



Utrecht University

Dynamics of Youth

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## Enhancing UU students' digital media literacy to assess the reliability of online news sources: Experiences with the Sourcer tool

RESEARCH REPORT

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Project leader:

- Dr. Eugène Loos [e.f.loos@uu.nl](mailto:e.f.loos@uu.nl)  
Utrecht University School of Governance

Members research team:

- Prof. dr. Marcel Boumans [m.j.boumans@uu.nl](mailto:m.j.boumans@uu.nl)

Utrecht University School of Economics

- Dr. Maryse Chappin [m.m.h.chappin@uu.nl](mailto:m.m.h.chappin@uu.nl)

Copernicus Institute of Sustainable Development, Innovation Studies, Innovation and Sustainability

- Prof. dr. Bruce Mutsvairo [b.mutsvairo@uu.nl](mailto:b.mutsvairo@uu.nl)

Institute for Cultural Inquiry, Media and Performance Studies

- Dr. Rianne van Lambalgen [r.m.vanlambalgen@uu.nl](mailto:r.m.vanlambalgen@uu.nl)

School of Liberal Arts and Liberal Arts and Sciences

- Dr. Marie-Louise Goudeau

Utrecht University Library

[m.s.goudeau@uu.nl](mailto:m.s.goudeau@uu.nl)

- Student assistant: Anke de Groot MSC

- Societal partner Wout Haakman MSC from Sourcer (<https://getsourcer.com>)

## 1. Introduction

This explorative study aims to understand how UU students (Bachelor and/or Master) experience the use of Sourcer (<https://getsourcer.com>). This organization offers a browser extension that informs the user of the online news sources they read, aiming to help users by enhancing their awareness of the reliability of digital information, to assess the reliability of information, and to read news articles critically. The tool can be downloaded at a PC, laptop or a smartphone (for more information, see Appendix 1). Sourcer's slogan is: "We don't make the decisions for you, we give you the tools to educate yourself." In this research project we aimed to assess online news sources for a paper or Bachelor-/ Master thesis, so we can get insights into how to enhance their critical thinking (Lai, 2011), to equip them with future ready digital media literacy skills. These insights are also important for their teachers.

### 1.1 Relevance

The recent introduction of ChatGPT shows that being able to find, assess and use of digital sources is of the utmost importance, see Rudolph et al. (2023) who even call ChatGPT "a bullshit spewer". Van Rooy pleads to stop feeding the hype and start resisting: "Academics should be a voice of reason; uphold values such as scientific integrity, critical reflection, and public responsibility. Especially in this moment in history, it is vital that we provide our students with the critical thinking skills that will allow them to recognize misleading claims made by tech companies and understand the limits and risks of hyped and harmful technology that is made mainstream at a dazzling speed and on a frightening scale." (<https://irisvanrooijcogsci.com/2023/01/14/stop-feeding-the-hype-and-start-resisting/>). Being able to think critically and to use future ready media literacy skills for the use of *different* digital sources is of crucial importance for students. For this reason students need guidance how to find, assess and use the sources they find on the Internet.

### 1.2 Research impact

Primary and secondary school children have difficulty assessing the reliability of digital information. For this reason, media literacy programs in primary and secondary schools teach them how to find, assess and use digital sources (<https://www.mediawijsheid.nl/>, Loos & Ivan, 2022). The question is how well developed *university* students' future ready media literacy skills are. Research shows that they have difficulties to assess the reliability of digital information (Wineburg & McGrew, 2016; Hargittai et al., 2016; Herrero-Diz et al. 2019; Wineburg et al., 2022). But extensive media literacy programs, such as they have been developed for primary and secondary school children, do not exist for university students. Therefore, getting insights into the practices that enhance university students' digital resilience (Bjola & Papadakis, 2020) is crucial for them too.

### 1.3 Societal impact

To assume social responsibility in our civil society, access to digital information is of prime importance. De Jong & Rizvi (2009), in *The State of Access: Success and Failure of Democracies to Create Equal Opportunities*, argue that democracies are judged by whether citizens have equal access to public services, economic opportunities, justice and participation in the democratic process. Anno 2023, we can add citizens' opportunities to have access to *reliable* digital information (<https://education.ec.europa.eu/focus-topics/digital-education/action-plan/action-7>) which can be seen as what Rawls (1993) calls a primary good. Bovens (2002) and Bovens & Loos (2003) even suggest that the equal right of access to information should be considered a basic right of all citizens, comparable to the classic (human) rights, see also Sturges & Gastinger (2010). It is important more than ever to teach university students how to enhance their future ready digital media literacy skills.

