

# Digital Literacy:

## Understanding how users verify online information

### Observation report

HCI 445 – User Research Methods

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A report by:

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# Table of Contents

<b>EXECUTIVE SUMMARY .....</b>	<b>3</b>
<b>INTRODUCTION .....</b>	<b>4</b>
<b>METHODS .....</b>	<b>5</b>
DATA COLLECTION - OBSERVATIONS.....	5
DATA ANALYSIS - OBSERVATIONS .....	5
PARTICIPANTS – INTERVIEWS.....	6
DATA COLLECTION – INTERVIEWS.....	6
DATA ANALYSIS – INTERVIEWS .....	6
<b>FINDINGS.....</b>	<b>7</b>
UNDERSTANDING MISINFORMATION .....	7
EMOTIONS.....	8
TOOLS AND STRATEGIES .....	8
MITIGATING MISINFORMATION .....	9
PERSONA SPECTRUMS.....	10
SCENARIOS .....	14
JOURNEY MAPS.....	16
PRIORITY MATRIX .....	18
<b>DISCUSSION .....</b>	<b>19</b>
UNDERSTANDING MISINFORMATION .....	19
EMOTIONS.....	19
TOOLS AND STRATEGIES .....	19
MITIGATING MISINFORMATION .....	20
LIMITATIONS AND FUTURE WORK .....	20
<b>CONCLUSION .....</b>	<b>20</b>
<b>BIBLIOGRAPHY .....</b>	<b>21</b>
<b>APPENDIX .....</b>	<b>22</b>
OBSERVATION INFORMED CONSENT.....	22
OBSERVATION PROTOCOL .....	26
AFFINITY DIAGRAM OBSERVATION THEMES.....	29
SEQUENCE DIAGRAM.....	31
INTERVIEW INFORMED CONSENT .....	32
INTERVIEW PROTOCOL .....	36
INTERVIEW CODEBOOK .....	39
AFFINITY DIAGRAM INTERVIEW THEMES.....	43

## Executive Summary

Knowing what information is accurate is difficult. We wanted to explore peoples' information seeking process, so we can design a better tool to help them verify the reliability of digital information. We observed eight peoples' behavior when fact-checking an online news article and interviewed eight different people about their general fact-checking approaches and feelings about misinformation.

We identified four key themes to explore from our observations and interviews:

- **Understanding Misinformation:** Users verify information based on personal relevance and source credibility. While some trust scientific studies and papers, others rely on social media.
- **Emotions:** Fact-checking is seen as frustrating and time-consuming, though some view it as empowering. Some people feel responsible for verifying critical information, while others prefer to ignore misinformation that doesn't seem to concern them.
- **Tools and Strategies:** Verification methods differ for individuals, ranging from structured fact-checking using peer-reviewed sources, to quick searches through Google or AI chatbots. Trust in sources influences approach.
- **Mitigating Misinformation:** Participants favored AI-driven solutions, credibility scores, and content moderation to mitigate the problem of misinformation. Some felt information verification is a personal responsibility.

People have a hard time verifying online information because of time constraints, conflicting sources, and trust inconsistencies. A well-designed, technology-based solution with clear trust signals, step-by-step verification options, and the ability to choose preferred sources should help.

This study is limited by the sample size and the diversity of participants. The observations and interviews were partially based on self-reported practices, which may not always reflect actual behavior in real-world scenarios.

Future studies should expand the participant pool to include a more diverse range of users and investigate how verification habits evolve over time. Further research could also study the effectiveness of different fact-checking tools in helping users access online information more accurately.

# Introduction

Since the digital revolution, spreading misinformation and disinformation has become easy. This influences people in everyday decisions regarding health, finances, politics, environment, and beyond (Suarez-Lledo & Alvarez-Galvez, 2021). False or misleading information polarizes communities, sways elections, and affects the environment adversely (Khan et al., 2024). It leads people to make harmful health choices in irreversible ways (Suarez-Lledo & Alvarez-Galvez, 2021).

Many individuals struggle to verify the credibility of online information (Hussein et al., 2020). They find it hard to distinguish between accurate and misleading information because of overwhelming digital content and the tactics used to spread falsehood (McClure Haughey et al., 2020; Wang et al., 2023). This lack of accessible support in navigating and critically engaging with digital content contributes to the persistence and spread of misinformation (Hussein et al., 2020; Wang et al., 2023).

Existing websites for fact-checking have significant limitations. Two examples are:

**FactCheck** (<https://www.factcheck.org>):

FactCheck focuses on debunking political misinformation based on public claims, helping users verify political statements. However, its solution is limited to political misinformation and does not extend to other important areas such as health, environment, and finance. Additionally, it typically addresses misinformation after it has already spread, rather than helping users verify claims in real time.

**PubMed** (<https://pubmed.ncbi.nlm.nih.gov>):

PubMed provides access to peer-reviewed medical and scientific articles, offering evidence-based research for verifying health-related information. PubMed is a valuable resource for scientific validation, but its content can be overwhelming and complex for the public to interpret. It lacks tools to guide users through the verification process of external information, limiting its accessibility as a fact-checking resource.

This project explores how a technology-based solution can assist individuals in verifying and evaluating the credibility of online information. We investigated the process that users adopt and the challenges they encounter when distinguishing reliable content from misinformation. Our research was done in two stages.

In our first stage, we began with scenario-based observations. We used these observations to create an affinity diagram, which helped us to uncover key themes. We then created a sequence diagram, to map user interactions and fact-checking processes.

In our second stage, we interviewed participants about their fact-checking habits. We used the insights gained from those interviews to create a persona spectrum, personas, scenarios, persona journeys, and a priority matrix.

The following sections detail our methods, findings, and the implications for designing a more effective solution.

## Methods

### PARTICIPANTS - OBSERVATIONS

Participants	Age	Gender	Occupation
1	23	Male	Graduate Student
2	22	Female	Graduate Student
3	30	Male	Health Care
4	42	Male	Health Care
5	37	Female	Consultant
6	65	Female	Retired
7	22	Male	Graduate student
8	34	Male	IT

### DATA COLLECTION - OBSERVATIONS

We conducted observations with a total of 8 participants with ages from 22 to 46 via Zoom and in-person. After receiving their consent, we recorded the meeting and asked warm-up questions. We then provided them with a scenario where they had to help a friend in verifying the accuracy of an article they just shared. When participants completed the scenario, we asked them follow-up questions. The interview recordings were between 30-45 minutes, which produced on average a half page of notes summarizing results per participant.

### DATA ANALYSIS - OBSERVATIONS

We created an affinity map to analyze our observations. We wrote key insights from each of our participant's AEIOU observations on sticky notes. We then grouped these sticky notes together in relevant categories to identify commonalities among participants' fact-checking approaches. This helped us understand participants' behavior and offered a deeper understanding

of how they verify information. We gained valuable insights into strategies and challenges participants face when they fact-check.

From our observations we created four main themes, which can be viewed in more detail in the Appendix:

1. **Strategies and Tools:** Tools and strategies that participants use to fact-check.
2. **Actions and Approaches:** The processes participants follow when verifying information.
3. **Challenges:** The difficulties participants face during fact-checking.
4. **Perception of Trust:** How participants determine the credibility and reliability of sources.

## PARTIPICANTS – INTERVIEWS

Participants	Age	Gender	Occupation
1	34	Male	Data Scientist
2	24	Male	Graduate Student
3	22	Female	Undergrad Student
4	53	Male	Graduate Student
5	22	Female	Graduate Student
6	27	Male	Graduate Student
7	24	Female	Graduate Student
8	26	Female	Graduate Student

## DATA COLLECTION – INTERVIEWS

We conducted interviews with a total of 8 participants with ages ranging from 22 to 53 via Zoom and in-person. We made use of the DePaul University research participant pool and connections within our communities. After receiving their consent, we recorded the meeting and asked warm-up questions. We then asked them a series of questions about their thoughts on fact-checking and misinformation. We concluded by asking them what they would like to see in an online based fact checking tool. The interview recordings were between 25-45 minutes.

## DATA ANALYSIS – INTERVIEWS

We went over our results and created a code book to better classify our results. Once we had coded our interviews, we met again to group our codes into four themes. We found that these themes aligned more closely with our findings than those derived from our initial observations.

To visualize our findings, we created an affinity map (see appendix) along with a persona spectrum.

Using the persona spectrums, we were able to create two personas, who we named Samuel and Carina. We created scenarios and then journey maps for these personas, to reflect different paths they might take while using a fact-checking tool. Finally, we created a priority matrix with design concepts inspired by our observations and interviews.

## Findings

We organized the findings from our observations and interviews into four common themes:

1. **Understanding Misinformation**
2. **Emotions**
3. **Tools and Strategies**
4. **Mitigating Information**

### UNDERSTANDING MISINFORMATION

In our observations, participants exhibited varied levels of trust in online content. One of the participants trusted information readily unless it seemed “crazy”, while the other did not trust anything unless verified in detail. A few participants only trusted information from sources they had previously deemed reliable, such as the NIH.

In the interviews, our participants described misinformation as sources that were either misrepresented or false. Participants mentioned that they determine the relevance of new information based on whether it affects them or their loved ones directly, or if they find it interesting. They put effort into fact-checking only if it directly impacts their work or personal life, the content is shocking, or if it is thought provoking. If it is celebrity gossip, all participants tend to not bother with fact-checking.

All of our participants mentioned that they encounter misinformation most frequently on social media platforms such as Twitter, Instagram, WhatsApp, LinkedIn, and YouTube shorts. One of our participants mentioned encountering misinformation via news sources.

### **Quotes:**

Leo admitted, “When it affects me in some or the other way.”

Leo stated, “I know that there is a lot of nonsense on social media, but I am not exposed to it because I know that there is, so I don't do that...instead, I go to reliable sources directly.”

Ava mentioned, “I trust my local news outlets, such as ABC and CBS, rather than CNN or Fox News because it has less bias.”

## **EMOTIONS**

In our observations, participants mentioned they: “didn’t want to read the article,” that the article was “dated,” and the process was “annoying” because it was slow. A few participants mentioned that the information verification process was time-consuming.

Most participants from our interviews expressed frustration and annoyance when encountering misinformation, while other participants just scrolled past it. One participant didn’t like it when others shared information without verifying it. However, some participants took verifying misinformation as a learning opportunity. Fact-checking misinformation makes them feel more in control and knowledgeable. All participants from the interviews mentioned that they dislike fact-checking because it is time consuming.

### **Quotes:**

Leo mentioned, “I feel amazing...that- oh! Time to exercise my critical thinking muscles again!”

Ben admitted, “I hate it when people just share things without checking if it's true or not.”

Ruby stated, “I enjoy fact-checking because I am in control of knowing what is true and what's not true.”

Ella mentioned, “It’s a long process and sometimes you just can't find the right source and that's really annoying.”

