. To be fair, including a delayed post-test should be considered as a

strong point of our design, and not as a limitation, as most previous research has simply used immediate post-tests (Brante & Strømsø, 2018; for an exception see Pérez et al., 2018).

### **Educational implications**

In our study we have focused on one particular challenge faced by young adults with ID while they access the Internet, specifically the risk of accepting unsupported or even untrue claims due to students' difficulties to evaluate information sources. Reading comprehension on the Internet involves at least two additional competencies: efficient navigation using hyperlinks and integration of information from different sources (Salmerón, Strømsø, Kammerer, Stadler, & van den Broek, 2018). Future research could explore ways to improve safe and efficient Internet access skills by mastering such competencies, in programs that could complement our intervention. Our study suggests that young adults with ID are capable of acquiring the media literacy skills to read on the Internet in an advanced way, provided that they get the appropriate training. Such programs would contribute to lessen the digital divide of young adults with ID, and could ultimately provide the necessary literacy skills to support their inclusion in ordinary classrooms (Wood, Browder, & Flynn, 2015).

Finally, as long as making choices is an essential component of self-determination (Shogren & Wehmeyer, 2016), the training of Internet-source evaluation skills should have a positive effect on young people's with ID determination. The skills they acquire during such instruction could support their decisions and choices in real life, as they allow them to access and confront Internet sources about complex and conflicting topics, such post-secondary education options or different political views.

### **References**

- Afacan, K., Wilkerson, K. L., & Ruppap, A. L. (2018). Multicomponent reading interventions for students with intellectual disability. *Remedial and Special Education, 39*, 229-242.
- Braasch, J. L., Bråten, I., Strømsø, H. I., Anmarkrud, Ø., & Ferguson, L. E. (2013). Promoting secondary school students' evaluation of source features of multiple documents. *Contemporary Educational Psychology, 38*, 180-195.
- Brante, E. W., & Strømsø, H. I. (2018). Sourcing in text comprehension: a Review of interventions targeting sourcing skills. *Educational Psychology Review. 30*, 773–799.
- Bråten, I., Stadtler, M., & Salmerón, L. (2018). The role of sourcing in discourse comprehension. In M. Schober, D. N. Rapp & M. A. Britt (Eds.), *Handbook of Discourse Processes* (pp. 141-166). New York, NY: Taylor & Francis.
- Brown A. L. & Palincsar A. S. (1989). Guided, cooperative learning and individual knowledge acquisition. In L. B. Resnick (Ed.), *Knowing, learning and instruction. Essays in Honor of Robert Glaser* (pp. 393–451). Hillsdale, NJ: Erlbaum.
- Browder, D. M., Gibbs, S., Ahlgrim-Delzell, L., Courtade, G. R., Mraz, M., & Flowers, C. (2009). Literacy for students with severe developmental disabilities: What should we teach and what should we hope to achieve? *Remedial and Special Education, 30*, 269-282.
- Browder, D. M., Hudson, M. E., & Wood, A. L. (2013). Teaching students with moderate intellectual disability who are emergent readers to comprehend passages of text. *Exceptionality, 21*, 191-206.