## 2. Method

### 2.1 Sampling

For the university students to use the tool, they did the following during Spring 2024:

- (1) download the extension from Sourcer's website (Appendix 1);
- (2) get access to the features using an anonymized access token specific to our empirical study;
- (3) receive an onboarding document with a guide and use cases of the tool. During the empirical study data were stored at the dedicated server Strato.nl, SSL certificated.

Students could opt-out and uninstall the extension at any moment during the empirical study. At the end of the empirical study their accounts were deactivated and deleted. The members of the research members and the project leader asked students from Utrecht University School of Governance, Utrecht University School of Economics, Copernicus Institute of Sustainable Development, Innovation Studies, Innovation and Sustainability, Institute for Cultural Inquiry, Media and Performance Studies, School of Liberal Arts and Liberal Arts and Sciences who attended their courses or Bachelor- / Masterthesis to participate in this empirical study that is composed of two parts (survey [section 3.1] and tracking digital search behavior [section 3.2]). 31 students showed interest and in the end 18 students have been involved (survey and tracking) during all 4 weeks during Spring 2024.

Please note that this is an explorative study that does not aim at statistic significant results; it aims to get insights into general patterns in terms of the usage of and experiences of university students' related to the Sourcer tool that could eventually help them to assess online news sources for a paper or Bachelor-/ Masterthesis, enhancing their critical thinking (Lai, 2011) to equip them with future ready digital media literacy skills. These insights are also important for their teachers.

### 2.2 Procedure empirical study

1. After the tool had been installed on the students' laptop (Spring 2024), this has been verified, and then their digital information search behavior has been tracked 4 weeks long during a course for which they need to find, assess and use digital sources for a paper or Bachelor-/Masterthesis. Information collected by Sourcer during the empirical study was done as follows: anonymous access token to uniquely identify participants, usage data of news articles opened by a user (ID, date, URL), usage of article data being requested by a student, such as the credibility score, based on CRAAP (Appendix 2), the summary, or related articles (id, date, URL, data). Participation was of course voluntary. Permission for the empirical study has been obtained from the "Facultair ethische toetsingscommissie REBO" from the projectleader's Faculty (Law, Economics and Governance) (Appendix 3) and we followed an informed consent procedure (Appendix 4).

2. Then, after 4 weeks, the students filled out a survey about their *general* digital information search behavior and their perception of the use of the *Sourcer tool* (Appendix 5) to go deeper into their experiences with this tool, focusing on digital media literacy aspects. The results of their digital information search behavior and their answers in this survey could not be related to individual students, it was completely anonymous. After the end of the empirical study Sourcer was de-installed, and all data on their digital information search behavior were deleted.

### 2.3 Data collection and -analysis

The project team members asked their students to participate and designed the survey, the student assistant collected the survey data while the project leader analyzed the survey data by coding them and presenting the results in concept indicator models (see LaRossa (2005) about more information of their use, see section 3.1 for their use in visualizing our project).

To know if the students really made use of the Sourcer tool to use and assess online news sources for a paper or Bachelor-/Masterthesis, the societal partner from Sourcer, Wout Haakman, analyzed their (non) use by having a closer look on the general patterns and frequency of the students' digital information search behavior during the 28 days they used the Sourcer tool (see results in section 3.2). So, the disadvantage of only using self report has been avoided.

### 3. Results

#### 3.1 Survey

##### 3.1.1 Students' characteristics

**Table 1** shows that the majority of the students were 16 Bachelor students and that 2 were some Master students, and that slightly more than the half were female students.

<b>Table 1</b>	
<i>Students' characteristics</i>	
	Number of students:
Bachelor students	16
Master students	2
Female	8
Male	10

##### 3.1.2 General digital information search behavior

Before we zoom in on the students' perception of the way they used the Sourcer tool, we here first present some information on what they state about their general digital information search behavior.

**Table 2** makes clear that google is the most popular search tool among the university students, that none of them uses Utrecht University on location but by digital access (e.g. Wordcat, Google Scholar, and/or digital collection Utrecht University Library). None of them uses scientific handbooks. A bit more than half of them uses news sites such as Nos.nl or sites from (inter)national newspapers.

<b>Table 2</b>	
<i>General digital search behavior</i>	
	Number of students using ... for a paper or a thesis (more than 1 response possible):
Google	18
Another digital search tool	8
University library (on location)	0
University library (digital access): e.g. Wordcat, Google Scholar, and/or digital collection University Library)	10
Scientific handbooks	0
News sites such as Nos.nl or sites from (inter)national newspapers	10

In **Table 3** we can see that about three quarters of the university students state that they check the reliability of digital information.