## **TOOLS AND STRATEGIES**



In our observations, participants demonstrated diverse fact-checking habits, with Google being the primary tool used for verifying information. A few participants relied on AI chatbots, Reddit, and expert sources like the NIH and Mayo Clinic. We observed that some participants had structured fact-checking methods such as verifying authorship and seeking peer-reviewed sources. Others exhibited a more casual approach, like clicking on the first result that looked legitimate. A few participants trusted alternative sources like naturopathic doctors and social media more than traditional scientific institutions.

In our interviews, participants used different strategies to verify information. Commonly used tools include Google, fact-checking websites like FactCheck.org, news sources such as BBC, The New York Times, and The Washington Post. Some relied on scientific research papers, AI tools such as ChatGPT to cross-check information. Participants also mentioned that they evaluate credibility based on author's expertise, official sites, source transparency and known sources that they have been following for a long time.

### **Quotes:**

Noah admitted, "I ask ChatGPT to verify using the new web-based search, and it combines and validates the link."

Ben stated, "Basically, always go to verified and scientifically backed sources and experts working in their respective fields."

## **MITIGATING MISINFORMATION**

From our interviews, many of our participants preferred AI driven solutions to flag or block misinformation. One participant believed that government regulations could play a role in mitigating misinformation. However, other participants believed it's an individual's responsibility to verify information before believing it to be true. Many participants talked about consuming information from credible sources to avoid encountering misinformation.

### **Quotes:**

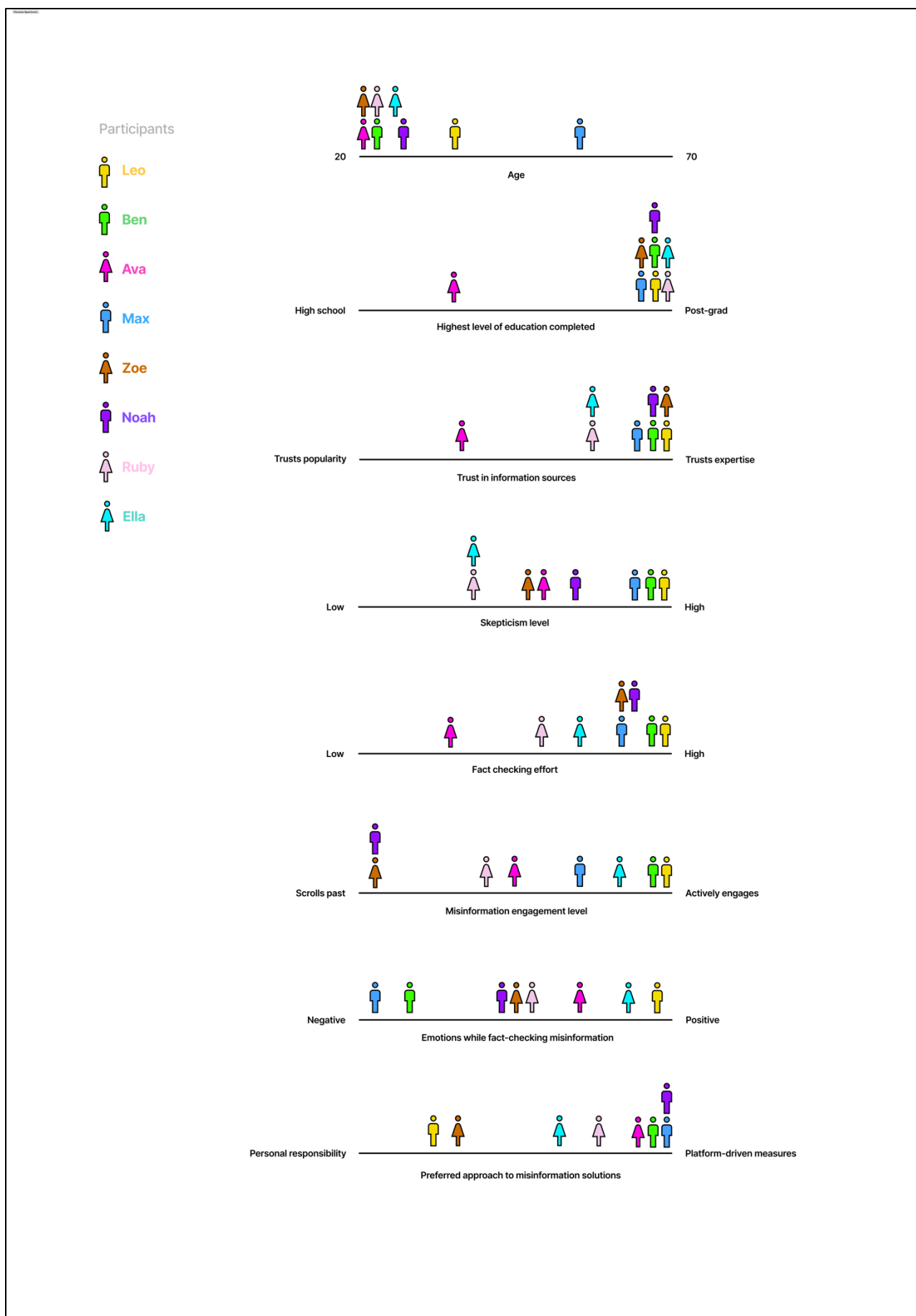
Zoe mentioned, "I unfollow or block those pages that are spreading misinformation."

Ben stated, "I try to follow reliable sources and not get my news from super clickbait-y websites."

Noah explained, “A feature which would not allow someone to post misinformation or attaches community guidelines if it’s false.”

## PERSONA SPECTRUMS

We identified eight spectrums that appropriately described our participants. We began by adding the demographic information like age and education. Then, we moved on to qualities that differentiate them with respect to skepticism, fact-checking efforts, misinformation engagement, the emotions that they feel while encountering misinformation, and their preferred approaches to mitigate misinformation.



## PERSONAS

### Persona 1

#### Samuel- Skeptic Sam



**Samuel**

**"I deal in only reality... not subjective reality, only objective one."**

**Age:** 53

**Education:** Post Graduate

**Occupation:** Student

##### **Bio:**

Sam is a post-graduate student with a strong analytical mindset. He trusts verified experts and peer-reviewed research for verifying misinformation. He is highly skeptical of online content, always questioning sources before believing them. He puts significant effort into fact-checking, cross-referencing multiple academic and journalistic sources before making conclusions.

Sam actively engages with misinformation, correcting false claims and educating others when necessary. He finds fact-checking enjoyable and sees it as a learning opportunity. He supports platform-driven solutions, believing that tech companies should implement misinformation controls to help mitigate misinformation.

##### **Goals:**

- Ensure that he only consumes and shares accurate, evidence-based information.
- Help others recognize misinformation and promote digital literacy.
- Use research-backed sources to validate claims in his everyday life.

##### **Technology Usage:**

**Devices:** Laptop for academic research, mobile for quick information verification.

**Internet Habits:** Reads academic journals, follows science communicators, uses Google Scholar, and consults experts.

**News Consumption:** Prefers long-form investigative journalism and peer-reviewed research over mainstream media.

**Social Media:** Avoids social media.

##### **Frustrations:**

- Misinformation spreads faster than truth, making it hard to counter.
- Hates when people refuse to accept fact-checked evidence and spread misinformation.
- Frustrated that finding credible sources takes too much time and effort.
- Misinformation is emotionally exhausting to deal with regularly.
- Many people rely on opinions and social trends instead of expert knowledge.

##### **Wants & Needs:**

- More transparency in fact-checking processes to get explanations of how claims are verified.
- Easier access to primary sources like academic papers, peer-reviewed studies and articles, and investigative journalism.
- Social media companies should take stronger measures against false and clickbait-y content.
- Simpler tools that help identify misinformation quickly, leading to less mental fatigue.
- Fewer misleading headlines and scientific papers/studies linked with every claim/statement online.

## Persona 2

### Carina- Casual Carina



Carina

**"It depends on your algorithm when it comes to consuming media. So if it's something that I see that's not typical, I question whether I should believe it."**

Age: 22  
Education: Undergraduate  
Occupation: Student

#### Bio:

Carina is a undergraduate student who enjoys keeping up with trending topics but doesn't put much effort into verifying information. She has average skepticism - she doesn't automatically believe everything she sees, but she also doesn't go out of her way to verify claims. She trusts popularity slightly more over expertise and doubts the information that comes outside the norm from what the social media algorithms show her.

Carina generally scrolls past information without engaging, if it doesn't affect her. She finds verifying information uninteresting unless the claim is something that affects her directly. She feels that fact-checking often turns into an ego-driven competition where people just want to prove they're right. She dislikes fact-checking when it results in proving her wrong, as it can be frustrating to argue for a point and then realizes she was mistaken. She wants platforms to handle misinformation for her, as she doesn't want to put in much effort to verify things by herself.

#### Goals:

- Stay informed without spending too much time verifying information.
- Have platforms manage misinformation, so she doesn't have to think about it.
- To have a trusted AI to inform her as to the credibility of online information.

#### Technology Usage:

**Devices:** Smartphone for browsing, laptop for assignments.

**Internet Habits:** Social media and reads news articles.

**News Consumption:** Follows trending discussions.

**Social Media:** Strong usage of social media.

#### Frustrations:

- Doesn't want to deal with misinformation by herself.
- Verifying information is draining.
- Frustrated that finding credible sources takes too much time and effort.
- Fact-checking feels like a competition to prove who was right.
- Hard to tell what's true when trends dominate.

#### Wants & Needs:

- Platforms should filter out false content.
- Community notes or warnings for misinformation, maybe even more government regulation
- A simple and quick way to verify misinformation without feeling frustrated

## SCENARIOS

### Scenario 1

#### Skeptic Sam

Sam, a graduate student in Chicago, often finds himself battling misinformation in his family's WhatsApp group. He carefully verifies claims by searching for scientific papers, peer-reviewed journals, and articles written by experts.

Despite his efforts, his relatives frequently dismiss credible evidence, leaving him frustrated. He is annoyed that fact-checking eats into his study time. He wonders if pushing back is even worth it, but he continues because he cares about protecting his family from falling prey to harmful misinformation.

The next morning, Sam sees yet another misleading message: "Drink this tea to cure everything." Debunking it feels exhausting, but his roommate suggests using a fact-checking service. Skeptical but curious, Sam tries it - and is instantly impressed by how quickly he can verify the claim.

The service flags the claim as potentially misleading based on Sam's health misinformation settings. It uses an AI assistant to color-code misleading phrases and missing context, prompting him to dig deeper. The source credibility checker rates the original source poorly, while the fact-checking dashboard links expert studies debunking the claim and includes a bias warning. Sam appreciates the solution for quick fact-checking.

Empowered by how quickly he can verify claims, Sam shares the evidence with his family. Some ignore it, but others thank him. For the first time, fact-checking feels manageable. As he returns to studying, he smiles - knowing he's making a difference.

