

***More than fabricated news reports:
Children's perspectives and experiences of fake news***



Peer-reviewed article

Citation: Vartiainen, H., Kahila, J., Tedre, M., Sointu, E., & Valtonen, T. (2023). More than fabricated news reports: Children's perspectives and experiences of fake news. *Journal of Media Literacy Education*, 15(2), 17-30. <https://doi.org/10.23860/JMLE-2023-15-2-2>

Corresponding Author:

Henriikka Vartiainen
henriikka.vartiainen@uef.fi

Copyright: © 2023 Author(s). This is an open access, peer-reviewed article published by Bepress and distributed under the terms of the [Creative Commons Attribution License](#), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. JMLE is the official journal of [NAMLE](#).

Received: September 27, 2022

Accepted: January 5, 2023

Published: July 28, 2023

Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

[Editorial Board](#)

Henriikka Vartiainen

University of Eastern Finland, Finland

Juho Kahila

University of Eastern Finland, Finland

Matti Tedre

University of Eastern Finland, Finland

Erkko Sointu

University of Eastern Finland, Finland

Teemu Valtonen

University of Eastern Finland, Finland

ABSTRACT

This study explores what kinds of social media services children use in their everyday lives, how children describe their strategies for spotting fake news, and what kinds of fake news they report having encountered in their lived experiences. The article is based on an online questionnaire conducted in Finnish comprehensive schools with children and young people (N = 167) aged 12–15. The results show that children are active users of various social media services and that they accessed social media every day. Children perceived fake news as much more than fabricated news reports and weaved these reports together with ordinary lies, rumors, and false information shared in the form of links, videos, posts, messages, and stories. Children recognized that fake news can be produced and shared by anyone with various intentions, including financial and ideological gains, but also personal gains of digital capital, causing confusion, cheating, pranking, and bullying. Children provided examples of various kinds of myths, rumors, and false information spreading in their online communities. Notably, children typically described fake news in terms of its believability and intentions, but deeper-level evaluation strategies, such as the evaluation of the quality and consistency of evidence, were much less discussed. The results contribute to the body of literature by providing children's perspectives regarding the complex problem of fake news and signal the need to develop pedagogical approaches that help children to better understand the basic mechanisms of machine learning, including tracking and profiling, behavior/attention engineering, and psychometrics-based advertising.

Keywords: *fake news, social media, media literacy, media education.*



INTRODUCTION

Fake news is an old phenomenon. Its latest reincarnation, which put the problem of ‘fake news’ on the agenda all over the world, is linked to misinformation around the 2016 US Presidential Election and the Brexit Referendum in the UK (Allcott & Gentzkow, 2017; Lazer et al., 2018). In addition to politics, there have been various targeted campaigns spreading demonstrably false information on a range of subjects, from immigration and ethnic minorities to vaccinations and climate change, among many other things (Kapantai et al., 2021). More recently, the spread of misleading information and conspiracy theories about the COVID-19 pandemic has led the World Health Organization (2020) to warn of an ongoing ‘infodemic’ that includes deliberate attempts to disseminate false information on social media. All these developments have raised significant democratic concerns about the quality of the information that people receive and are exposed to in their everyday lives.

As teens and children are active users of social media services, fake news is a serious problem for children and young people as well (National Literacy Trust, 2018). Accordingly, the aim of this article is to gain a deeper understanding of children’s and youths’ perspectives on and lived experiences of fake news. The article is based on an online questionnaire conducted in a Finnish comprehensive school in fall 2021 with children and young people ($N = 167$) aged 12-15. The spread of misleading information and conspiracy theories about COVID-19 received considerable media attention in Finland during the COVID-19 pandemic in the fall of 2021. When Finland started rolling out coronavirus vaccinations to children and young people aged 12 and above, a parallel campaign of anti-vaccination disinformation began targeting this age group through social media channels (YLE News, 2021). These unforeseen anti-vaccination campaigns also created an urgent need to understand how children and youth approach and experience fake news in their everyday lives in Finland. This article first introduces the problem of fake news and previous research on how people evaluate the credibility of online content. This is followed by the research methodology, the empirical results, and an analysis that illustrates what kinds of social media services children and young people use in their everyday lives, how they describe fake news and their strategies for spotting it, and what kinds of fake news they report having encountered in their lived experiences. The article concludes with a discussion of

how to develop media education that takes into account children’s lived experiences with fake news.

PREVIOUS RESEARCH

The problem with fake news

Fake news has several definitions. For example, in their research on fake news reach during the 2016 US elections, Allcott and Gentzkow (2017, p. 13) defined fake news as ‘news articles that are intentionally and verifiably false, and could mislead readers.’ Similarly, Lazer et al. (2018, p. 1094) defined fake news as ‘fabricated information that mimics news media content in form but not in organizational process or intent.’ While fake news is typically made to imitate the visual appearance of fact-based news (Nelson & Taneja, 2018), Nielsen and Graves (2017) noted that from the audience’s perspective, the difference between fake news and non-fake news is seen as one of degree rather than as a clear distinction. In their study in the US, UK, Spain, and Finland, they found that people more frequently identify poor journalism, propaganda, and some kinds of advertising as being fake news than as being false information designed to masquerade as news reports (Nielsen & Graves, 2017).