<b>Table 3</b>	
<i>Checking the reliability of digital information</i>	
	Number of students:
Yes	14
No	4

### 3.1.3 Using Sourcer for assessing online news sources reliability

According to most students it was not that difficult to install the Sourcer tool (**Table 4a**). The majority used the tool weekly (**Table 4b**). And most students found Sourcer a convenient tool (**Table 4c**).

<b>Table 4a</b> <i>Installing the Sourcer tool</i>	
	Installing the Soucer tool is ... Number of students:
Very easy	6
Easy	9
Neither easy nor difficult	1
Difficult	2
Very difficult	0

<b>Table 4b</b> <i>Using the Sourcer tool for students' research</i>	
	I used the Soucer tool for my research... Number of students:
Several days week	0
Daily	1
Weekly	12
Never	5

<b>Table 4c</b> <i>Using Sourcer: a convenient tool?</i>	
	The Soucer tool was convenient while using it. Number of students:
Absolutely not	0
Not	0
Neither No nor Yes	8
Yes	10
Absolutely yes	0

The five categories in **Table 4d** are linked to CRAAP (Currency, Relevance, Authority, Accuracy, and Purpose, see also Appendix 2). It clearly shows us that most students who use the Sourcer tool use it for these reasons.

<b>Table 4d</b> <i>Reasons to use the Sourcer tool</i>						
	Using the Sourcer tool has helped me to determine ... Number of students					
		Absolutely not	Not	Neither no nor Yes	Yes	Absolutely Yes
How up-to-date the online news source is.		1	2	7	7	1



How useful the online news source is for the topic I am working on.		1	1	10	5	1
How reliable the sender of the online news source is.		1	4	4	6	3
How accurate the online news source is.		1	3	8	3	3
How relevant the online news source is for the goal I wanted to use it.		1	2	12	3	0

**Table 4e** shows us that all students who used the Sourcer tool state that they are awareness of the total credibility score for online news sources.

<b>Table 4e</b> <i>Using Sourcer: students' awareness of the total credibility score for online news sources</i>	
	I am aware that the Sourcer tool presents a total credibility score for online news sources. Number of students:
Yes	18
Not	0

Almost half of the students stated that the Soucer tool was useful while working on a paper or thesis, about one quarter did not found the tool useful for this purpose, while about another quarter found it useful (**Table 4f**). And about three quarters of the students would recommend the Soucer tool to other students (**Table 4g**).

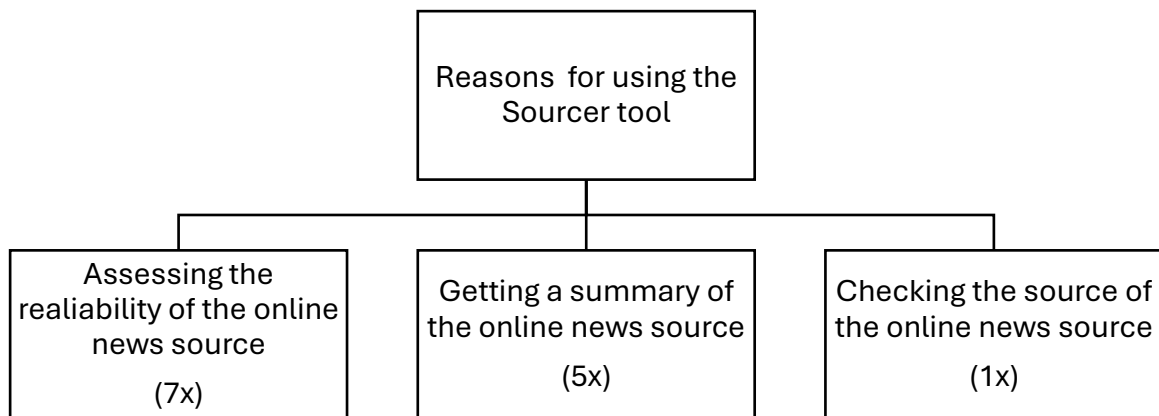
<b>Table 4f</b> <i>Using Soucer: useful while working on a paper or a thesis?</i>	
	The Soucer tool was useful while working on a paper or thesis. Number of students:
Absolutely not	0
Not	5
Neither not nor yes	8
Yes	5
Absolutely yes	0

<b>Table 4g</b> <i>Using Soucer: recommendation to other students?</i>	
	I would recommend the use of the Soucer tool to other students. Number of students:
Absolutely not	0
No	1
Neither No nor Yes	3

Yes	13
Absolutely yes	1

To deepen our understanding of the students' perceptions of the way they used the Sourcer tool, we asked them to clarify their scores above (see the open questions in Appendix 5). We used their clarification to compose the concept indicator models below allowing us to visualize these perceptions.