## **Scenario 2**

### **Casual Carina**

Carina has been tricked by fads in the past, so she is a little more skeptical of trending stories than she used to be. Recently she has seen some mentions for a new fitness supplement. Several people in her TikTok feed have posted about it. She typically does not see posts about health or fitness supplements, so she is skeptical about it.

However, as a student who is about to finish her degree and is during a job search, she is quite busy. Her increasingly stressful life has made her more concerned about staying fit and healthy. She's interested in finding out if this supplement is good but doesn't have much time to do the research or evaluate the results.

A classmate mentioned a service that will help you evaluate sources, and she decided to give it a try. She liked that the service would color code known misinformation for her, so she can easily avoid those sources. She also appreciated the content rating and date sorter features, which allow her to easily see the most recent and reliable information.

Knowing that initial findings about healthcare products may not always be accurate, she has activated the update feature for this search, to let her know about new and relevant stories related to this supplement.

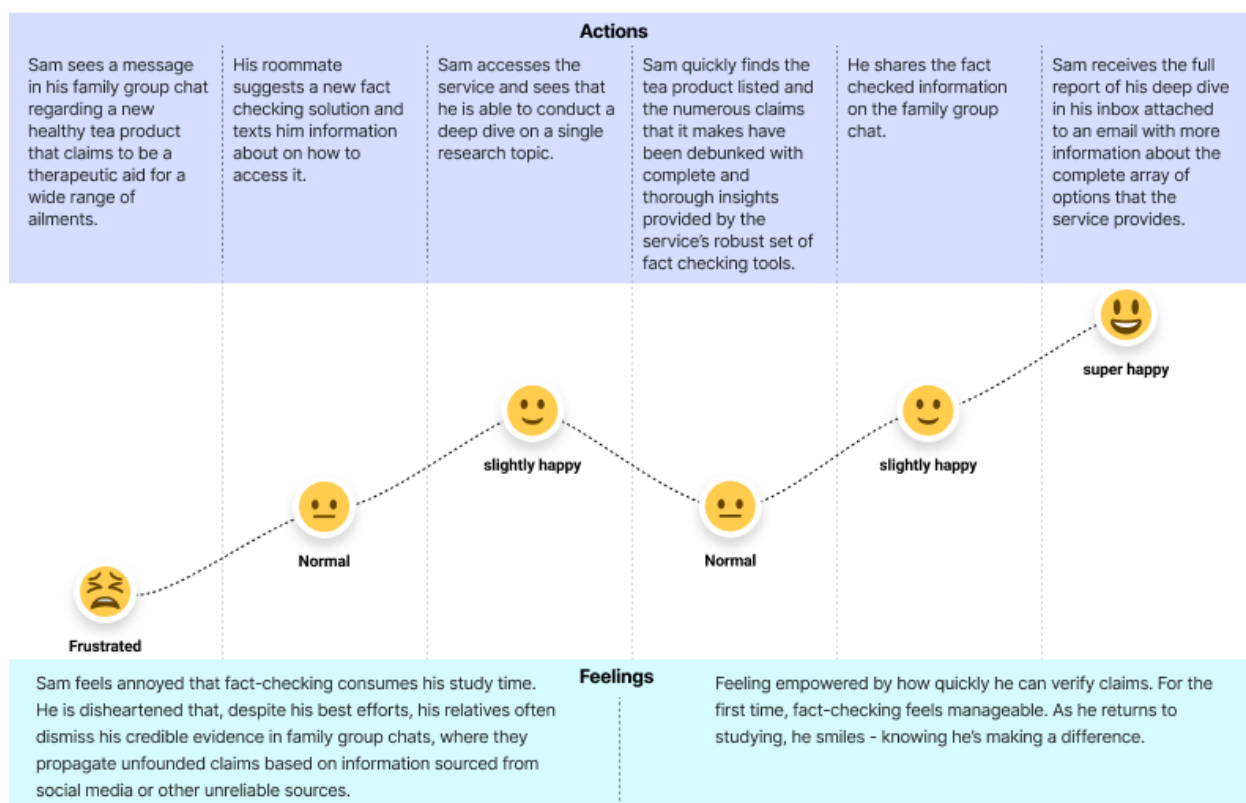
She is happy that she was able to investigate this product with minimal effort and has started posting short tutorials showing how easy it is to use the product on social media.

## JOURNEY MAPS



### Sam's journey

Sam wants to assist his family members in avoiding the waste of time and money, as well as the potentially harmful effects of nutritional supplements that make false or misleading claims.

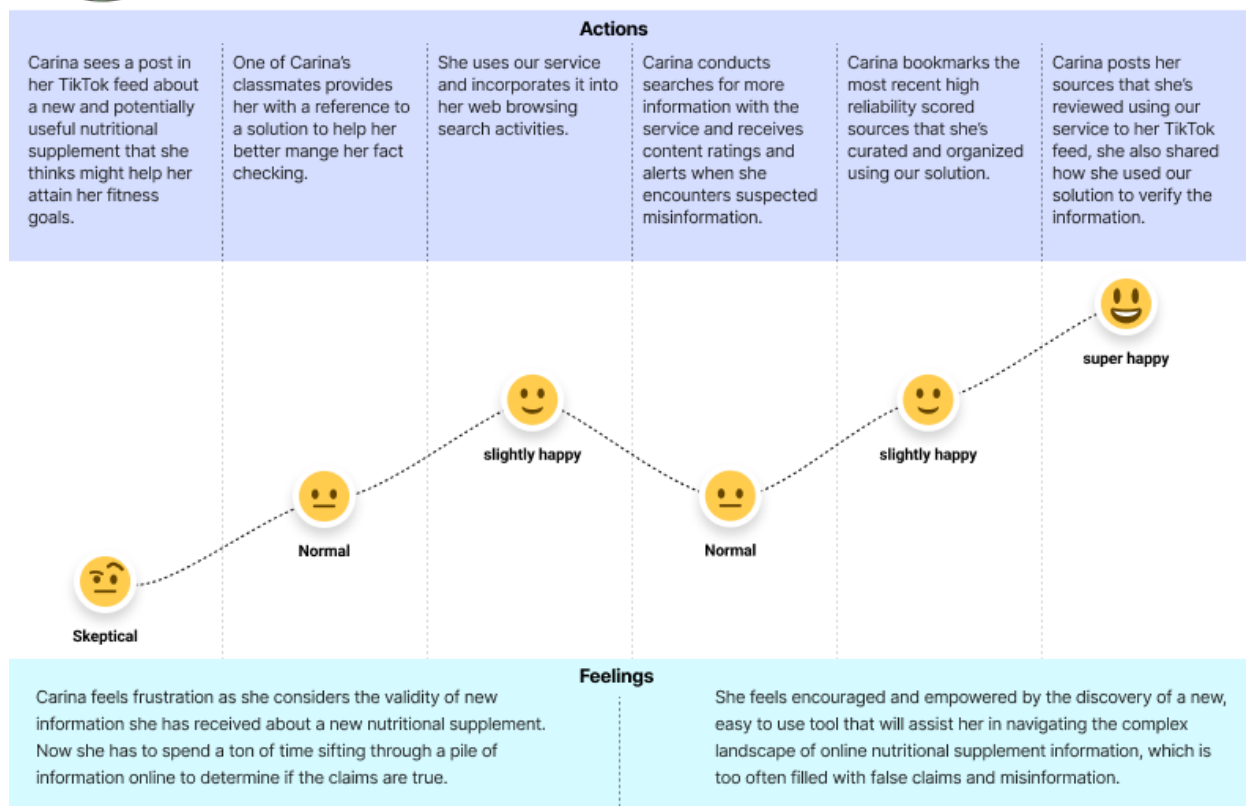






### Carina's journey

Carina wants to save time in her search for effective supplements while ensuring that she isn't duped into taking ineffective and potentially harmful nutritional products.



## PRIORITY MATRIX

No.	Feature	Category	Priority	Impact	Feasibility	Users
1	Relevance tagger	Understanding Misinformation	High	High	Med	Sam
2	Relevance filtering based on user preferences	Understanding Misinformation	Med	High	High	Sam
3	Content flags for completeness, missing context or bias	Understanding Misinformation	Med	Med	Low	All
4	AI agent that uses color coded highlights of known misinformation	Emotions	High	High	High	All
5	Point earned for catching misinformation	Emotions	Med	High	Med	Carina
6	Misinformation Minder, updated credibility notifications	Emotions	Med	High	Low	All
7	Source and credibility score meter	Tools and Strategies	High	High	Med	All
8	Content Comparison Checker	Tools and Strategies	Med	Med	Low	All
9	Content rater	Tools and Strategies	High	High	Med	All
10	Date sorter	Tools and Strategies	High	High	Low	Sam
11	Community notes	Mitigating Misinformation	High	High	High	All
12	Transparency Dashboard	Mitigating Misinformation	Low	Med	Med	All
13	Fact checking tutor onscreen assistant	Mitigating Misinformation	High	High	Med	Carina

## Discussion

We found common patterns from our observations and interviews on how people fact-check, make decisions, and identify accurate information. These insights show ways technology-based solutions can help improve digital literacy, make fact-checking easier, and build trust in online sources.

### UNDERSTANDING MISINFORMATION

Users focus on what they care about and will look deeper into information when it seems like it will impact them. A technology-based solution should let users select topics relevant to them and allow them to filter sources based on their preferences. The solution should include personalized trust settings and allow users to designate specific types of sources they want to see (e.g., peer-reviewed journals, news agencies).

### EMOTIONS

Dealing with misinformation is often overwhelming, requiring individuals to navigate conflicting sources while misinformation spreads effortlessly. Some feel a strong responsibility to verify harmful claims, while others are frustrated by the effort it demands.

One way to correct this could be to gamify the process of fact checking. Users could receive a rating themselves, based on sharing their work fact-checking and how useful others found it. An alternative would be to keep up-to-date credibility scores on information sources, so users would not have to evaluate sources themselves.

### TOOLS AND STRATEGIES

Since users have different ways of checking information and varying levels of confidence, a design should provide multiple fact-checking options. A solution should simplify the process with a content comparison checker and give source and credibility scores. Since some users prefer quick answers, the design should let users choose a balance between speed and accuracy.

## MITIGATING MISINFORMATION

The discrepancy in fact-checking approaches from our observations and interviews shows the differences in digital literacy and individual fact-checking habits, again highlighting the need for flexible verification methods. A solution should provide options such as AI-assisted verification and tutorials to help users who are unsure where to start their fact-checking process. A section for community notes on sources could also assist with trust.

## LIMITATIONS AND FUTURE WORK

This study is limited by the sample size and the diversity of participants, which may not fully represent all user behaviors and fact-checking habits. Additionally, the observations and interviews were based on self-reported practices, which may not always reflect actual behavior in real-world scenarios.

Future studies should expand the participant pool to include a more diverse range of users and investigate how verification habits evolve over time. Further research could also examine the effectiveness of different fact-checking tools in helping users access online information more accurately.