Allcott and Gentzkow (2017) have argued that the production of fake news is generally motivated by financial or ideological gains. First, fake news is often disseminated for the sake of earning money from clicks and views. The second motivation is ideological, such as the dissemination of political propaganda (Allcott & Gentzkow, 2017). Allcott and Gentzkow (2017) have further argued that there is a market for fake news because it is much cheaper and faster to produce than accurate news, and because reporters, editors, and fact checkers are not needed. While printed news used to be expensive to produce and distribute, social media has had tremendous effects on the production, speed, scale, and circulation of targeted (mis)information across online media platforms (Allcott & Gentzkow, 2017; Lazer et al., 2018). Moreover, the ubiquitous availability of easy-to-use software for editing and manipulating digital images, videos, and other content has dramatically decreased the time, cost, effort, and skill required to fabricate convincing visual forgeries, according to a study by Shen et al. (2019) in the US.

Research has shown that fake news diffuses significantly farther, faster, deeper, and more broadly than news considered to be reliable (Vosoughi et al., 2018). An important facilitator of that distribution speed

is that many consumers prefer to access news from a third-party operated, algorithm-driven platform (Martens et al., 2018). This shift from a curated newspaper or relatively stable news portal to an algorithm-driven, constantly co-evolving stream of news represents an important structural change in the new media ecosystem, as each user gets their personal media feed tailored for them, instead of editors choosing broadcasted content for everyone (Tufekci, 2015). The data needed for adaptive media content, attention engineering, and all other personalized services come from unobtrusive tracking of users' daily actions and interactions, which also enables massive-scale profiling (Zuboff, 2015). To maximize users' engagement with the news streams, the platforms combine user data and build user profiles that are statistically compared against thousands, millions, and hundreds of millions of other user profiles to enable modeling and prediction (Barbier & Liu, 2011). Massive-scale data collection means that psychologically optimized interventions can now be applied to millions of individuals inexpensively, quickly, and unobtrusively (Matz et al., 2020).

What is more, previous research has revealed that users tend to prefer information that confirms their preexisting beliefs and worldviews (Bessi et al., 2015; Metzger et al., 2010; Pennycook & Rand, 2021). Social media users form homogeneous communities in which individuals are largely exposed to conforming opinions of like-minded others (Del Vicario et al., 2016). For example, Del Vicario et al. (2016) explored the spread of scientific and conspiracy-theory stories and showed how social homogeneity is the primary driver of content diffusion, and most of the time the content comes from a friend belonging to a similar-minded group. Moreover, when a post is accompanied by many likes, shares, or comments, it is more likely to be further liked, shared, or commented on, and thus may lead to the propagation of unverified information (Tandoc et al., 2018). Recently, so-called social bots (automated accounts impersonating humans) have been used to magnify this self-fueling cycle and the spread of fake news by liking, sharing, and searching for information (Lazer et al., 2018).

By examining how 10.1 million U.S. Facebook users interact with socially shared news, Bakshy et al. (2015) found that while users may be exposed to viewpoints that contradict their earlier beliefs, they are more likely to click on news that is in line with their existing views. It has also been argued that misinformation is more common in subpopulations that are more vulnerable to accepting inaccurate content than it is in social media in

general (Pennycook & Rand, 2021). Moreover, fake news is increasingly spreading through multiple media formats, including photo, video, and audiovisual forgeries. To further complicate the matter, Miller-Idriss (2018) noted that extremist movements have adopted humor and irony in their visual and ideological propaganda. The new kind of 'packaging' or re-coding of extreme ideas challenges our understanding of how harmful content spreads as well as how it bleeds into mainstream youth culture in new ways (Miller-Idriss, 2018).

Recognizing fake news

As the problem with fake news has escalated, there has been a growing interest in studying how people evaluate the credibility of sources in complex new media landscapes. For example, Metzger et al. (2010) have argued based on their study in the US that web users have adopted various cognitive heuristics to minimize their cognitive effort and time. These cognitive heuristics include the evaluation of reputation (e.g., whether the source is an official authority, such as a nationally recognized news organization), endorsement (e.g., whether the source is recommended by known others), consistency (e.g., whether the information is validated across different sources), self-confirmation (e.g., whether it confirms preexisting beliefs), expectancy violation (e.g., whether a website fails to meet expectations in some way, such as having grammatical errors), and persuasive intent (e.g., negative attitudes toward commercial information). Metzger and Flanagin (2013) have pointed out that cognitive heuristics are compelling factors and that the motivation for using them is probably affected by the consequentiality of the information sought by the information seeker. In other words, information of greater consequence (e.g., health or financial information sought to make a decision) often gets scrutinized more systematically, while information of lesser consequence (e.g., entertainment information) is subjected to more heuristic processing. Research has also shown that people who engage in more (and/or better) analytical reasoning are more likely to accurately reject false content (Pennycook & Rand, 2021; Ross et al., 2021).