**Concept indicator model 1**



Some quotes (translated from Dutch to English by DeepL):

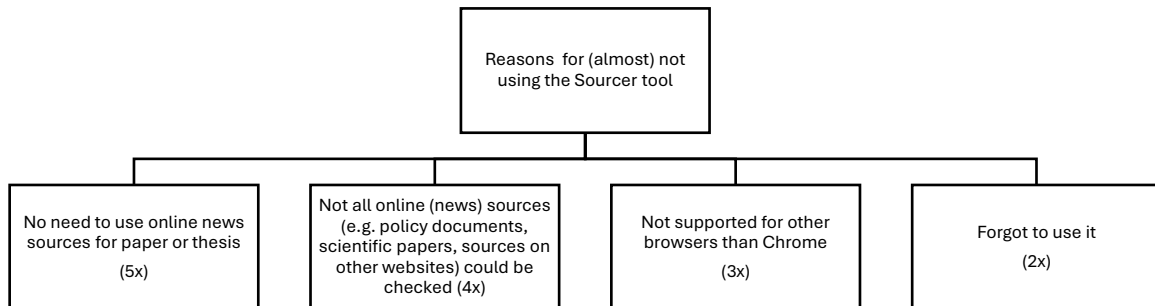
I used the Sourcer tool to:

“Ensure reliable sources of data in the process of writing my thesis”

“check to what extent my perception of reliability matches that of the tool, and summarize”

“check the reliability of a source”.

## Concept indicator model 2



Some quotes (translated from Dutch to English by DeepL):

“The Sourcer tool does not work everywhere yet, so if you search for policy documents on another website, among other things, they cannot be reviewed”

“I didn't get around to it naturally and often I also forgot I had Sourcer on my laptop”

“I used it a few times (...) Mostly not used because I don't usually use news sources in scientific research”

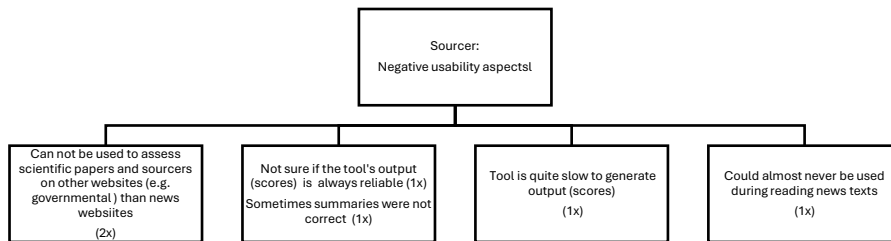
“It didn't work for scientific sources and for news articles I often forgot about it, or it took quite a long time to load”

“Used it a few times, but found it irritating that not everything was supported, so then I also had to go look very specifically within can sites for info on my topic of organic farming, but generally got relatively little from the news itself”

“It is not applicable to Edge”

“It never came up”

### Concept indicator model 3



Some quotes (translated from Dutch to English by DeepI):

“Broader support for non-academic web pages as is often the case with companies or governments”

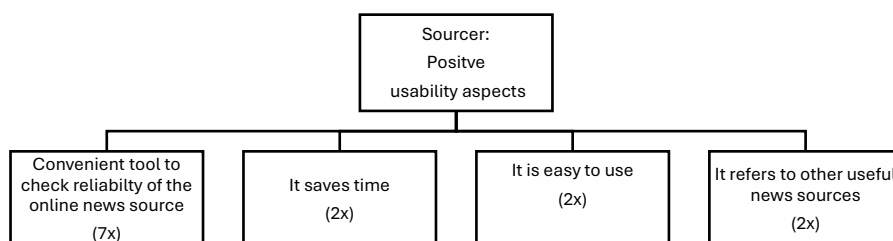
“Overall, I think it's a good tool, but I feel like you do still have to look critically at how it comes up with his score to know how reliable it really is.”

“Sometimes the summaries were not correct”

“I think I would be more likely to use it if it was expanded to scientific articles and if it was a bit faster”

“It could almost never be used when reading documents”

### Concept indicator model 4



Some quotes (translated from Dutch to English by DeepI):

“Although I couldn't use it as often as I would have liked, the tool still gave a nice overview of whether the source was reliable and why”

“It saves a lot of time”

“Easy to use, clear and fast”

“For the articles that Sourcer offered and where I could use it, it was top notch!”

“Firstly, I have used this tool less because I don't need to access much news for my thesis. But in the process of using it, I found that it could not confirm the source of some news and would fail to load them. Other than that, I think it is well because it helps me to generate the format of the citation and saves time, also helps me to confirm the source of the news and to see more related news.”