- Caton, S., & Chapman, M. (2016). The use of social media and people with intellectual disability: A systematic review and thematic analysis. *Journal of Intellectual and Developmental Disability, 41*, 125-139.
- Chadwick, D., Wesson, C., & Fullwood, C. (2013). Internet access by people with intellectual disabilities: Inequalities and opportunities. *Future Internet, 5*, 376-397.
- Chadwick, D. D., Quinn, S., & Fullwood, C. (2017). Perceptions of the risks and benefits of Internet access and use by people with intellectual disabilities. *British Journal of Learning Disabilities, 45*, 21-31.
- Chiner, E., Gómez-Puerta, M., & Cardona-Moltó, M. C. (2017). Internet use, risks and online behaviour: The view of internet users with intellectual disabilities and their caregivers. *British Journal of Learning Disabilities, 45*, 190-197.
- Copeland, S. R., & Keefe, E. B. (2016). Teaching reading and literacy skills to students with Intellectual Disability. In M. L. Wehmeyer & K. A. Shogren, K. A. (Eds.). *Handbook of research-based practices for educating students with intellectual disability* (pp. 320-342). New York: Taylor & Francis.
- Fajardo, I., Ávila, V., Tavares, G., Ferrer, A., Gómez, M., & Fernández, A. (2014). Easy-to-read texts for students with intellectual disability: Linguistic Factors affecting comprehension. *Journal of Applied Research in Intellectual Disabilities, 27*, 212-25.
- Fajardo, I., Tavares, G., Ávila, V., & Ferrer, A. (2013). Towards text simplification for poor readers with Intellectual disability: When do connective enhance text cohesion? *Research in Developmental Disabilities, 34*, 1267-1279.

- Greenspan, S., Loughlin, G., & Black, R. S. (2001). Credulity and gullibility in people with developmental disorders: A framework for future research. *International Review of Research in Mental Retardation*, 24, 101–135.
- Hetzroni, O. E., & Banin, I. (2017). The effect of educational software, video modelling and group discussion on social-skill acquisition among students with mild intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 30, 757-773.
- Jenaro, C., Flores, N., Cruz, M., Pérez, M. C., Vega, V., & Torres, V. A. (2018). Internet and cell phone usage patterns among young adults with intellectual disabilities. *Journal of Applied Research in Intellectual Disabilities*, 31, 259-272.
- Jeong, S. H., Cho, H., & Hwang, Y. (2012). Media literacy interventions: A meta-analytic review. *Journal of Communication*, 62, 454-472.
- Kaufman, A. & Kaufman, N. (1997). *K-BIT Test Breve de Inteligencia [K-BIT brief intelligence test]*. Madrid: TEA.
- Kammerer, Y., Meier, N., & Stahl, E. (2016). Fostering secondary-school students' intertext model formation when reading a set of websites: The effectiveness of source prompts. *Computers & Education*, 102, 52-64.
- Leffert, J. S., Siperstein, G. N., & Widaman, K. F. (2010). Social perception in children with intellectual disabilities: the interpretation of benign and hostile intentions. *Journal of Intellectual Disability Research*, 54, 168-180.

- Li-Tsang, C., Yeung, S., Chan, C., & Hui-Chan, C. (2005). Factors affecting people with intellectual disabilities in learning to use computer technology. *International Journal of Rehabilitation Research, 28*, 127-133.
- Lundberg, I., & Reichenberg, M. (2013). Developing reading comprehension among students with mild intellectual disabilities: An intervention study. *Scandinavian Journal of Educational Research, 57*, 89-100.
- Lussier-Desrochers, D., Normand, C. L., Romero-Torres, A., Lachapelle, Y., Godin-Tremblay, V., Dupont, M., Roux, J., Pépin-Beauchesne, L., & Bilodeau, P. (2017). Bridging the digital divide for people with intellectual disability. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace, 11*, article 1.
- Molin, M., Sorbring, E., & Löfgren-Mårtenson, L. (2017). New Em@ncipatory landscapes? Young people with intellectual disabilities, Internet use and identification processes. *Advances in Social Work, 18*, 645-662.
- Nomura, M., Nielsen, G. S., & Tronbacke, B. I. (2010). *Guidelines for easy-to-read materials*. The Hague: Internat. Federation of Library Assoc. and Inst.
- Nordheim, L. V., Gundersen, M. W., Espehaug, B., Guttersrud, Ø., & Flottorp, S. (2016). Effects of school-based educational interventions for enhancing adolescents' abilities in critical appraisal of health claims: a systematic review. *PloS one, 11*, e0161485.
- Paul, J., Macedo-Rouet, M., Rouet, J. F., & Stadtler, M. (2017). Why attend to source information when reading online? The perspective of ninth grade students from two different countries. *Computers & Education, 113*, 339-354.