Previous research has found that youth struggle to effectively evaluate online claims, sources, and evidence, as they lack the skills to distinguish reliable from misleading information (McGrew et al., 2019). For example, a large-scale study by McGrew et al. (2019) in

the US, including 405 middle school students, 348 high school students, and 141 college students, found that students rarely asked who created online sources, rarely made judgments about trustworthiness based on factors like the content of a post or surface features of the page, and rarely ventured outside the webpage on which they landed. Similarly, Head et al. (2019) found in their online survey of nearly 6000 college students in the US that today's students are 'multimodal' and 'multi-social' news consumers whose news environment is constantly influenced by a broad mix of social cues and digital nudges from peers, professional media organizations, marketers, platforms, algorithmic recommendation engines, and countless unidentified online networks. In such a complex media landscape, many students lacked confidence in discerning 'real news' from 'fake news' (Head et al., 2019). In the UK, a survey including 388 primary school students, 1832 secondary school students, and 414 teachers concluded that only 2% of children and young people have the critical literacy skills to discern truth from fake news (National Literacy Trust, 2018). Moreover, the study found that children from disadvantaged backgrounds were the least likely to spot fabricated or misleading content, signaling inequality that makes some children more vulnerable (National Literacy Trust, 2018).

As a response to the problems with fake news, many different stakeholders have invested significant resources in developing media literacy education and programs (Bulger & Davison, 2018). Although media literacy is difficult to define as a concept, it has traditionally been referred to as the ability to access, analyze, evaluate, and create media messages in a variety of contexts (Aufderheide & Firestone, 1993; Potter, 2013). In addition, recent definitions of media literacy education tend to emphasize critical thinking, such as what constitutes the new media, how and why media messages are constructed, and how they can be used for different purposes (Kafai et al., 2018; Potter, 2013). According to Hobbs and Jensen (2013), the purpose of media literacy education is to educate informed, reflective, and engaged participants and contributing members for today's world.

As a part of media literacy education, there have been intensive educational efforts towards promoting school students' news literacies and their ability to distinguish real news from fake stories. For example, Braasch et al. (2013) studied Norwegian secondary school students' source evaluation strategies and found out that young people can benefit from educational support. These strategies involve evaluating authors'

intentions and expertise by considering their credentials, affiliations, positions, and motivations (Braasch et al., 2013; also see Bråten et al., 2018a). Furthermore, they entail paying attention to source features such as the publishing venue, document type, and publication date (Braasch et al., 2013). Evaluating the nature and quality of evidence used by authors and verifying the accuracy of statements from other sources are additional aspects considered in these strategies (Braasch et al., 2013; also see Bråten et al., 2018b). Although some media literacy interventions have shown promise in teaching advanced evaluation strategies of the above kind (e.g., Bråten et al., 2019; McGrew et al., 2019), little is known about what kinds of fake news children actually do encounter in their everyday lives. The current study addresses this gap in the literature by asking the following research questions with regards to a sample of 167 children and young people from Finnish comprehensive schools:

1. Which types of social media do the children use in their everyday lives?
2. How do the children describe their strategies for spotting fake news?
3. What kinds of fake news have the children recognized in their everyday lives?

MATERIALS AND METHODS

Participants and procedure

This study was conducted in one comprehensive school in Eastern Finland in the fall of 2021 when misinformation about the COVID-19 pandemic was a topical issue. In Finland, comprehensive schools provide general basic education from the first grade to ninth grade, starting when children turn seven years old. Finland, like many other countries, has included media literacy in the national core curriculum for basic education. Competences related to media literacies are included in the curriculum across different subjects and are part of transversal competence areas, such as "multiliteracy" and "information and communication technology" (ICT). In this study, the convenience sample ($N = 167$) included students aged 12-15, and before the study, permission for research was obtained from the school administration. Students and their guardians were informed about the aims of the study, data collection, use of results, voluntary participation, and their right to withdraw. Moreover, the participants were prompted to confirm their informed consent prior to proceeding with the study. All participants granted their informed consent to use the data that were to be collected.

The data were collected anonymously using an online questionnaire, which was divided into two sections. The first section measured the use of social software applications. For this purpose, the respondents assessed their use of 13 applications using the scale: 1) I do not know the application; 2) I know the application, but almost never use it; 3) I use it rarely; 4) I use it weekly; 5) I use it daily; and 6) I use it several times a day. The list of applications was compiled by a team of experts in the field. Along with the list of applications, the respondents could also say if they were active users of some application(s) that were not listed. Only a few additional applications were occasionally mentioned.

The second section contained open-ended questions. Those questions focused on youths' own 1) definition and identifying of fake news, such as "What, in your opinion, characterizes fake news?", "How can you identify fake news?", "Who do you think makes it and why?", and "Where or from whom have you received information or advice about fake news (e.g., teacher, parents, friends, media)?" 2) encounters with fake news, such as "Where and when have you recently heard or seen news or other media content that seemed unreliable?", "What was it about?", "Who shared it?", and "How did that make you feel?"; and 3) perceptions of what they wanted to know about fake news, such as "What would you like to know or ask about fake news?". At the request of the school administration, no demographic data other than age were collected.