### 3.2 Tracking

Section 3.1 gave us insight into the perception of the students' use of the Sourcer tool. These perceptions are based on the survey we conducted. As these are self reported data we do not know if they really made use of this tool to assess online news sources for a paper or their Bachelor-/ Masterthesis. Therefore, the societal partner from Sourcer, Wout Haakman, analyzed their moments of (non) use by having a closer look on the general patterns and frequency of the students' digital information search behavior during the 28 days they used the Sourcer tool.

Spring 2024, all students have been tracked for a total duration of 28 days since they verified the usage of the extension using their email addresses. After these 28 days, their verification expired, and tracking was stopped. Students started using the extension on different days and weeks. Therefore, we normalized the data on the days since their verification started and the days of the week they had used the extension. Proceeding in this way, allowed us to both account for the frequency of their usage and trends in the days of the week usage was highest.

**Figure 1** shows the average interactions per user since the first verification of their email address on the extension. This chart is used to visualize how the recency of installing the extension plays into the students' usage. In **Figure 1** we can see a certain degree of interaction from the students each day. Some students may have used the tool more on certain days than others, explaining the spike around day 13. This could be due to an assignment they may have worked on that day. Furthermore, the usage was highest on the first day of usage. At the end of the tracking period, usage increased slightly, too.

Figure 1. Interactions days since verification

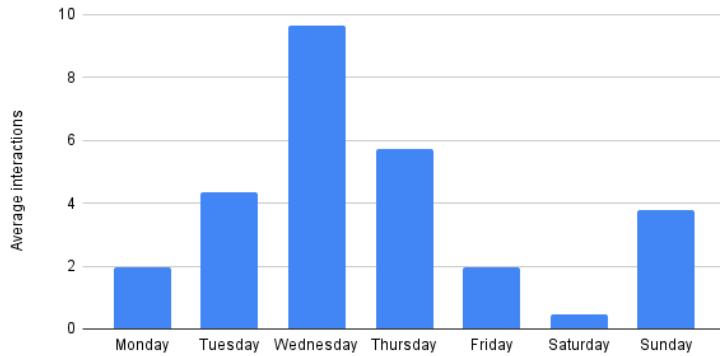
Average interactions per student



The students' average use of Sourcer in **Figure 2** shows that the tool was used every day of the week, most often on Wednesday and only rarely on Saturday.

Figure 2. Interactions per day of week

Average interactions per student

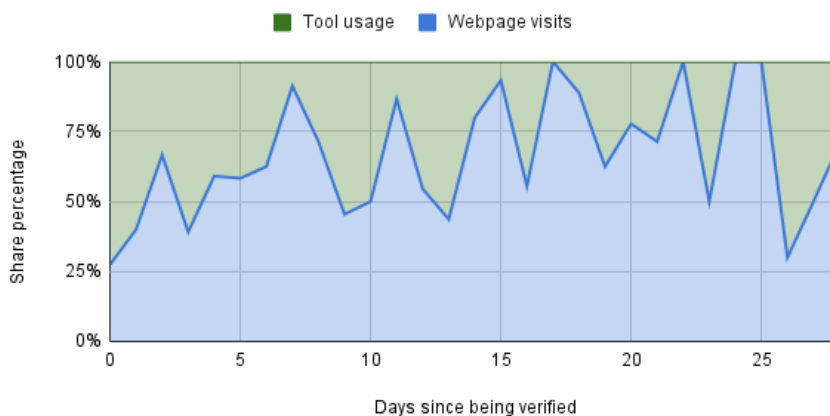


Finally, **Figure 3** shows how many web pages of news articles students may have visited that the extension recognized as news articles versus the number of times a student interacted with the extension during a webpage visit. This breakdown helps to show how often the extension may have appeared on a page to the students and how frequently the students decided to interact with the extension. A 50/50% ratio means that for every visit to a news article, the extension was interacted with. A ratio with more tool usage than webpage visits means the student interacted with more features than one on that webpage.

Some days, no tool usage was recorded for all webpage visits. **Figure 3** can be overlaid with **Figure 1** to get an idea of the breakdown compared to the average amount of interactions. The days that the ratio of webpage visits was highest were those with the lowest number of interactions. The ratio of visits versus usage stayed consistent during the tracking period, with a slight decline in tool usage compared to visits.