## Conclusion

Our study highlights the challenges individuals face when navigating misinformation, their emotional burdens, varied fact-checking strategies, and the role of personal trust in determining credibility. The findings suggest a need for technology-driven solutions that simplify verification, personalize information filtering, and provide clear credibility indicators to make verification of information easier. Future research should explore how these solutions impact user engagement with fact-checking and whether they lead to more accurate information consumption over time.

## Bibliography

- Suarez-Lledo<sup>1</sup>, V., & Alvarez-Galvez<sup>1</sup>, J. (2021). *Prevalence of health misinformation on social media: Systematic review*. Journal of Medical Internet Research.  
<https://www.jmir.org/2021/1/E17187/>
- Wang, Y., Ling, C., & Stringhini, G. (2023). Understanding the use of images to spread covid-19 misinformation on Twitter. *Proceedings of the ACM on Human-Computer Interaction*, 7(CSCW1), 1–32. <https://doi.org/10.1145/3579542>
- McClure Haughey, M., Muralikumar, M. D., Wood, C. A., & Starbird, K. (2020). On the misinformation beat. *Proceedings of the ACM on Human-Computer Interaction*, 4(CSCW2), 1–22. <https://doi.org/10.1145/3415204>
- Khan, S. O., Ghafourian, T., & Patil, S. (2024). Targets of weaponized islamophobia: The impact of misinformation on the online practices of Muslims in the United States. *Proceedings of the ACM on Human-Computer Interaction*, 8(CSCW1), 1–38.  
<https://doi.org/10.1145/3637403>
- Hussein, E., Juneja, P., & Mitra, T. (2020). Measuring misinformation in video search platforms: An audit study on YouTube. *Proceedings of the ACM on Human-Computer Interaction*, 4(CSCW1), 1–27. <https://doi.org/10.1145/3392854>

# Appendix

## OBSERVATION INFORMED CONSENT

### **INFORMED CONSENT TO PARTICIPATE IN RESEARCH**

#### **What is the purpose of this research?**

We invite you to participate in a research study aimed at enhancing our understanding of how individuals assess the credibility of online information.

This study is being conducted by graduate students at DePaul University as a requirement for obtaining their master's degrees.

This research is being supervised by:

<b>Name</b>	<b>Email</b>
Alonzo, Oliver, Ph.D. – CDM, DePaul University	<a href="mailto:oliver.alonzo@depaul.edu">oliver.alonzo@depaul.edu</a>

The following people are on the on the research team conducting this study.

<b>Name</b>	<b>Email</b>
Rashi Dhoju	<a href="mailto:rdhoju@depaul.edu">rdhoju@depaul.edu</a>
Chad King	<a href="mailto:cking70@depaul.edu">cking70@depaul.edu</a>
Dhwani Parekh	<a href="mailto:dparekh2@depaul.edu">dparekh2@depaul.edu</a>
Paul Vasholz	<a href="mailto:pvasholz@depaul.edu">pvasholz@depaul.edu</a>

**We hope to include about 8 people in the research study.**

**Why are you being asked to be in the research?**

You are invited to participate in this study because you have indicated that you are a consumer of online digital media and informational content, or you are working as a professional in the digital information space. You must be age 18 or older to be in this study. This study is not approved for the enrollment of people under the age of 18.

**What is involved in being in the research study?**

If you agree to participate in this study, you will be required to complete specific scenario-based tasks and answer questions regarding your experiences. You will be asked to assess the credibility and accuracy of online information. We would like to learn more about people's ability to differentiate between accurate and misleading information from various sources. Additionally, we will request some demographic information, including your gender identity, education level, approximate age, and occupation.

The activities that you participate in will be audio recorded and transcribed into written notes later in order to get an accurate record of what was said.

**Are there any risks involved in participating in this study?**

There are no known risks associated with this study. We will make our best effort to avoid exposing you to any sensitive or inflammatory information. You may decline to answer any question that makes you uncomfortable at any time.

**Are there any benefits to participating in this study?**

You will not personally benefit from participating in this study. However, we hope that our findings will assist others in the future by improving the ability to verify the credibility of online information. Additionally, we aim to develop accessible tools that facilitate navigation and critical engagement with digital content, ultimately helping to eliminate the spread of misinformation.

**Can you decide not to participate?**

Your participation is entirely voluntary, meaning you have the option to decline. There will be no negative consequences, penalties, or loss of benefits if you choose not to participate or if you decide to withdraw from the research after you have begun.

**You may withdraw from this research study at any time.**

**Who will see my study information and how will the confidentiality of the information collected for the research be protected?**

The research records will be kept and stored securely. Your information will be combined with information from other people taking part in the study. When we write about the study or publish a paper to share the research with other researchers, we will write about the combined information we have gathered. We will not include your name or any information that may be used to directly identify you.

To prevent others from accessing our records or identifying you should they gain access to our records, we have put some protections in place. These protections include using fake names for you and other people in the study and keeping the records in a safe and secure place.

Any audio or video recordings will be kept until accurate written notes have been made, then they will be destroyed.

**Who should be contacted for more information about the research?**

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study or you want to get additional information or provide input about this research, you can contact the research supervisor:

Name	Email
Alonzo, Oliver, Ph.D. – CDM, DePaul University	<a href="mailto:oliver.alonzo@depaul.edu">oliver.alonzo@depaul.edu</a>

And/or the researchers.



Name	Email
Rashi Dhoju	<a href="mailto:rdhoju@depaul.edu">rdhoju@depaul.edu</a>
Chad King	<a href="mailto:cking70@depaul.edu">cking70@depaul.edu</a>
Dhwani Parekh	<a href="mailto:dparekh2@depaul.edu">dparekh2@depaul.edu</a>
Paul Vasholz	<a href="mailto:pvasholz@depaul.edu">pvasholz@depaul.edu</a>

**You will be given a copy of this information to keep for your records.**

**Statement of Consent from the Subject:**

I have read the above information. I have had all my questions and concerns answered. By signing below, I indicate my consent to be in the research study.

Signature: \_\_\_\_\_

Printed name: \_\_\_\_\_

Date: \_\_\_\_\_

## OBSERVATION PROTOCOL

### Step 1: Introduction

#### Introduce yourself and the project:

My name is \_\_\_\_\_. Thank you for taking the time to meet with me. I'm working on a school research project, and my team is interested in the "Digital Literacy" domain. We are trying to understand how people verify the accuracy of information they get. Specifically, we're interested in observing how individuals approach validating information from online sources.

#### Explain the purpose of the project:

The purpose of this project is to understand how people check if online information is accurate. By observing how participants verify information, the research aims to identify common methods, challenges, and ways to improve digital literacy skills for evaluating online content.

#### Explain what will happen:

There's no right or wrong way to complete the activity, and no right or wrong answers to my questions. I'm simply here to observe what you do and listen to your thoughts. While you work on the activity, I'll take note of your actions and any comments you make. I may also ask you to explain what you're doing or ask questions before, during, or after the activity.

#### Informed consent:

We need your informed consent to participate.

*Give participants the informed consent form OR if a remote study, read it aloud.*

*Get a signature if in-person or verbal consent if remote.*

[After reading the consent form]

- Do you agree to participate in our research project?
- Any questions before we start?

### Step 2: Warm-up

#### Establish rapport with the participant:

Before we start the observation, I'd like to ask you a few questions.

- Have you ever needed to verify a piece of information you came across online? If so, could you share an example?
- What tools or strategies do you typically use to check the validity of information?
- How confident are you in your ability to identify misinformation or confirm the credibility of a source?

### Step 3: Observation

Let's move on to our activity.

Scenario:

Imagine you are conversing with a friend who believes in consuming dietary supplements daily. Recently, they came across this article ([link](#)). They are curious about the claims in the article and wonder if they should reconsider their dependence on supplements.

Your goal is to:

1. Help your friend verify and decide whether the information is accurate.
2. Please explain how you would verify its credibility and walk me through your thought process as you do so.
3. Use any tools or strategies you normally would, such as search engines, fact-checking websites, or social media.

Could you share your screen? (if online). Take your time, and feel free to think aloud as you go through the process.

*[Observe the participant: Let the participant perform the activity. Record the participant's activity using a screen recording tool. Only interrupt if necessary. Take note of your questions and save them for the wrap-up. Note: Take a picture of any notes they record during the task.]*

### Step 4: Wrap-up

#### Follow-up Questions:

I have some follow-up questions I'd like to ask:

- What was your first impression of the article? Did anything stand out to you that you found suspicious?
- Which sources did you find most helpful? Why?
- Did you face any difficulty while fact-checking? If yes, what were they?

- What helped you to finalize your accuracy?
- Did the observation change how you acted?

**Demographic Questions:**

- How often do you fact-check in your daily life?
- How comfortable do you feel using online tools or websites to fact-check information?
- On a scale of 1 to 5, how much do you generally trust information you find online?
- Do you often share information you find online with friends, family, or on social media?  
If so, do you usually verify it first?

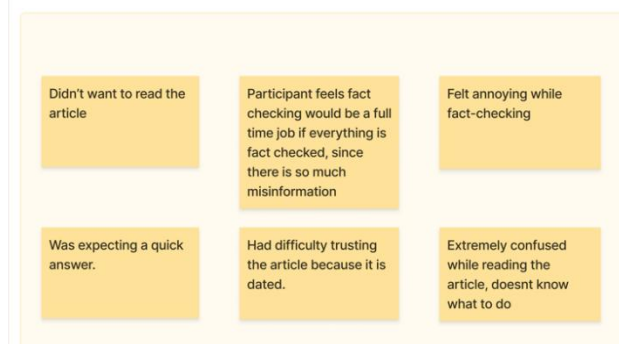
**Conclusion:**

That concludes the activity. Thank you for your time and for meeting with me.

Would it be okay to reach out to you for a follow up sometime in the next few weeks?

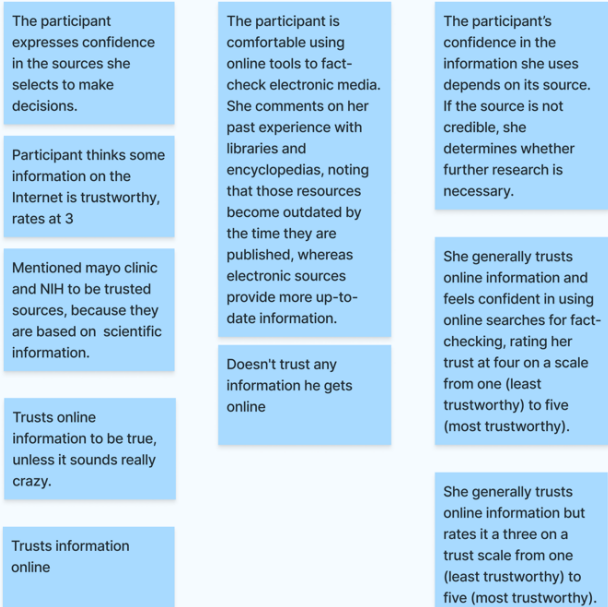
## AFFINITY DIAGRAM OBSERVATION THEMES

### Challenges

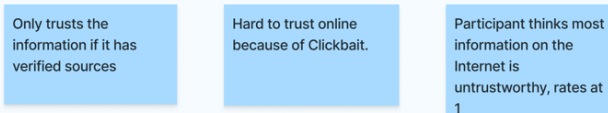


### Perceptions of Trust

#### High Trust



#### Low Trust



## Strategies and Tools

### General strategies

#### Strategies

She consults naturopathic doctors to verify information for supplement use and cross-references their guidance to ensure its validity.