Data analysis

Statistical analysis. To investigate how actively individual applications were used, we used the mean (M) and standard deviation (SD) as descriptive statistics. Moreover, in order to better understand the use of applications, we used principal component analysis (PCA; Varimax rotation) to group the applications based on the similarities in the use activities. PCA was used to explain the maximal total variance (see, e.g., Field, 2018). To evaluate the PCA structure, we used the Kaiser–Meyer–Olkin (KMO) procedure, Bartlett's test of sphericity, eigenvalues (with scree plots), and the amount of variance explained. Generally, a KMO between 0.7 and 0.8 is considered good and indicates distinct, reliable components and an adequate sample size. A significant result from Bartlett's test ($p < .01$) should indicate that the correlations between variables differ significantly from zero. Eigenvalues (with a scree plot) higher than 1 indicate a distinct individual component structure. The results of the component analysis were confirmed by investigating Cronbach's alpha (α) for internal consistency (i.e., reliability). For the α -level investigation, we used the commonly used alpha level $\alpha < .6$ to indicate adequate internal consistency. Based on PCA, the mean sum variables were calculated in order to describe the activity of use for each application component.

Table 1. *Codebook*

Category	Code	Definitions
Content features	Believability	Personal opinion regarding whether or not to believe the content information provided (Braasch et al., 2013)
	Format/style	Assessment of the format or style (Braasch et al., 2013)
	Explanation quality	Assessment of the nature and quality of explanation (Braasch et al., 2013)
	Consistency	Assessment of whether the information is validated across different sources (Metzger et al., 2010)
	Topic	Impression of the topic of the fake news
Source features	Author	Consideration of the author that makes the fake news (cf. Braasch et al., 2013)
	Intentions	Consideration of the author who created the content and for what purpose (Braasch et al., 2013)
	Venue	Consideration of the site or service in which the content was published (Braasch et al., 2013)
	Media	Consideration of the media in which the content was published
	Sender	Consideration of who sent or shared the content
Other	No knowledge or answer	Answer indicating that the respondent does not know the answer or is not responding at all

Qualitative content analysis. Responses to open-ended questions were analyzed using qualitative content analysis. A deductive coding scheme was applied and developed based on the two dimensions of source evaluation identified by Braasch et al. (2013). All responses were first coded using Atlas.ti software. To assess interrater agreement, 25 out of 167 (14.97%) responses were selected using maximum variation sampling to test the coding scheme in a variety of responses in which children described fake news in their own words. Once another coder had coded those responses, a coding comparison test was done on Atlas.ti. Acceptable levels for percentage of agreement (92%) and Krippendorff's α (0.87) were obtained in the first round of coding, yet minor disagreements were discussed and small changes to code definitions were made. Table 1 presents the final codebook.

RESULTS

The use of social software applications

Table 2 shows how actively respondents used different applications. YouTube, WhatsApp, Snapchat, Instagram, and TikTok were very actively used, typically on a daily basis. Facebook, Twitter, and Messenger were known but used only rarely, and applications like VK and Signal were unknown for most of the respondents. However, the high *SDs* for certain applications, such as TikTok ($SD = 1.84$), Discord ($SD = 1.67$), and Snapchat ($SD = 1.54$), indicate strong variations among the respondents.

In order to better understand the differences among respondents – the high *SD* values – PCA was conducted (see Table 3). The appropriateness metrics for PCA were adequate ($KMO = 0.73$, Bartlett's < 0.01 , and eigenvalues > 1). Based on the PCA results, three components were extracted and named as: 1) *Image and Video Sharing Apps*, 2) *Gamer Apps*, and 3) *Oldies and Rare Apps*. PCA explained almost 53% of the cumulative variance.

The *Image and Video Sharing Apps* group contained Snapchat, Instagram, and TikTok (i.e., those who used one, typically used the other two). The *Gamer Apps* included Reddit, Discord, YouTube, Twitter, WhatsApp, and Tumblr (again, users of one app in the group were typically also users of one or more of the others). The third component, *Oldies and Rare Apps*, included Messenger, Facebook, Vkontakte, and Jodel. WhatsApp and Twitter loaded for two components. The

communality value of WhatsApp was almost equal in *Image and Video Sharing Apps* and *Gamer Apps*. This indicates that WhatsApp was used actively by nearly all respondents.