Figure 3. Usage tool since verification

Percentage interactions webpage visits / tool usage



## 4. Conclusion, limitations and implications for higher education and future research

### 4.1 Conclusion

The majority of the students who made use of the Sourcer tool for a paper or their thesis were quite satisfied with this tool. Easy to use, a good tool to check the reliability of online news sources, saving time, and finding other related online news sources were arguments made by the students. There were also critical points of Sourcer's use, such as its slowness to generate the scores, the impossibility to use this tool to assess scientific papers and news sources on other websites (e.g. governmental ) than news websites, uncertainty if the tool's output (scores) is always reliable, and the fact that not all digital (news) sources (e.g. policy documents, scientific papers, certain other websites) could be checked.

These perceptions were based on self reported. In order to not know if the students really made use of the Sourcer tool to assess online news sources for a paper or their Bachelor-/ Masterthesis, we tracked their digital information search behavior. This allowed us to analyze their moments of (non) use by having a closer look on the general patterns and frequency of the students' digital information search behavior during the 28 days they used the Sourcer tool. Figure 1, 2 and 3 in section 3 clearly showed that the university students have indeed made use of the Sourcer tool during several moments.

### 4.2 Limitations and implications for future research

There are several limitations that one needs to keep in mind while interpreting the results. First, the sampling strategy used resulted in a sample that is neither representative nor random. The final sample is a mix of Bachelor and Master students from several faculties at Utrecht University that follow different courses. Given that this is an explorative study, this is not necessarily problematic. The sample still enables us to identify general patterns in terms of the usage of and experiences with the tool. Future research, however, could aim for a larger and representative sample of Dutch university students. And it would also be interesting to conduct such an empirical; study in universities in other countries to get insight in cultural similarities and differences.

Second, we only present the average usage of the tool. For future research, it could be interesting to also analyze individual usage in terms of time, frequency, intensity, and dynamics in order to identify typical usage patterns. Such a usage typology might be useful in further analyses.

Third, in our research individual digital information search behavior cannot be linked to survey data. This limits the analyses as the link would allow to test for differences in this behavior between faculties, study year, gender, type of course etc. Given the small sample size that would have been challenging anyway. But for future research it would be relevant to link these data as assignments in different courses and programs have different requirements and links with the news and this impacts the usage of such a tool.

Another interesting and linked avenue for future research would be a configurational approach, for instance qualitative comparative analysis (QCA), to identify combinations of conditions that result in specific digital information search behavior. The idea of such a QCA (Fiss et al., 2013) is that there will be different combinations of conditions (for instance linked to the individual as well as to the task) that are sufficient for usage. Studying the interplay between these conditions will be useful as the usage of such a tool in reality is depending on a variety of causes.



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## Appendix 1: Sourcer

The screenshot shows the Sourcer website's features page. The browser address bar displays 'getsourcer.com/features'. The navigation bar includes the Sourcer logo, a 'Add Sourcer to Chrome' button, and links for 'Features', 'Pricing', 'Academia', a flag icon, and a user profile icon. The main heading reads 'Your one-stop shop solution for news', followed by the subtext 'Determine credibility, get out of your bubble, become more productive when reading news, and much more.' Below this is a link 'Learn how Sourcer works →'. Four feature cards are displayed, each with an icon and a 'Free' label: 1) A code editor icon representing code analysis. 2) A Twitter bird icon with a location pin representing social media monitoring. 3) A document icon with a magnifying glass representing document search. 4) A 'NEWS' document icon with arrows pointing to mobile devices representing news aggregation.

getsourcer.com/features

Gmail YouTube Maps

Sourcer Add Sourcer to Chrome Features Pricing Academia

# Your one-stop shop solution for news

Determine credibility, get out of your bubble, become more productive when reading news, and much more.

[Learn how Sourcer works →](#)

- Free
- Free
- Free
- Free

<https://getsourcer.com/how-to>

## How to use the Sourcer browser extension?

By Sourcer

14 February 2023

**(Sourcer)** - Have you just downloaded Sourcer? Or are you curious what it is capable of? In this example interactive article, we will show you how to use the Sourcer browser extension.

Since the Sourcer logo is in the page's bottom right corner, our algorithms have already analysed the article. If you cannot find the logo, refresh the page, or check whether the article is compatible by clicking on our logo in the toolbar. Sourcer can be used with almost all English and Dutch news websites. For the best experience, you can find a selection of websites on our [Compatible Websites](#) page, where quality results of our browser extension are ensured.

To know more about the article, and its authors, to find a summary, and related articles, you can click on the Sourcer logo in the bottom right corner. Come on, check it out. You can test it out right here!

In the same interface, you can also find some [Premium features](#), such as the [credibility score](#), the full new coverage, related research papers, or productivity features, like the citation generator or notes & markers. You can start using these by getting a [Premium Subscription](#)!