Doesn't really fact-check.

She finds naturopathic doctors through social media and indicates that she trusts their guidance when verifying supplement information.

They extensively use AI to select sources but expresses frustration with the inconsistencies in the information it provides.

She describe their fact-checking habits as occasional, typically seeking further information on interesting topics using their phone.

She stated that she prefers consulting naturopathic doctors found online rather than relying solely on online sources to verify supplement information.

"So if you really actually want to find out what is true, you have to keep following this until you get to the scientific paper, and read that conclusion, and find out who wrote that paper, look at their track record. That's how you actually find out...and then look at the study itself...look at what the experts are saying about the study...was that study conducted properly?"

For fact-checking, the participant relies on previously trusted sources and continues to trust their information on future topics.

Participant indicates she takes supplements and regularly check sources online to choose the correct supplements for herself.

### Actions and Approaches

#### While fact checking the article.

#### Actions

Reads the article carefully

Googles the article, finds many sites that show similar results, so believes it to be true.

The participant visited the National Institutes of Health website for more information.

Scrolls through google search to find mayo clinic references relating to the article.

The participant goes to JAMA website to see if findings are accurately reported in CNN article.

Uses google scholar to look for peer-reviewed articles/papers.

Checks the NIH website to verify the information of the article.

The participant picks up her phone, opens a web browser, and searches for vitamin A deficiency. She continues searching and selects a link from the Merck Manual, recognizing it as a trusted source used by doctors.

From the Google results, the participant selected articles from Johns Hopkins and the University of Pennsylvania, recognizing them as respected universities.

Googled the author after reading the article and checked her LinkedIn profile to see if she really worked in CNN.

The participant sends link to a friend through a text message.

Uses 'web search' on ChatGPT and asks it to verify it. Asks for backup links and verified sources.

#### Tools

Google

Googles the links and clicks the first link that "looks legit" to him.

Google, checks the source, researches about the author, Reddit, ChatGPT.

The participant verified information by researching a YouTube video featuring a young man in Zimbabwe who claimed to generate electricity from radio waves to power a car. Upon further investigation using Google, she discovered the information was inaccurate.

She indicated that she'll generally go to Google to check information.

She uses AI chatbots to help choose supplements that do not conflict with her medications and to verify information.

#### Approaches

"It could be real, or it could just be someone making things up."

Mentioned fact-checking was easy for him because he has extensive practice.

She indicated that she'll generally go to Google to check information.

Participant finds that article doesn't make very strong claims, so thinks it probably not worth fact checking

He discovers that Northwestern Hospital, where he often visits, has posted a similar article.

He finds the information more credible after seeing a similar article from the National Institutes of Health.

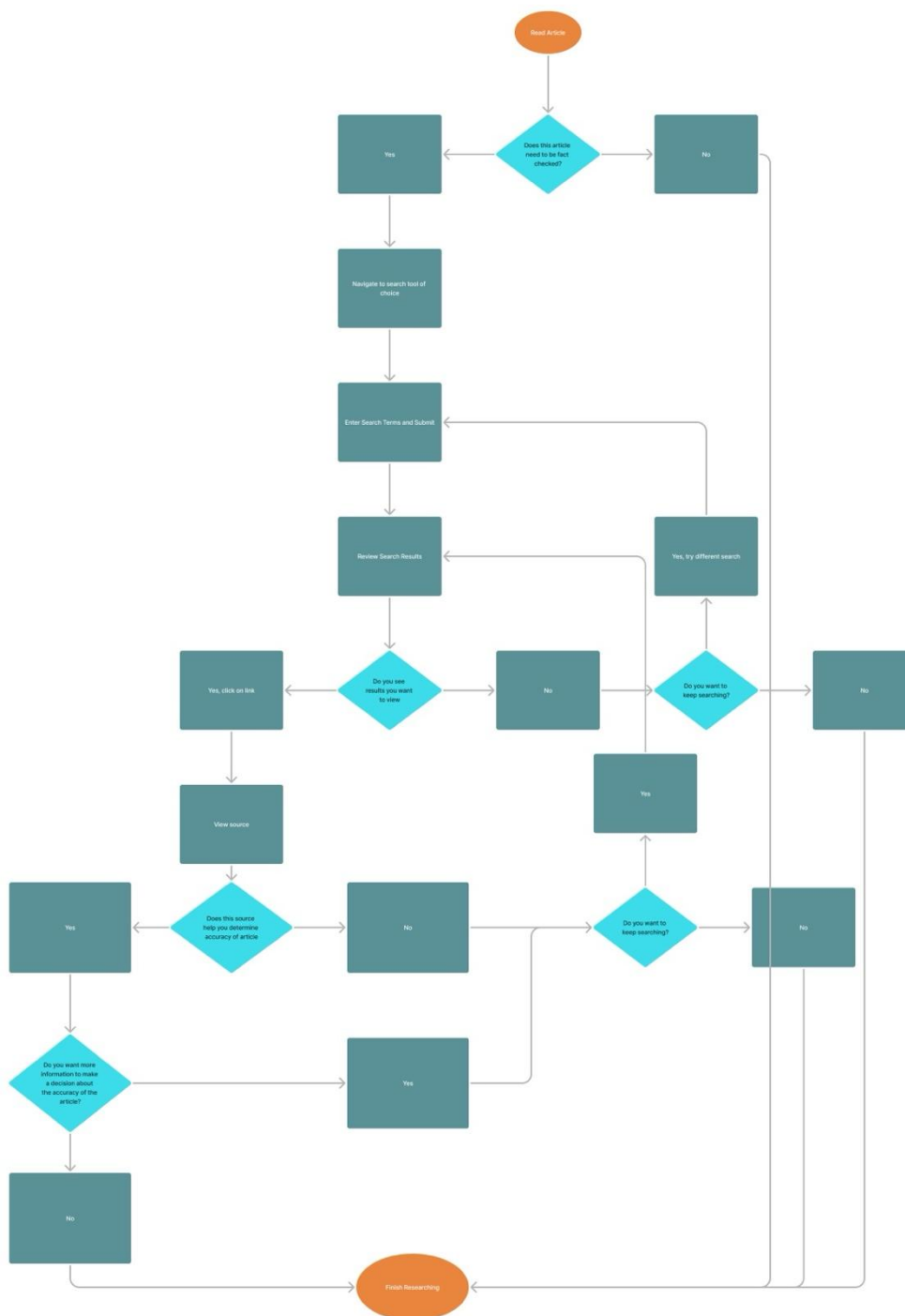
The participant watches the video but does not read the article, concluding the information is true based solely on the video.

The participant states she would advise her friend on the appropriate use of supplements. For example, she would research vitamin A and share her findings.

While reading an article, the participant states she would use an internet search to verify the benefits of the Mediterranean diet before incorporating it into her life.

## SEQUENCE DIAGRAM

Fact-Checking Process Sequence Diagram



## INTERVIEW INFORMED CONSENT

### **INFORMED CONSENT TO PARTICIPATE IN RESEARCH**

#### **What is the purpose of this research?**

We invite you to participate in a research study aimed at enhancing our understanding of how individuals assess the credibility of online information.

This study is being conducted by graduate students at DePaul University as a requirement for obtaining their master's degrees.

This research is being supervised by:

Name	Email
Alonzo, Oliver, Ph.D. – CDM, DePaul University	<a href="mailto:oliver.alonzo@depaul.edu">oliver.alonzo@depaul.edu</a>

The following people are on the on the research team conducting this study.

Name	Email
Rashi Dhoju	<a href="mailto:rdhoju@depaul.edu">rdhoju@depaul.edu</a>
Chad King	<a href="mailto:cking70@depaul.edu">cking70@depaul.edu</a>
Dhwani Parekh	<a href="mailto:dparekh2@depaul.edu">dparekh2@depaul.edu</a>
Paul Vasholz	<a href="mailto:pvasholz@depaul.edu">pvasholz@depaul.edu</a>

**We hope to include about 8 people in the research study.**

#### **Why are you being asked to be in the research?**

You are invited to participate in this study because you have indicated that you are a consumer of online digital media and informational content, or you are working as a professional in the digital information space. You must be age 18 or older to be in this study. This study is not approved for the enrollment of people under the age of 18.



### **What is involved in being in the research study?**

If you agree to participate in this study, you will be asked a series of questions to assess your approach to verifying the credibility and accuracy of online information. We would like to learn more about people's ability to differentiate between accurate and misleading information from various sources. Additionally, we will request some demographic information, including your gender identity, education level, approximate age, and occupation.

The interview that you participate in will be audio recorded and transcribed into written notes later in order to get an accurate record of what was said.

### **Are there any risks involved in participating in this study?**

There are no known risks associated with this study. We will make our best effort to avoid exposing you to any sensitive or inflammatory information. You may decline to answer any question that makes you uncomfortable at any time.

### **Are there any benefits to participating in this study?**

You will not personally benefit from participating in this study. However, we hope that our findings will assist others in the future by improving the ability to verify the credibility of online information. Additionally, we aim to develop accessible tools that facilitate navigation and critical engagement with digital content, ultimately helping to eliminate the spread of misinformation.

### **Can you decide not to participate?**

Your participation is entirely voluntary, meaning you have the option to decline. There will be no negative consequences, penalties, or loss of benefits if you choose not to participate or if you decide to withdraw from the research after you have begun.

**You may withdraw from this research study at any time.**

**Who will see my study information and how will the confidentiality of the information collected for the research be protected?**

The research records will be kept and stored securely. Your information will be combined with information from other people taking part in the study. When we write about the study or publish a paper to share the research with other researchers, we will write about the combined information we have gathered. We will not include your name or any information that may be used to directly identify you.

To prevent others from accessing our records or identifying you should they gain access to our records, we have put some protections in place. These protections include using fake names for you and other people in the study and keeping the records in a safe and secure place.

Any audio or video recordings will be kept until accurate written notes have been made, then they will be destroyed.

**Who should be contacted for more information about the research?**

Before you decide whether to accept this invitation to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study or you want to get additional information or provide input about this research, you can contact the research supervisor:

Name	Email
Alonzo, Oliver, Ph.D. – CDM, DePaul University	<a href="mailto:oliver.alonzo@depaul.edu">oliver.alonzo@depaul.edu</a>

And/or the researchers.