Table 2. Descriptive statistics on the use of applications

Application	<i>M</i>	<i>(SD)</i>
YouTube	5.15	(1.03)
WhatsApp	5.08	(0.98)
Snapchat	4.97	(1.54)
Instagram	4.61	(1.45)
TikTok	4.49	(1.84)
Discord	3.35	(1.67)
Twitter	2.45	(1.10)
Facebook	2.41	(0.86)
Reddit	2.23	(1.19)
Messenger	2.14	(0.80)
Jodel	1.79	(0.79)
Tumblr	1.65	(0.78)
VK (Vkontakte)	1.23	(0.80)

M = Mean value, *SD* = standard deviation

Table 3. PCA results, and the sum variables for *M*, *SD*, and α

	Component		
	1	2	3
Snapchat	0.85		
Instagram	0.84		
TikTok	0.78		
Reddit		0.76	
Discord		0.74	
YouTube		0.74	
Twitter		0.49	
WhatsApp		0.45	
Tumblr		0.31	
Messenger			0.72
Facebook			0.70
Vkontakte			0.56
Jodel			0.53
Initial eigenvalues	3.06	2.30	1.51
Cumulative % variance	23.56	41.26	52.87
Sum variables based on PCA			
Cronbach's α of the sum variable	0.81	0.68	0.59
<i>M</i> of the sum variable	4.75	3.32	1.88
<i>SD</i> of the sum variable	1.36	0.71	0.52

PCA = Principal component analysis, *M* = Mean, *SD* = standard deviation

In order to assess the activity of use for each component, sum variables for each component were calculated. The *Image and Video Sharing Apps* group contains the most actively used apps. The apps in the *Gamer Apps* group were also actively used, but there were big differences between apps within the group.

Spotting fake news

Content-based features. When asked about their conceptions of and perspectives on fake news, many respondents described fake news from the perspective of *believability* (81 mentions). In children's own words, fake news was typically described as suspicious, unconvincing, unreal, false, and incorrect. Moreover, words like 'useless' were used by many children, and they wrote that fake news did not sound real or feel right: 'Fake news is useless; it can be spotted by things that don't sound real.' Also, the word 'stupid' was attached to fake news and its creators: 'Fake news is stupid. Even its makers are stupid. Why does anyone do it?'

Children also described fake news in terms of *format and style* (29 mentions). Children mentioned that fake news typically contains clickbait headlines: 'Fake news has a catchy title, but the content of the news does not match it.' Some wrote that the topic of fake news may sound provocative or sensational: 'Often fake news is made to sound as shocking as possible, so most of it sounds like an exaggeration.' Grammatical errors were mentioned: 'Sometimes it can be spotted by bad spelling, because they don't always invest in making it.' It is worth noting that while many of the children wrote that provocative or sensational fake news is easy to spot, others pointed out that fake news may sometimes be difficult to recognize if one lacks subject expertise:

Fake news is exactly what the name says – news that is not true, that is, invented stuff. Fake news can even be difficult to identify, especially if the topic is unfamiliar to you. Some of it can be spotted by there being something really strange or typos in the title. However, with some you have to start seeking information yourself.

Explanation quality (17 mentions) was reflected on by some of the children. Children described that fake news is one-sided or opinion-based and emphasized evaluating the type and quality of references that news content relies on. In the children's descriptions, fake news could sometimes be recognized for its lack of references: 'On Instagram, I'm not quite sure who shared it, but I've seen a lot of misinformation there ... information for which there are no clear references.'

Some children considered expert statements to be important for the quality of evidence in news: 'I think a fake news story is one that tries to get a large crowd to believe this fake news that isn't even true and, for example, there isn't a health expert's report if it's some health fake news.' Some children talked about *consistency*, or whether the news can be validated across different sources (10 mentions): 'Sometimes it can feel surprisingly real, but if it contains any unreliable information, you can check it from sources you trust.'

Source-based features. In terms of *author* (17 mentions), a lack of information about the creator of the news content was mentioned: 'Fake news usually appears on unreliable pages and does not always mention who made it.' Some children recognized how 'anyone can make fake news.' One respondent mentioned that children may also create fake news: 'Personally, I recognize it through a bad argument or explanation or a trend. Many children make it and maybe also some older ones.' Some children mentioned professional actors: 'Who makes it? Like, some magazines and social media users. Mostly it is made to get people to buy their magazine, product, or so, or click on their content, so they could get money.' A number of children recognized financial gains and commercial intent in their reasoning about the production of fake news.

In addition to money, children mentioned several other *intentions* behind fake news (62 mentions). Ideological gains were one common mention: 'False content about some popular topic such as the coronavirus or the American Presidential Election. Those seem unreliable. They are made to influence people's opinions.' While the research literature often discusses financial and ideological gains, these children also discussed other intentions behind producing fake news. Several children wrote about non-financial personal benefits, such as social capital by gaining followers, attention, and reputation on social media: '[...] usually just trying to capture clicks, followers, or attention.' Also, cheating was mentioned: 'In games they often offer free "free widgets." Those links are usually shared by people either for money or for passwords.' Children wrote about deliberate intentions to raise fear or cause confusion among youth: 'They try to make people fear and panic and they cause confusion. Young people think it is true, share this false news in their MyStories, and as a result, others begin to feel fear.' In addition, children mentioned that fake news could be made just for fun, for pranks: 'Fake news is made by some people for their own pleasure or as a joke

for others.’ Children’s descriptions of the motives behind fake news production mentioned bullying, too: ‘Someone spreads it and then it travels to the ears of others. Someone wants to bully others.’