When you learned everything you wanted about the article itself, you can start exploring the topic further. We highlighted the most important statements in the article for you, they should look just like this sentence. If you have a Premium Subscription, you can click this one too to find related sources. It's cool, isn't it?

If you are still unsure where to move your mouse or what exactly you should see, then you can either check out the video below or feel free to shoot us an email at [info@getsourcer.com](mailto:info@getsourcer.com) and ask any questions you may have.

## Appendix 2: CRAAP

<https://researchguides.ben.edu/source-evaluation>

**CRAAP** is an acronym for **C**urrency, **R**elevance, **A**uthority, **A**ccuracy, and **P**urpose.

**Currency:** the timeliness of the information

- When was the information published or posted?
- Has the information been revised or updated?
- Is the information current or out-of date for your topic?
- Are the links functional?

**Relevance:** the importance of the information for your needs

- Does the information relate to your topic or answer your question?
- Who is the intended audience?
- Is the information at an appropriate level (i.e. not too elementary or advanced for your needs)?
- Have you looked at a variety of sources before determining this is one you will use?
- Would you be comfortable using this source for a research paper?

**Authority:** the source of the information

- Who is the author/publisher/source/sponsor?
- Are the author's credentials or organizational affiliations given?
- What are the author's credentials or organizational affiliations given?
- What are the author's qualifications to write on the topic?
- Is there contact information, such as a publisher or e-mail address?
- Does the URL reveal anything about the author or source?
  - examples:
    - .com (commercial), .edu (educational), .gov (U.S. government)
    - .org (nonprofit organization), or
    - .net (network)

**Accuracy:** the reliability, truthfulness, and correctness of the content

- Where does the information come from?
- Is the information supported by evidence?
- Has the information been reviewed or refereed?
- Can you verify any of the information in another source or from personal knowledge?
- Does the language or tone seem biased and free of emotion?
- Are there spelling, grammar, or other typographical errors?

**Purpose:** the reason the information exists

- What is the purpose of the information? to inform? teach? sell? entertain? persuade?
- Do the authors/sponsors make their intentions or purpose clear?
- Is the information fact? opinion? propaganda?
- Does the point of view appear objective and impartial?
- Are there political, ideological, cultural, religious, institutional, or personal biases?

### **Appendix 3: Facultair ethische toetsingscommissie REBO**

Faculteit Recht, Economie, Bestuur en Organisatie

Ethische Commissie

Telefoon: 030 - 253 9956

E-mail: FETC.REBO@uu.nl

Bezoekadres: Janskerkhof 3, 3512 BK Utrecht

Postadres: Janskerkhof 3, 3512 BK Utrecht

Dr. E. Loos

Dep. Bestuurs- en

Organisatiewetenschap

Bijlhouwerstraat 6-8

3511 ZC Utrecht

Datum: 20 Oktober 2023

Geachte Dr. Loos, Beste Eugène,

De Facultaire Ethische Toetsingscommissie (FETC) heeft kennisgenomen van uw onderzoeksvorstel getiteld "Enhancing UU students' media literacy to evaluate the reliability of digital information".

De FETC heeft het voorstel gelezen. In een eerder stadium heeft de commissie vragen gesteld over het zoekgedrag van de studenten dat wordt onderzocht en naar aanleiding daarvan heeft u het informed consent formulier aangescherpt. De bezwaren die de Ethische commissie had zijn nu weggenomen en we keuren het voorstel goed.

We wensen u veel succes toe bij het uitvoeren van dit onderzoek.

Met vriendelijke groet namens de Ethische Commissie,

Mariska van Dort

Secretaris FETC

## Appendix 4: Informed consent



### Improving media knowledge for assessing the reliability of online news sources by UU students

#### Usage of the tool Sourcer

Dear student,

It is important to use reliable sources in the courses you take or for your thesis. Additionally, it can be useful to utilize online news sources.

This educational research project from Utrecht University collaborates with Sourcer (<https://getsourcer.com>), an organization that provides a tool to help you assess the reliability of online news sources, thus enhancing your media literacy. We are interested in hearing about students' experiences with this tool.

Therefore, we ask if you would be willing to test this tool for us. Participation is entirely voluntary, and you can withdraw at any time if you change your mind.

If you choose to participate, your email address will be passed on to Sourcer to facilitate installation of the tool on your laptop. We will then contact you regarding how to install this tool on your laptop, which you use when searching for online news sources for a course or your thesis. This tool is a tracker that only monitors your use of those online news sources and how you interact with them. Thus, only the results of your searches for online news sources will be tracked (anonymized and not traceable to you), while your other internet searches will not be tracked. Additionally, the answers to the questions we will ask you at the end of the project cannot be traced back to you.