Name	Email
Rashi Dhoju	<a href="mailto:rdhoju@depaul.edu">rdhoju@depaul.edu</a>
Chad King	<a href="mailto:cking70@depaul.edu">cking70@depaul.edu</a>
Dhwani Parekh	<a href="mailto:dparekh2@depaul.edu">dparekh2@depaul.edu</a>
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**You will be given a copy of this information to keep for your records.**

**Statement of Consent from the Subject:**

I have read the above information. I have had all my questions and concerns answered. By signing below, I indicate my consent to be in the research study.

Signature: \_\_\_\_\_

Printed name: \_\_\_\_\_

Date: \_\_\_\_\_

## INTERVIEW PROTOCOL

### Step 1: Introduction

Introduce yourself and the project:

My name is \_\_\_\_\_. Thank you for taking the time to meet with me. I am a graduate student working on a university research project, and my team is interested in the domain of “Digital Literacy”. We are trying to understand how people verify the accuracy of information they consume. Specifically, we’re interested in learning how individuals approach validating information from online sources.

Explain the purpose of the project:

The purpose of this project is to understand how people check if online information is accurate. By interviewing participants to understand how they verify information, the research aims to identify common methods, challenges, and ways to improve digital literacy skills for evaluating online content.

Explain what will happen:

There are no right or wrong answers to my questions. I’m simply here to understand what you do and listen to your thoughts. I will record your answers and any comments you make for further analysis.

Overarching Research Question:

Screeners Questions (asked before scheduling the interview):

Are you over 18 years of age?

Do you consume online content?

Are you willing to participate in an interview that could take up to 45 minutes?

Have you ever needed to verify a piece of information you came across online?

Are you willing to discuss the fact checking methods that you use to verify information on the internet?

### Warm-Up Questions

When you come across new information online, how do you usually decide whether it's relevant to you?

How would you define misinformation?

Where do you typically encounter misinformation?

What kind of format is it, e.g. news articles, social media posts, comments, etc.?

How do you feel when you encounter misinformation?

What do you do when you encounter misinformation?

How do you typically check the validity of information?

What strategies/tools do you use to check the validity of the information?

What preventative measures do you take to avoid encountering misinformation?

### Deep Focus

Walk me through a recent example where you had to determine whether a piece of information was credible.

What do you typically do when you see conflicting information on a topic you are interested in?

How do you decide to trust a source while fact-checking?

In what situations do you decide to put a lot of effort into fact-checking?

In what situations do you decide to not put a lot of effort into fact-checking?

What do you like about fact-checking?

What do you dislike about fact-checking?

Retrospective

What would make fact checking easier for you?

In a perfect world if there was a technology that could solve the problem of online misinformation, what kinds of features should that technology have?

In what ways do you think technology could play a role in helping people access online information effectively?

If you could change one thing about how online information is presented, what would it be?

Demographics

How old are you?

What is your gender identity?

What is your occupation?

What is your level of education?

## INTERVIEW CODEBOOK

### 1. Understanding misinformation

Use this code when a participant describes their understanding of misinformation, its sources, and situations where they would or wouldn't fact-check.

#### 1.1 Relevance

Code under: Relevance

Code when the participant describes how they decide whether the new information is relevant to them.

Keywords: Something that affects me or my work, if I find it interesting.

#### 1.2 Definition of misinformation

Code under: Definition\_of\_misinformation

Code when the participant explains their understanding of misinformation.

Keywords: False things, information that is not entirely true, misrepresents what

is actually true.

#### 1.3 Sources of misinformation

Code under: Sources\_of\_misinformation

Code when the participant describes the different sources where they might encounter misinformation.

Keywords: Social media, whatsapp messages, news articles.

#### 1.4 Situations requiring effort

Code under: Situations\_requiring\_effort

Code when the participant describes situations in which they might put in more effort towards verifying misinformation.

Keywords: Something that affects me or the people I care about, finances, while researching a topic I am interested in.

## 1.5 Situations requiring less effort

Code under: Situations\_requiring\_less\_effort

Code when the participant describes situations in which they wouldn't want to fact-check.

Keywords: If it's not important to me, celebrity drama, information that doesn't affect me, non-consequential information.

## 2. Emotions

Use this code when the participant talks about their feelings, likes, dislikes and emotional responses towards misinformation and fact-checking.

### 2.1 Emotional reaction to misinformation

Code under: Emotional\_reaction\_to\_misinformation

Code when the participant describes their feelings when it comes to dealing with misinformation.

Keywords: Amazing because it's a learning opportunity, frustrating, draining.

### 2.2 Response to misinformation

Code under: Response\_to\_misinformation

Code when the participant describes their responses and approach towards misinformation.

Keywords: I try to fact-check, curious to find out how it is misinformation.

### 2.3 Like about fact-checking

Code under: Like\_about\_factchecking

Code when the participant describes the things they like when they verify information.

Keywords: Helps to avoid what is incorrect, helps me feel confident, makes me more knowledgeable.

### 2.4 Dislike about fact-checking

Code under: Dislike\_about\_factchecking



Code when the participant describes the things they dislike when they are fact-checking.

Keywords: Time-consuming, frustrating, annoying, it's a lot of work.

### 3. Tools and strategies

Code when the participant describes the tools and approaches they adopt to evaluate credibility online.

#### 3.1 Fact-checking strategies

Code under: Factchecking\_strategies

Code when the participant describes their strategies and approaches while verifying the information online.

Keywords: Scientific studies, Google, credibility of the author.

#### 3.2 Dealing with conflicting information

Code under: Dealing\_with\_conflicting\_information

Code when the participant describes how they deal with information that opposes their ideas or the information that they have.

Keywords: Compare sources, I then look it up on Google or chat GPT and then go about it.

#### 3.3 Evaluating credibility

Code under: Evaluating\_credibility

Code when the participant describes how they decide which source/s to trust the most while fact-checking misinformation.

Keywords: Track record, depends on how long I've known the source for, cite experts, look for relevant scientific evidence.

### 4. Mitigating misinformation

Code when the participant describes ways that they think would work to reduce the spread of misinformation online including preventative measures, technology solutions and information presentation improvement.

#### 4.1 Preventative measures

Code under: Preventative\_measures

Code when the participant describes the preventative measures that they take to avoid encountering misinformation.

Keywords: Don't go on social media at all, follow the correct sites.

#### 4.2 Technology solutions

Code under: Technology\_solutions

Code when the participant describes technology solutions that can help to mitigate misinformation.

Keywords: Maybe AI could help, something that flags misleading info in real time.

#### 4.3 Information presentation improvement

Code under: Information\_presentation\_improvement

Code when the participant describes their idea of how online information should be presented to avoid misinformation.

Keywords: Fewer misleading headlines, less catchy thumbnails. I just don't want the heading to misguide me.

# AFFINITY DIAGRAM INTERVIEW THEMES

## Understanding misinformation

**Relevance**

If I have a specific goal or a task in mind, I think of, okay, will this help me achieve that task or will it help me achieve this goal?  
David

something that affects my work  
Shawn Fawcett

When I feel like it affects me or some of the other way  
Shawn Fawcett

I have to have some interest in it for it to be relevant to me. Like, is it trustworthy, or is it just like how do I decide it's my personal interest?  
Paul Huxford

Mind boggling or something  
David

And if it's, if the answer is yes, I think I consider that to be relevant  
David

If I find it interesting  
David

something I am interested in  
Shawn Fawcett

So when it comes to relevance, I think it depends on what I'm looking for.  
David

It depends on who the source is  
Paul Huxford

**Definition of misinformation**

misinformation is uh well, it's mispresented in some way. I believe that it's why it would be misinformation. So it would be you know, something that was presented in a way, like a stated way to portray something that you know, has some portion of it being true, but it's presented in a way that's like it's not a falsehood entirely, it's presented in a way that includes important information, like context  
Paul Huxford

I guess a certain piece of information has been passed around and more people have added onto it at this point.  
Paul Huxford

actually misrepresents what is actually true  
Shawn Fawcett

sometimes even just false things  
Shawn Fawcett

I would define misinformation as the spread of false information. Something that is not true. Yeah, that's how I would define it.  
David

information that is not entirely true  
Shawn Fawcett

someone making a mistake in reporting some actual truth  
Shawn Fawcett

false or misleading information  
Shawn Fawcett

spreads sometimes by accident or on purpose  
Shawn Fawcett

Conveying something which isn't actually true  
David

people misinterpreting things and sharing it  
Shawn Fawcett

Something that's not true  
David

**Sources of misinformation**

whatsapp messages  
Shawn Fawcett

You encounter it when it's being told by a biased source  
Paul Huxford

social media  
Shawn Fawcett

I would say social media has more misinformation in it, but also, I think if I had to rank it, I would say any social media, forum comments, could have some misinformation. It depends on how complex the issue is too.  
Paul Huxford

social media  
Shawn Fawcett

I trust more, like my local news outlets, like your ABC, CBS, rather than if they're going like CNN or Fox News. I trust more with my local source give out, I feel like it's less biased.  
Paul Huxford

facebook  
Shawn Fawcett

LinkedIn  
Shawn Fawcett

Twitter  
Shawn Fawcett

Mostly, it's through social media posts  
David

Whatsapp messages  
Shawn Fawcett

YouTube shorts or Instagram reels  
David

gossip videos at the bottom and some guy speaking an influencer or a podcast is going on the top  
David

Typically, I've seen a lot of misinformation on social media, especially like emails. And with the rise of deep fake videos, I've seen, like, a lot of fake videos and images as well. So I think it's growing. Misinformation is growing all over social media.  
David

I feel like with news articles you can have misinformation because obviously the source affects what they say.  
David

social media  
David

I really, like, absolutely news articles have a lot of misinformation, but I really use it most of the time with social media because it's so easy to just see something someone says and go go with it. Like, even sometimes.  
David

I feel like with news articles you can have misinformation because obviously the source affects what they say.  
David

**Situations requiring effort**

when information directly affects me or the people I care about  
Shawn Fawcett

Like it's always something that goes against your views, if it's completely going against your views. The source looks like it's more.  
Paul Huxford

something that affects me directly  
Shawn Fawcett

political and economics, like there's a lot of BS and sometimes it's in the business, but really politics, economics and business. So anything there, I try to get, you know, more informed on.  
Paul Huxford

frances  
Shawn Fawcett

So if I find something, say, like in a social media post about something important that I think is important to verify, it's not sure.  
David

security issues  
Shawn Fawcett

If I have a specific goal or a task in mind, I think of, okay, will this help me achieve that task or will it help me achieve this goal?  
David

major news events  
Shawn Fawcett

when I'm researching a topic while I'm doing my work  
David

If it's something my life depends on  
David

What it comes to doing my assignments  
David

I had some spicy food, and I don't feel good so I looked it up online, and the article said I might have cancer in such scenarios, I would probably look it up with like the utmost time and attention, because I don't think I would have cancer  
David

Right. So I wanted to make sure that this information was valid and still, you know, it had all the facts right.  
David

Now that's the kind of information that is very important to know, then I would put in a lot of effort. I'd make sure I know every single thing that's like that has to do with the task.  
David