In terms of *venue* (14 mentions), children wrote that fake news can be spotted by carefully evaluating sources: ‘Jodel and Reddit. Those apps are known for gossip and fake news, so I check the news from them with pretty little reliability.’ While some sources were named to be untrusted in principle, new sites were approached with suspicion by some children. For example, one child wrote that suspicion was necessary ‘...if that website is one that I haven’t heard of and it looks unreliable.’ In terms of *media*, some respondents mentioned that fake news may be made to look like a factual news story, but children typically link fake news with multimedia content: ‘Fake news is usually links and videos.’

What is more, a few children paid attention to who was *sending or sharing* fake news (3 mentions). For example, one child considered it alarming if the message was ‘...unconvincing and the sender is suspicious.’ Similar to how children recognized that anyone could create fake news, they recognized that anyone can also spread it:

In Snapchat and in TikTok. It is shared by ordinary people who do not know source criticism and believe everything. I was in a bad mood when I saw misinformation disseminated and I knew that because it is being shared, more and more people will believe it even if they should not.

Friends were mentioned, too: ‘It came across in Snapchat. It was shared by my friend. They got a bit worried, but at the same time I knew that it was fake news for the most part.’ Many children were concerned about fake news and felt bad when friends were spreading it. According to children, fake news can spread in schools: ‘I heard from my friend at school. This content disgusted and irritated me because fake news should not be invented about such things.’

As the quotes above indicate, children presented various features of fake news and connected fake news to various aspects of their daily lives. Moreover, 55 children presented more than one feature in their descriptions of how to spot fake news. These features were typically presented as compelling factors:

I think fake news is news in which the information presented is false. The false news is spotted by the fact that it does not, for example, tell you what research the information is based on or otherwise does not have a reliable reference. Moreover, information is also not usually found elsewhere. False news is

made by people who want to drive their own agenda or get attention.

When children were asked where they had received guidance for spotting fake news, the children typically named school (67 mentions), parents (43 mentions), friends (25 mentions), and media (40 mentions). Many of the children felt that they had been guided and advised by multiple sources, and this advice typically told the children not to believe everything: ‘My parents told me not to believe everything and I heard the same from school as well.’ What is more, the evaluation of sources, their credibility, and consistency across media were emphasized in some children’s descriptions of guidance:

I’ve received information about fake news from my parents, teachers, friends, the media, grandparents, and a little bit everywhere. For example, I need to check news from at least two different sources before I am sure whether the news is true or false.

Some children mentioned having been guided by other people online, such as other gamers in their game communities, such as other players in the CS:GO videogame.

Facing fake news

Children gave a broad variety of examples of fake news *topics*. More than half of the children ($N = 89$) had not seen fake news very recently. Many of those children elaborated that they have not spotted fake news because they do not read news at all. One respondent described ignoring suspicious content as always being an option: ‘I do not remember. If I see something that seems suspicious, I don’t watch it :D.’ Yet, still a significant number of children ($N = 74$) named one or more media platforms or services where they had recently seen something that they defined as fake news. Fake news was most often encountered in TikTok (36 mentions), and some children wrote that they faced fake news every day: ‘Every day in TikTok ... and it is shared by some anonymous people.’ Other mentions were Snapchat (14 mentions), Instagram (9 mentions), Reddit (4 mentions), school (3 mentions), YouTube (3 mentions), Jodel (2 mentions), Google (2 mentions), games (2 mentions), Twitter (1 mention), Discord (1 mention), and tabloid news sites (1 mention).

Unsurprisingly, as the study was done when the COVID-19 pandemic was still a threat, COVID-19/coronavirus was the most commonly mentioned fake news topic (27 mentions). Coronavirus-related fake

news included conspiracy theories around COVID-19 and even about its existence. Moreover, children had encountered ‘anti-vax’ fake news content aimed at propagating vaccine hesitancy and rejection: ‘You will get cancer if you take the COVID-19 vaccine.’ Children had spotted vaccination-related fake news in the form of Snapchat stories and TikTok videos. One child had taken action against the spread of fake news: ‘In TikTok, someone said that the COVID-19 vaccine will kill you, so I reported it for spreading false information.’

In addition to COVID-19, children’s descriptions of fake news that they had encountered included rumors and false stories about individual persons (15 mentions). While rumors are not considered fake news in the literature, children described rumors about celebrities – ‘Lives of celebrities and scandals. Lots about the Kardashians, pop singers, actors, TikTok stars, and so on.’ – and they paralleled fake news with gossip about ordinary people: ‘Lots of information is shared about people that is not even true, so I think it is wrong.’ Fake content involved politicians, such as the Prime Minister of Finland: ‘It was about Sanna Marin [the Prime Minister] and bitcoins. I immediately realized that this was fake news.’ Children’s responses indicated that there are rumors about the youth themselves: ‘I think most of it is about youth.’ Moreover, spreading rumors was also connected to school, as one child answered: ‘In our group, there are rumors about our teacher. For example, some say that our teacher is malicious, but he really isn’t. I always feel bad when I listen to my friend say something bad about another person.’ As the quotes indicate, children saw that fake news can involve rumors used to shame or harm other people, and they thought that it was wrong to spread such news.