How does this work exactly?

(1) After the tool is installed on your laptop, your online news source search behavior will be tracked specifically for 4 weeks. An anonymous access token will be used to track usage data of news articles you open (id, date, URL), as well as the credibility score CRAAP (acronym for **C**urrency, **R**elevance, **A**uthority, **A**ccuracy, and **P**urpose, see Appendix 3), summary, and data on related articles (id, date, URL).

(2) Subsequently, after 4 weeks, you will answer a set of questions to provide insights into your experiences with this tool. As a token of appreciation for your participation, you will receive a 25 Euro gift card.

(3) After the conclusion of this educational research project, Sourcer will be uninstalled, and all digital information search behavior data will be deleted.

What happens with the results?

The research results will be fully anonymized during analysis and may be used by Sourcer to optimize the tool. They may also be analyzed and used in scientific publications or be made public in another manner, all in fully anonymized form.

If you choose to participate, please sign the following statement:

I consent to participate in this research conducted by Utrecht University regarding the evaluation of the reliability of digital information using the Sourcer tool. I retain the right to withdraw this consent without providing a reason. I agree that the research results, which will be fully anonymized during analysis, may be used by Sourcer to optimize the tool. I also consent to the analysis and use of the research results in scientific publications or other forms of public dissemination (which will also be fully anonymized). If I require more information about the research, now or in the future, I may contact the project leader, Dr. Eugène Loos (e.f.loos@uu.nl), affiliated with the Department of Governance and Organizational Sciences at Utrecht University.

Participating student:

Name:

Location : Utrecht

Date:

Signature:

Bachelor

Master (choose one)

Studies:

**E-mail student:**



## Appendix 5: Survey

### SURVEY

#### Enhancing UU students' media literacy to assess the reliability of online news sources

I am:

a Bachelor student

a Master student

I am studying:

Humanities

Social and Behavioural Sciences

Geosciences

Economics

Utrecht University School of Governance

Liberal Arts and Sciences

Female

Male

Other

I'd rather not say

Age: ...

Before we ask you about your experiences with the Sourcer tool, here are three general questions about digital information search behavior.

General questions on digital information search behavior

1. When I search for digital information for a paper or thesis, for example, I use (multiple answers possible):

- Google scholar
- Another scientific search engine
- Scientific handbooks
- The university library on location
- The university library digital (for example: Wordcat, google scholar and/or the UB digital collection)
- News sites such as nos.nl or sites of (inter)national newspapers
- Nexis Uni (database with the full text of articles from daily and news magazines at home and abroad)
- ChatGPT
- Other chatbot(s), namely:
  - My fellow students
  - My teachers
  - Researchers
  - Other experts, namely:
  - Other persons or sources not mentioned above, namely:

2a. Do you check if digital information is reliable?

- Yes
- No

2b. If yes, how do you do this? And if no, why not?

.....

3. To what extent do you find a chatbot a reliable source of information?

0% .....100% trustworthy (Sliding)

Questions about your use of Sourcer for online news sources

1. Installing Sourcer is:

(5) Very easy; Easy; Neutral; Difficult; Very difficult (0)

2. I have used Sourcer for my research:

Never (0)

Monthly

Weekly

Once a day

Several times a day (5)

3. If never used, why not: ...

The questions about Sourcer need not be completed if Sourcer has never been used.

If used.

4. I found Sourcer a useful tool to use:

(1) Absolutely not

Not

Neutral

Well

absolutely yes (5)

Why: ...

5. Using Sourcer has helped me determine if the online news source:

5a. is up-to-date

(1) Absolutely not..... absolutely yes (5) (5-point scale)

5b. is useful for the topic I wanted to learn more about

Absolutely not..... absolutely yes (5-point scale)

5c. comes from a reliable sender

Absolutely not..... absolutely yes (5-point scale)

5d. is accurate (think: language, correctness, grammatical correctness, etc.)

Absolutely not..... absolutely yes (5-point scale)

5e. is relevant to the purpose for which I intended to use it

Absolutely not..... absolutely yes (5-point scale)

6a. I was aware that Sourcer gives an overall score (the credibility score) for the reliability of the online news source.

No (0)

Yes (1)

6b. If yes. To what extent was this useful for the subject you were working on (e.g., paper or thesis)?

Absolutely not..... absolutely yes (5-point scale)

7. I used Sourcer primarily to: ...

8. I have missed the following when using Sourcer:

I have not missed anything

I missed the following:.....

9. I would recommend other students to use Sourcer:

(0) Absolutely not..... absolutely yes (5-point scale)

10. Other comments:

....