Mainly, mainly politics stuff. I feel like I feel like that's the biggest thing I always fact check. Because every place has like polarizing opinions and there's so much happening in such a fast time.  
David

When it comes to my family  
David

I typically take a moment to really think through it, it's important to me or is it just something that I'm consuming passively because of the sake of it.  
David

I think it really depends on how important or consequential that information is to me. If it's a very high priority task, like my example of applying for my work or authorization.  
David

I really care about things like politics and like, what's happening around me, so that's very relevant to me. And I definitely, like, whenever I see something like a breaking news thing, I definitely want to look into it. Like, it's, it's definitely important for me to keep up with things like that, especially.  
David

**Situations requiring less effort**

information that doesn't affect me  
Shawn Fawcett

If it's information that's well-known, like it's everywhere and it's just there, I guess, if it's just information that's just there, I'm like, okay, well, it's a well-known thing.  
Paul Huxford

If it's not important to me  
Shawn Fawcett

Entertainment I don't think, I mean I don't really put a lot. It's not like the information I'm getting in that area has value, like it's not as important if it's if it's not credible.  
Paul Huxford

celebrity rumors  
Shawn Fawcett

I think most of it is usually just making sure.  
David

random internet debates  
Shawn Fawcett

celebrity drama  
David

If it's not interesting to me, if it's just some random information about Selena Gomez breaking up with Benny Blanco.  
David

Like I said, like when the information is very non consequential, like just a post by somebody, some celebrity or if it's, I have nothing to do with my personal life, maybe I wouldn't fact check it too much unless it really piques my curiosity.  
David

So that's probably the main thing that I focus on fact checking. When it comes to other things, it depends on how much I care about it. Like based on my personal interest, if I don't care enough, then I'm probably not going to fact check it.  
David

If it's something stupid, like this sounds funny, but like, if it's something stupid, like, like social media drama between, like, I don't know, maybe this is just me being on Twitter a lot, but there's not a lot of like, comedians and the drama between influencers and stuff. When it's stuff like that, I don't really care about fact checking because honestly at least to me, it doesn't really matter if it's not anything that like, will affect the world or will affect me. And so things like that, like, just like dramatic stuff, like drama, like I don't really check, fact check, stuff like that.  
David

## Emotions

## Emotional reaction to misinformation

amazing because it is a learning opportunity

Olivera Parakh

Sometimes at first I'm like, is this true, is it not? Am I that dumb that I didn't know this before? You question yourself at first

Paul Votholz

hate when people just share things without checking

Olivera Parakh

So misinformation is like draining when you're constantly having to go through it, I feel drained. Like I have spent more energy reading this post than I should have to

Paul Votholz

frustrating

Olivera Parakh

It's just you have to spend more energy thinking about it, and you get tired of you just get tired of it. So, and that's what I don't like about it, that I have to do it, and then it's tiring

Paul Votholz

I typically tend to ignore it

neethi

I sometimes just scroll past it.

neethi

I feel really alerted that I need to be more careful about how I consume information.

Chad

I've definitely felt like victim to that too, because it's like I'm too lazy to look up something.

Chad

I feel annoyed, I would say, because it's not nice to, like, feel like you've been lied to in a sense. I mean, that's a little bit dramatic, but I would say, like, it's mainly just like being like, well, like, damn. Like, I wish I would have, like, gotten the full picture. Like, I don't really like the way that, like, you frame this. I don't know, it's just really annoying.

Chad

you're always going to have to be concerned about misinformation and what their motives are, what their bias is.

Chad

## Response to misinformation

"How do I explain it to someone, that it is actually misinformation?"

Olivera Parakh

Well, I'm not happy about it. I don't like being fed misinformation. So I feel guarded, because I have to review the information with, you know, skepticism

Paul Votholz

"That's a learning opportunity for me and a teaching opportunity for someone else."

Olivera Parakh

So, when I encounter something that is misinformation, potentially, I look at where it is presented and then I go to maybe, if it's from a more right wing website, I look at the left side. If the left website, I look at the right side, or kind of look at the counterpoint/counterpoint

Paul Votholz

curious to find out how it is misinformation

Olivera Parakh

When I encounter something that I feel might be false or false by any chance, I like to find, like a piece of it somewhere else.

Chad

misleads people and causes unnecessary panic

Olivera Parakh

I go and fact-check it online

neethi

If I know for sure it is false, I ignore it

Olivera Parakh

I try to fact-check

neethi

If a friend posted it, I send them a fact-check link

Olivera Parakh

I look it up before saying anything

Olivera Parakh

open up the link, but look up for the actual source

neethi

## Like about fact checking

best way to actually know what is really correct

Olivera Parakh

It's more like an ego thing, you know, like proving others wrong. Like, I was right, I told you so

Paul Votholz

helps to avoid what is incorrect

Olivera Parakh

Well, I like the assurance that the information that I am gathering is trustworthy and factual.

Paul Votholz

helps me feel confident

Olivera Parakh

I think I enjoy the part where I have the control, I feel like I have control when I'm fact checking or knowing what is true and what's not true.

Chad

satisfying when you find the truth

Olivera Parakh

I feel like it kind of enables you to know sources you can trust and information that is correct and it kind of helps you narrow down to sources.

Chad

Chat GPT is something that I like because it's doing my job for me.

neethi

makes me more knowledgeable, makes me more aware.

neethi

And then sometimes I also like to check the credentials, like, see if the author is specialized in the field that the. The article is concerned with, maybe. And just, like, looking for bias through language, too. Like the way that they speak about it, the types of images, that kind of stuff.

Chad

## Dislike about fact checking/challenges

time consuming

Olivera Parakh

Well, for instance, when you're proven wrong, because you're always fighting for your point

Paul Votholz

easy to spread misinformation, difficult to find out the truth

Olivera Parakh

The fact that it's very easy to access it's always very helpful, but I think that's also a negative part of it, that it's so easy to access, because there's a lot put out there

Paul Votholz

its frustrating that people who get caught up in misinformation usually don't want to work towards finding out the truth

Olivera Parakh

The part that I really don't like is how long it can take. Sometimes you just can't find the right source and that's really annoying.

Chad

its annoying that even when you check, some people just refuse to believe facts

Olivera Parakh

it's a lot of work.

neethi

That it's cumbersome and time-consuming.

neethi

It's kind of annoying that you need to, look through multiple sites

neethi

Sometimes, even credible and legitimate sources could be sponsored ads for a certain product, and they might start writing good things about them, but actually, it's not true

neethi

Yes. So like I said, a fact. I dislike the part where it can become a very long process. Like for example, when I was trying to find information related to work authorization, I started off initially on the USCIS website, which is the official website, but then ultimately I had to watch a video to make sure that I was on track because it was taking me too long to figure it out. And once I did that, I was able to go back and like find what I was trying to find.

Chad

It's very tedious. It's a long process. It's tedious, like because there's so much information out there,

Chad

And so it's just like a lot of looking up other resources, a lot of extra reading, a lot of like, just like searching on your own. That can take up a lot of time.

Chad

## Tools and strategies

## Fact checking strategies

**credible and reliable experts from the same field**

David Perdue

Well, I try to look into that when I don't agree with the information given to me. I try to look for information that backs up my own view before I decide to really look into it.

David Perdue

**scientific studies**

David Perdue

If you're interested in it, you're obviously very biased about it as you have an opinion on it. So the first thing you want to do is look around and then you also have to be self-aware that you need to look into the other version as well, the other side.

David Perdue

**credible journalists who have built a track record**

David Perdue

So, when I encounter something that is misinformation, potentially I look at where it is generated and then I go to maybe, if it's from a news right wing website I look at the left side. If the left website, I look at the right side, or kind of look at the counterpart/counterpoint.

David Perdue

**peer-reviewed journals**

David Perdue

So, you know, look for facts. Don't look for people's opinions. Look for facts, like whenever you take news, trying to find something that has as much facts as possible.

David Perdue

**news are checked at multiple sources**

David Perdue

Look at fact checkers or or even even if it's just general news sites checking multiple articles, as saying the same thing and, um, it sounds reasonable based on the content, and at three, like two or three articles, the conclusions are pretty much the same in all three articles, then, you know, that would help with accuracy.

David Perdue

**health-related information is checked with doctors**

David Perdue

Look at fact checkers or or even even if it's just general news sites checking multiple articles, as saying the same thing and, um, it sounds reasonable based on the content, and at three, like two or three articles, the conclusions are pretty much the same in all three articles, then, you know, that would help with accuracy.

David Perdue

**Google**

David Perdue

Well, there, you know, some issues right now in the United States. Dog's claiming that there is a bunch of flood, waste, and about, I believe, 44 states, in the government. There was a report that the subscription service to Twitter, that was like eight million dollars being paid that had had to be unfathomable, the government would be spending \$8 million on that and so I had to be really fact to look around and well ended to see if those reports turned out to be true, and I believe that was turned out to be that was a false claim, that that you know eight million dollars it got wrong actually like that. That was just like, (gives) I would have to say false news. So with this I had to take time and just wait for other reports to come out.

David Perdue

**For photos or videos, I do a reverse image search**

David Perdue

Then I usually go to Google and search for it from news and social media like maybe the New York Times or Washington Post, something like that, where the content is usually authentic and verified.

David Perdue

**for science things, PubMed or other research sites**

David Perdue

I just go through multiple sites, cross-check them, to verify if it's about a person.

David Perdue

**check the credibility of the author**

David Perdue

I go through that person's personal papers, personal messages, or Twitter handles and see if they're posting anything about the situation or if it's government news.

David Perdue

**I started moving towards AllSides Chat GPT, and ask it to verify using the new web-based search, and it gives me a result of not just that the fact confirms information from various sources, and I would validate if the link that I've provided is similar to all the other articles or not.**

David Perdue

So I went to the UCIS website, the official website, to make sure that what I read was correct. I had some background which helped to look for the right information.

David Perdue

**If I think it's important, I would find a solid source, depending on what the information is about.**

David Perdue

I would go to some other source through Google like fact, like I read, some news channels or some article journals depending on what the reading.

David Perdue

**But, like, if it's something, for example, like a news article, I'll go ahead and the link is up on Google and then, like, try to find other articles about the same topic, maybe trying to see, like, what.**

David Perdue

So, like, look up that topic in the article or whatever I'm reading, and I'll look it up on a search engine, right. So I can see multiple different sources about the same thing.

David Perdue

**And like, sometimes I also look at news, too, that the sometimes dates matter with misinformation as well.**

David Perdue

So that way that, then what I do is just look up everything about it and just try to see like, okay, so what's actually true? Like what, what actually makes sense.

David Perdue

**Not about everything, but about certain pieces, especially research funding, and the way I actually the found out that not all of that was true was to looking at the actual the government documents and the information they're putting out as well. But then also looking at actual news articles from different sources rather than just**

David Perdue

## Dealing with conflicting information

**find credible sources that help to figure out the truth**

David Perdue

I would have to go with reputation on that one. Oh, if you know how often have I read something or seen something from them or from that organization that turned out to be untrue.