In addition, children wrote about game-related content (5 mentions), such as false information about upcoming updates or about gameplay: ‘There was a video on YouTube shorts where someone made a secret potion in Minecraft, but it was fake.’ Two children had also seen conspiracy theories about the allegedly malicious origins of children’s TV shows: ‘I have heard various stories about the original purposes of children’s TV shows. I saw them yesterday on TikTok.’ Children sometimes described, as fake news, some news items that were real: ‘I was told that Microsoft plans to buy Discord for millions of dollars’ (this was true: the

companies were in talks about an acquisition for at least \$10 billion).

Some individual responses described how children had been exposed to dark and depressing content that served some ideological purposes. For example, one child reported a story that exaggerated climate change: ‘There was news in Snapchat MyStory that said that the climate change will destroy the planet within six months.’ Another reported seeing similar content on YouTube: ‘For example, I saw on YouTube that the world would end in 2050.’ One child was exposed to suicide-related fake news. Drug-related content was mentioned by one respondent: ‘One Snapchat MyStory was that cannabis would be legalized [in Finland]. I don’t know if it’s true or not.’ Children had seen extremist propaganda in Reddit – one described content related to an Islamic movement: ‘For example, I often see a lot of Taliban propaganda in different subreddits,’ and another mentioned alt-right content: ‘TikTok, and Twitter in particular, has all sorts of shit, such as crying by the far right and outrageous, maybe dangerous interference in the lives of others. And TikTok users are quite young.’ Children who mentioned extremist fake news were concerned about how extremist groups are present in the services that young people actively use. Then, one child further elaborated on how and why several other kinds of hate messages are spreading online:

Racism, sexism, politics, homophobia, really everything you can imagine. You can find disinformation, especially if you look for it. For the most part, disseminators are just ordinary people who invent or exaggerate research findings in order to justify their own (stupid) opinions.

DISCUSSION

This study aimed to explore what kinds of social media services children use in their everyday lives, how children describe their strategies for spotting fake news, and what kinds of fake news they report having encountered in their lived experiences. The combined results of the study provide insights on how children access news and how they describe fake news in terms of source and content features. Figure 1 summarizes the children’s insights on fake news.