- Paul, J., Cerdán, R., Rouet, J. F., & Stadtler, M. (2018). Exploring fourth graders' sourcing skills/Un análisis de la capacidad de escrutinio sobre las fuentes de información de los estudiantes de cuarto grado. *Infancia y Aprendizaje*, *41*, 536-580.
- Pérez, A., Potocki, A., Stadtler, M., Macedo-Rouet, M., Paul, J., Salmerón, L., Rouet, J-F. (2018). Fostering teenagers' assessment of information reliability: Effects of a classroom intervention focused on critical source dimensions. *Learning & Instruction*, *58*, 53-68.
- Rocha, T., Bessa, M., Gonçalves, M., Cabral, L., Godinho, F., Peres, E., Reis, M.C., Magalhães, L. & Chalmers, A. (2012). The recognition of web pages' hyperlinks by people with intellectual disabilities: An evaluation study. *Journal of Applied Research in Intellectual Disabilities*, *25*, 542-552.
- Rouet, J.-F., & Britt, M. A. (2011). Relevance processes in multiple document comprehension. In M. T. McCrudden, J. P. Magliano, & G. Schraw (Eds.), *Text relevance and learning from text* (pp. 19–52). Charlotte, NC: Information Age Publishing.
- Sallafranque-St-Louis, F., & Normand, C. L. (2017). From solitude to solicitation: How people with intellectual disability or autism spectrum disorder use the internet. *Cyberpsychology: Journal of Psychosocial Research on Cyberspace*, *11*, article 7.
- Salmerón, L., Fajardo, I., & Gómez, M. (in press). Selection and evaluation of Internet information by adults with intellectual disabilities. *European Journal of Special Needs Education*.

- Salmerón, L., García, A., & Vidal-Abarca, E. (2018). The development of adolescents' comprehension-based Internet reading skills. *Learning and Individual Differences, 61*, 31-39.
- Salmerón, L., Gómez, M., & Fajardo, I. (2016). How students with intellectual disabilities evaluate recommendations from Internet forums. *Reading and Writing, 29*, 1653–1675.
- Salmerón, L., Kammerer, Y., & Delgado, P. (2018). Non-academic multiple source use on the Internet. In J. L.G. Braasch, I. Bråten, & M. T. McCrudden (Eds.) *Handbook of Multiple Source Use* (pp. 285-302). New York: Routledge.
- Salmerón, L., & Llorens, A. (in press). Instruction of digital reading strategies based on eye-movements modeling examples. *Journal of Educational Computing Research*.
- Salmerón, L., Strømsø, H. I., Kammerer, Y., Stadtler, M., & van den Broek, P. (2018). Comprehension processes in digital reading. In M. Barzillai, J. Thomson, S. Schroeder, & P. van den Broek (Eds.) *Learning to read in a digital world* (pp. 91-120). Amsterdam: John Benjamins.
- Schalock, R. L., Borthwick-Duffy, S. A., Bradley, V. J., Buntinx, W. H., Coulter, D. L., Craig, E. M., ... & Shogren, K. A. (2010). *Intellectual disability: Definition, classification, and systems of supports*. Washington, DC: American Association on Intellectual and Developmental Disabilities.
- Schwartz, D. L., & Bransford, J. D. (1998). A time for telling. *Cognition & Instruction, 16*, 475–522.