David Perdue

**refer to scientific papers and experts**

David Perdue

Trump recently gave a speech last week. And it's been because I came across an Instagram post about a fact like, fact checking everything that he was saying. So he it was like Trump was saying this and then the post was telling you like, this is not true. There is no certain information to back this statement up. But like, no it's kind of ironic that, I listened to the speech, didn't really go much thought into whether I believed it or not. Then the next morning I saw a fact checking post about it.

David Perdue

**compare sources**

David Perdue

Look for more sources, because essentially, if you know, two credible sources are conflicting, then, you know, something could be off, so the look for additional sources.

David Perdue

**try to figure out which one has actual evidence**

David Perdue

I wait to see if more reliable sources pick it up.

David Perdue

**I wait to see if more reliable sources pick it up**

David Perdue

Look it up on Google, usually if there is true, then multiple sites are reporting it.

David Perdue

**I then look it up on Google or chat GPT, and then go about it.**

David Perdue

Just.

**I usually just look up, but like, if there's conflicting information, there's probably the multiple things people are saying and it's confusing me. So I'll look up each part of that. Like, like if there's one thing that's confusing and then the other one makes sense to me, I'm still going to look up both of them and check on both of them and see if it's true.**

David Perdue

If you're looking at CNN versus Fox, like, one is more the liberal leaning, the other one is conservative leaning. So it's gonna kind of go towards that way.

David Perdue

**Like, I don't trust what I see on social media unless it comes from a solid channel, like a news channel or maybe a resource that is reliable, like a person who is in the media.**

David Perdue

Like, I don't trust what I see on social media unless it comes from a solid channel, like a news channel or maybe a resource that is reliable, like a person who is in the media.

David Perdue

**There are some sources that have that are known to just put in the correct news, like official sites with official handles**

David Perdue

Like, I don't trust what I see on social media unless it comes from a solid channel, like a news channel or maybe a resource that is reliable, like a person who is in the media.

David Perdue

**If big news company like, BBC, CNN are reporting it**

David Perdue

My way to, like, check validity is just, like, reading other articles or reading other things about it, like, trying to see if I can get a same picture of everything that's happening.

David Perdue

**So kind of. Just immediately believed it too. And then the more I looked into it was off, like, some of it was still true, but I realized like, a lot of it that I had read about it didn't know about. For example, like with the student loans, like, it wasn't going to actually affect people in school. And also it wasn't actually going to be, make you have to pay everything now. And then with the federal funding, I did find out that was to be extended.**

David Perdue

And I immediately start, like, I won't trust what I just learned about the other thing like, if something doesn't make sense, like, I won't trust it anymore if something conflicting comes.

David Perdue

**I think something that helps the trust a source is one of those media sites, clear about where they're coming from, who they work for, what company they work for, that kind of stuff.**

David Perdue

Because you're probably like, this is right. Because I've been following them for a long time and I know they are credible sources.

David Perdue

## Evaluating credibility

**track record**

David Perdue

Or usually like, I believe it more if it's a news article rather than some random influence telling me about something.

David Perdue

**expertise in the area that they are talking about**

David Perdue

It has to be a well-known source to begin with, for example, like I see to come from like, a news article, I guess, but not just like, you know your major news outlets, I trust more, like my local news outlets, like your ABC, CBS, rather than if they're going like CNN or Fox News.

David Perdue

**look for relevant scientific evidence**

David Perdue

It needs to be the transparent about where do they find their sources? And they say, no, this isn't true, but they don't back it up with other reports and other information, then that my opinion is likely to trust that source. So transparency and regulation.

David Perdue

**good track record**

David Perdue

Like what are the sources that you consider reliable, like what you have learned. At school for example, before I joined the master's program here, I remember like looking at articles just on Google and believing everything that was written there. But now I have learned that, like, the research that is published is what we had through Google Scholar.

David Perdue

**cite experts**

David Perdue

Some of the things that I look for is just what my peers and my family trust, people around me trust, my professors trust or, yeah, something like that.

David Perdue

**when they update the info when they are wrong**

David Perdue

Like, I don't trust what I see on social media unless it comes from a solid channel, like a news channel or maybe a resource that is reliable, like a person who is in the media.

David Perdue

**if multiple reliable sources are reporting the same thing, that's a good sign**

David Perdue

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David Perdue

**Depends on how long I've known the source for**

David Perdue

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David Perdue

**like, if they post something about a product or a change or something, I would start believing it right off the bat because I know that it has been a legitimate source for so long, but if the same thing is said in a news channel or a meme page that just came out yesterday, I would not believe that as a credible source.**

David Perdue

Do, like, I immediately believe something like, but then I think about it later and like, how true is that actually? Like, is. Are they really telling the truth? But yeah.

David Perdue

**My way to, like, check validity is just, like, reading other articles or reading other things about it, like, trying to see if I can get a same picture of everything that's happening.**

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David Perdue

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David Perdue

## mitigating misinformation

## Preventative measures

dont go on social media at all

Oliver Parsh

So if it's something that I know that's not typically in my algorithm, it tend to be a little more undecided whether I believe it or not, so then that's when I decide to look more into it, if I know that it's different than what I would usually consume.

Paul Vainio

try to follow reliable sources

Oliver Parsh

I stick to I try to stick to credible sources, I tried to stick with journalist, professional journalist, I tried to stick with news rather than punditry, you know, opinion shows, because those are a little more more slanted and then I don't read the news or go to any social media or anything, logged in, I always clear my cookies and go on privacy mode, so it's kind of like neutral. That way it's my history is not tracked or anything

Paul Vainio

dont rely on social media for news

Oliver Parsh

unfollow or block those things who are spreading misinformation

Paul

there are no preventive measures because unless you look it back up, you're not sure if it's misinformation or not.

Paul

So it's important to hypothesize on it, think about it, question it. So I feel like that's what we should be thinking of when we're thinking of combating misinformation online.

Oliver

Honestly, I feel like I don't take preventative. I mean, I feel like my only preventative measure is just like, knowing that there's misinformation out there, being aware of that.

Oliver

But otherwise, I don't think I really have, like, a solid way of, like, preventing it, I feel like it's really hard to prevent it these days.

Oliver

## Technology solutions

chat GPT

Oliver Parsh

Um, I forgot the name. There's this one website that if you put information in, it will literally fact check it for you, like AI.

Paul Vainio

need clones of all the experts

Oliver Parsh

We were talking about this in class about how AI is used and out full ways, how there is that fact checking AI website that you're able to download or like an app that you're able to download and then like, if you're on a website, it's able to it's able to fact check it for you.

Paul Vainio

need LLMs of certain people

Oliver Parsh

I spent most of my reading time on my tablet, uh, so for like in a browser on my tablet, maybe an extension or something that would provide additional sources more readily. So, like if you had an AI agent that would do a search automatically and present me some sources

Paul Vainio

a website or an application that that only posts like true events, and not just like a known fact,

Paul

all these social media apps must do from now on would be to implement a fact checker right there before the posting option

Paul

It would either automatically stop them from posting if it is going to impact a lot of audience, or it could probably attach something like a community guideline, just the way Twitter adds it,

Paul

I think definitely the one feature that I just talked about, like validating the fact checker authenticity would be nice.

Oliver

Just having something like that implemented into these, into these sites or like articles also maybe just like, I don't know, I guess also like I said before, like, making sure that you actually include other sources, making it like a requirement to show your work. Something like that.

Oliver

It's kind of similar to like when you use AI and you want source, like you want fact checking for what they're giving you.

Oliver

Make search better, so like Google search, when I search now, uh, I Googled like DOGE, it has some AI information, and they're already explaining things and have maybe, you know, like having the history and whatnot, but maybe having a way that, you know, when you do searches, it still protects your privacy, but also gives you control over, like I said before, tuning your level of tolerance for being presented misinformation

Paul Vainio

a tool that instantly highlights if something has been fact-checked

Oliver Parsh

a way to see credibility ratings on articles before clicking on them

Oliver Parsh

something that flags misleading info in real time

Oliver Parsh

maybe AI could help

Oliver Parsh

search engines and social media could prioritize credible sources and downrank clickbait and fake news

Oliver Parsh

So I really wish there was a way that you could say, okay, this is a verified source versus this is not a verified source.

Oliver

So I think if somebody is designing a tool to help combat misinformation, it would be helpful to have all those features that I just mentioned and help people really differentiate between what is real and what is just fake news. And why is that fake news coming out of like, what is the reason for that fake news? That would also be important to know.

Oliver

I'm able to verify when I'm in doubt because I'm not aware of any specific features that allow me to filter out information that is false.

Oliver

Having a clear signage for sources that are valid would be really helpful? Especially like on social media where at different sorts of information come together and it's usually driven by people.

Oliver

## Information presentation improvement

you right click on the statement and there's a question- "why?"

In the end, there should be a scientific paper connected to the statement/s.

Oliver Parsh

fewer misleading headlines

Oliver Parsh

an intervention which would prevent posting misinformation online through the use of AI models

Paul

Less catchy thumbnails. I just don't want the heading to misguide me.

Paul

It should be something which would not allow someone to post misinformation about a particular thing, or attaches community notes to people to the posts that have misinformation with them, rather than having it as a separate standalone feature

Paul

It would also be helpful to be able to trace the path of the information. So where did a certain information begin versus where it ended?

Oliver

So like something like that, where there's some sort of community note, something that like another source, another person, or maybe not a person because that could be too biased, but like some sort of organization that like focuses on, on fact checking or something like that.

Oliver

To just be more truthful. So it would be presented more truthfully, less biased, less acronyms

Paul Vainio

Kind of like I said, something like the community note thing, just like a disclaimer or notice and then also maybe notices. Just telling people to make sure that you, like, do your own research as well. Like, like read this and like at your own discretion. Like, like make sure you actually check with other sources as well.

Oliver

It's like I just want some sort of notice and I think it would help a lot of people just remember to also make sure to look at other things and not immediately believe what you're seeing. So people use more of their critical thinking skills.

Oliver

More, like, on the government's part, more regulations on who says what, like who has the power to give you information. Like on TikTok there's always somebody trying to give me information, but like, why do you have that platform to give me that information?

Paul Vainio

I feel like, the links of like a YouTube video or a TikTok video, Instagram, like, they're giving you information. There should always be links attached to back that information up, but like, reliable sources backing that up, attached to it, not just like a wikipedia or anything like that, you know? Like a study. Like, I feel like that should be mandatory when somebody's giving information online, that their resources are attached to it as well.

Paul Vainio

I think it comes back to the source and who we give that platform to, to be able to give us online information. The online information should be given by experts that are talking about a certain topic that they want to talk about, not just a random person.

Paul Vainio

I don't know if disclaimers are the right word, but like, like some sort of notice on, on these articles and on these like papers, just like making sure people

Oliver