- Shogren, K. A., & Wehmeyer, M. L. (2016). Self-Determination and Goal Attainment. In M. L. Wehmeyer & K. A. Shogren, K. A. (Eds.). *Handbook of research-based practices for educating students with intellectual disability* (pp. 255-273). New York: Taylor & Francis.
- Stadtler, M., Scharrer, L., Macedo-Rouet, M., Rouet, J. F., & Bromme, R. (2016). Improving vocational students' consideration of source information when deciding about science controversies. *Reading and Writing, 29*, 705-729.
- Stang Lund, E., Bråten, I., Brante, E.W., & Strømsø, H.I. (2017). Memory for textual conflicts predicts sourcing when adolescents read multiple expository texts. *Reading Psychology, 38*, 417-437.
- Stanislaw, H., & Todorov, N. (1999). Calculation of signal detection theory measures. *Behavior Research Methods, Instruments, & Computers, 31*, 137-149.
- Strømsø, H.I., & Bråten, I., & Britt, M.A. (2010). Reading multiple texts about climate change: The relationship between memory for sources and text comprehension. *Learning and Instruction, 18*, 513-527.
- van den Bos, K. P., Nakken, H., Nicolay, P. G., & Van Houten, E. J. (2007). Adults with mild intellectual disabilities: Can their reading comprehension ability be improved? *Journal of Intellectual Disability Research, 51*, 835-849.
- Wechsler, D. (2005). *Escala de Inteligencia de Wechsler para niños [Wechsler intelligence scale for children]*. Madrid: Pearson.
- Wineburg, S. S. (1991). Historical problem solving: A study of the cognitive processes used in the evaluation of documentary and pictorial evidence. *Journal of Educational Psychology, 83*, 73-87.

Wood, L., Browder, D. M., & Flynn, L. (2015). Teaching students with intellectual disability to use a self-questioning strategy to comprehend social studies text for an inclusive setting. *Research and Practice for Persons with Severe Disabilities*, 40 (4), 275-293.

Zisimopoulos, D., Sigafos, J., & Koutromanos, G. (2011). Using video prompting and constant time delay to teach an internet search basic skill to students with intellectual disabilities. *Education and Training in Autism and Developmental Disabilities*, 46, 238-250.

Table 1

*Descriptive results of the baseline assessment of the final sample (n = 33)*

Age in years ( <i>M, Sd, range</i> )	19.4 (40.63) [16-25]
Gender (number and % of females)	18 (55%)
IQ ( <i>M, Sd, range</i> )	50.72 (19.69) [40-84]
Sentence comprehension score ( <i>M, Sd, range</i> )	11.82 (3.23) [3-16]
Results of the Questionnaire on Internet Use (number of participants and %)	
They use a computer, tablet or smartphone regularly	33 (100%)
They have a computer, tablet or smartphone at home	33 (100%)
They have Internet connection at home	33 (100%)
They use the Internet regularly	31 (94%)
They use the Internet ( <i>n</i> = 31):	
Everyday	21 (64%)
5-6 days a week	3 (9%)
3-4 days a week	1 (3%)
2 days a week	5 (5%)
A few days a month	1 (3%)
In the Internet, they usually	
Read e-mails	15 (45%)
Send emails	8 (24%)
Read news	6 (18%)
Watch TV / Listen to radio	0
Read social media	13 (39%)
Post in social media	2 (6%)
Watch videos to have fun	8 (24%)
Watch videos to learn	28 (85%)
Listen to / download music	10 (30%)
Watch / download movies	25 (76%)
Gather information for my studies	11 (33%)
Gather information about my interests/worries	22 (67%)
Read Internet forums	15 (45%)
Post in Internet forums	0
Read blogs	0
Post in blogs	4 (12%)*
Chat	1 (3%)
Play videogames	26 (79%)



Table 2

*Overview of the webpages used in the pre, immediate and delayed tests.*

<b>Phase</b>	<b>Controversy</b>	<b>Credibility</b>	<b>Webpage</b>	<b>Author occupation</b>	<b>Web provider</b>	<b>Embedded source</b>	<b>Number of words</b>	<b>Readability (Flesch)</b>
Pre-test or immediate post-test	Possible health damage of mobile phone screens	Untrustworthy	Smartphones are not bad for your eyes	Sales manager	Samsung	Study by the Complutense University of Madrid	164	75.46
		Trustworthy	Your smartphone screen hampers your sight	Optometrist	El Mundo (Spanish newspaper)	Study by the Hospital of California	141	68.27
Pre-test or immediate post-test	Possible health damage of Wi-Fi	Untrustworthy	Wi-Fi networks do not harm health	Marketing director	Vodafone	World health organization	167	68.17
		Trustworthy	Are Wi-Fi networks harmful?	Medical doctor	El País (Spanish newspaper)	Report by the University of Washington	141	74.01
Delayed post-test	Effectiveness of toothpastes	Untrustworthy	The benefits of toothpastes.	Chemist	Colgate	Study by the University of Paris	103	76.24
		Trustworthy	Toothpastes are useless.	Dentist	Hospital Quirón Valencia	Study by consumers organization	112	80.40

Table 3

*Results of the intervention at the immediate post-test (n = 33)*

	Pre-test	Immediate post-test
<i>N</i>	33	33
Selection of trustworthy webpage	45.5%	75.8%*
Justifications based on <sup>1</sup> :		
Text content	69.7%	45.5%*
Prior knowledge	21.2%	24.2%
Source information	15.2%	57.6%**
When mentioning source, they referred <sup>2</sup> :		
Web provider	3	2
Author	1	11
Embedded source	1	0
They specified <sup>3</sup> :		
Provider or author's intention <sup>4</sup>	1	11
Provider or author's expertise <sup>4</sup>	2	5
Media quality <sup>4</sup>	1	1
Results from sourcing tasks:		
Memory for sources, Mdn(IQR)	.77(.59 - .80)	.76(.62 - .81)
Source-to-content link, Mdn(IQR)	3(2 - 4)	3(2 - 4)

Notes. \*  $p < .05$ ; \*\* $p < .001$ . <sup>1</sup>Note that each participant's justification could be based on more than one factor, so the sum of percentages exceeds 100% in each testing session. <sup>2</sup>Number of mentions to each source dimension. <sup>3</sup>Number of mentions to each specific source feature. <sup>4</sup>Note that participants could specify any of these features but not explicitly mention a web provider, an author, or an embedded source (e.g., "Because it tries to help you").

Table 4

*Results of the intervention for the subsample that participated at the delayed post-test (n = 12)*

	Pre-test	Immediate Post-test	Delayed post-test
<i>n</i>	12	12	12
Selection of trustworthy webpage	41.7%	83.3%	66.7%
Justifications based on <sup>1</sup> :			
Text content	100%	50%	80%
Prior knowledge	25%	8.3%	0%
Source information	0%	83.3%	50%
When mentioning source, they referred <sup>2</sup> :			
Web provider	0	1	4
Author	0	7	5
Embedded source	0	0	1
They specified <sup>3</sup> :			
Provider or author's intention <sup>4</sup>	0	5	1
Provider or author's expertise <sup>4</sup>	0	1	2
Media quality <sup>4</sup>	0	1	1
Results from sourcing tasks			
Memory for sources, Mdn(IQR)	.68(.52-.80)	.79(.71-.84)	.78(.71-.85)
Source-to-content link, Mdn(IQR)	3	3.5	3.5(2-3)

Notes. <sup>†</sup> $p = .05$ , <sup>\*</sup> $p < .05$ . <sup>1</sup>Note that each participant's justification could be based on more than one factor, so the sum of percentages exceeds 100% in each testing session. <sup>2</sup>Number of mentions to each source dimension. <sup>3</sup>Number of mentions to each specific source feature. <sup>4</sup>Note that participants could specify any of these features but not explicitly mention a web provider, an author, or an embedded source (e.g., "Because it tries to help you").

Figure 1. Screenshot of one webpage used in one of the scenarios, in Spanish. Note that source information is available on top of the page (“science magazine”), embedded in the text (“study by Born Free Association”) and at the bottom (“Biologist from the University of Barcelona”).