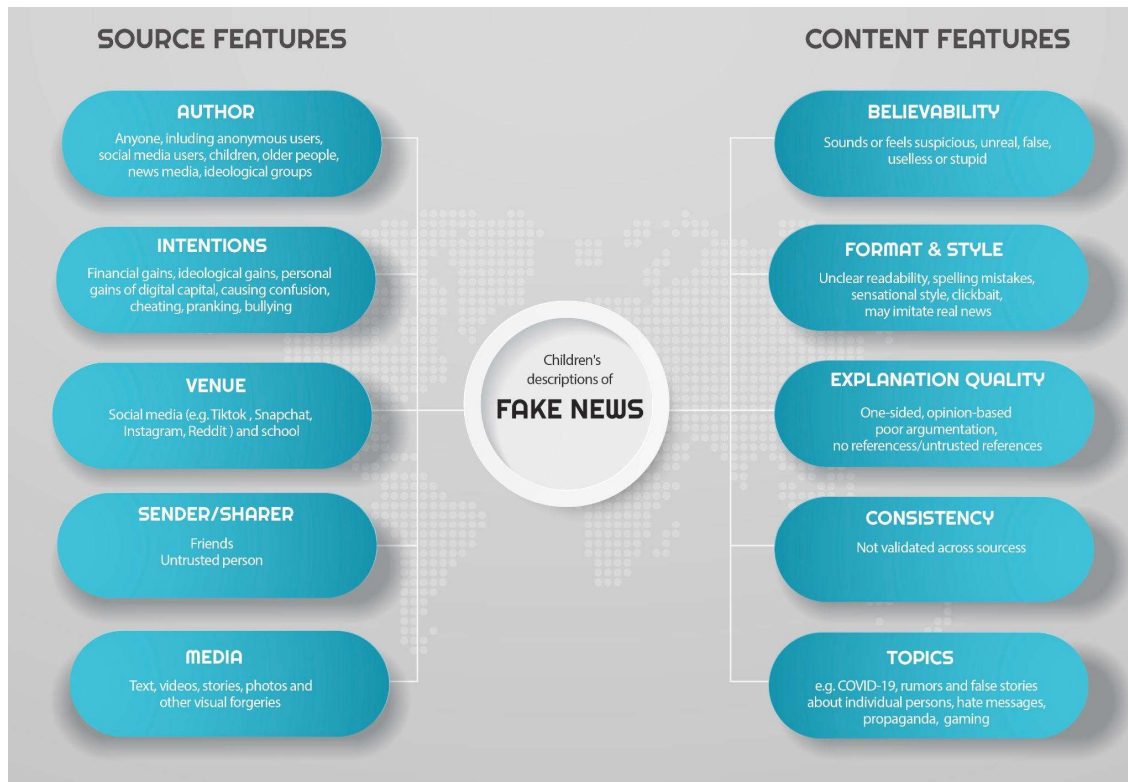


Figure 1. Children's perspectives on fake news

Regarding the first research question – ‘Which types of social media do the children/youths use in their everyday lives?’ – the results show that the number of actively used apps and services is rather limited. But despite their small number, those apps and services – most prominently YouTube, WhatsApp, and Snapchat – are actively involved as part of children’s lives, and they provide those who wish to influence the children a direct channel through which to reach the children. The two components of the actively used software – *Image and Video Sharing Apps* and *Gamer Apps* – reflect different purposes for the software use. Software such as TikTok and Discord are designed for different purposes, suggesting possibilities for targeting different user groups with different preferences.

Regarding the second research question – ‘How do the children/youths describe their strategies for spotting fake news?’ – the results showed that the respondents were familiar with the term ‘fake news.’ They had various interpretations of what constitutes fake news, and they named different strategies they could use to spot fake news. Children were typically critical toward content that they encountered in social media services and the web, and they talked about fake news in terms

of its believability and intentions. Children reflected on fake news formats and their distinct presentation styles, including clickbait, sensationalism, and poor readability – and they discussed explanation quality in terms of argumentation and references that the news relies on. However, the results revealed that children perceived the fake news phenomenon as much more than just fabricated news reports: In children’s descriptions, those were woven together with ordinary lies, rumors, and false information shared in the form of links, videos, posts, messages, and stories. Children recognized that fake news can be produced by anyone, and they mentioned financial and ideological gains that are typically highlighted in the research literature (e.g., Allcott & Gentzkow, 2017). However, children also attached other intentions to the production and dissemination of fake news, such as personal gains of digital capital, causing confusion, cheating, pranking, and bullying. The responses suggest that themes that are traditionally related to cyberbullying (Slonje & Smith, 2008) are also perceived as fake news in children’s experiences. The ways in which fake news is used for denigrating political opponents in the world of adults are not very different from bullying and intentionally

causing embarrassment or humiliation in the world of children.

Despite the children's critical stance toward the fake news phenomenon at a surface level, deeper-level evaluation strategies, such as the evaluation of explanation quality (Braasch et al., 2013) and consistency (Metzger et al., 2010), were much less discussed. While some students emphasized evaluating the type and quality of references, there was hardly any specification of what kind of references they considered to be qualified or what the relationship is between the content provided and cited references. Likewise, only ten respondents mentioned consistency as a credibility evaluation strategy. Furthermore, deeper credibility evaluation often cannot be made by relying on one strategy alone (Forzani, 2020). Yet, only one out of every three respondents mentioned more than one evaluation strategy. Accordingly, children could benefit from the type of educational support suggested by previous research, especially in terms of evaluating multiple clues within and across content and source features rather than just making judgments based on personal feelings and opinions (Braasch et al., 2013; Bråten et al., 2018). There again, these children felt that they had received similar guidance for spotting fake news from teachers, parents, media, and friends. This is an interesting result, considering that children felt that guidance for a critical stance is validated across sources, such as the media, school, and significant others.

Regarding the third research question – ‘What kinds of fake news have the children/youths recognized in their everyday lives?’ – the results revealed that children clearly recognized that fake content is a common part of the social media platforms they frequent. Nearly half of the respondents named platforms where they had recently seen something that they defined as fake news, with TikTok and Snapchat being mentioned most often. This does not mean that all the children had been exposed to fake news, but the results nonetheless confirm that various kinds of harmful content are spreading on the social media platforms that children actively use (e.g., Weimann & Masri, 2020). Children face such fake content in the form of videos, stories, photos, and other visual forgeries. As previous research suggests, it is also likely that children may remember or recognize only the most sensational or upsetting fake content and fail to recognize all the fake news, especially fake news that confirms their existing beliefs (cf. Bessi et al., 2015; Metzger et al., 2010; Pennycook & Rand, 2021). Yet, many of these encounters with alarming content may occur without adult awareness of them, and

thus, there is an evident need to hear the voices of children in order to better understand which kinds of fake content are common in children's everyday digital experiences and what strategies the children adopt toward fake news.

However, children were not typically very reflective about why they encountered upsetting content, for example, whether they deliberately searched for the content, whether the platforms suggested the content for them, or whether their peers linked the content or baited them to click it. Social dynamics and algorithmic processes play important roles in terms of what kinds of news users confront, and recommendations by peers, friends, and online influencers can play an important role when youth make decisions and evaluate that information. However, the most popular remedies – such as training on critical reading or media literacy skills and evaluation strategies – are typically practiced in the classroom in rather different social settings, and that training is often related to a particular news-like content and technological application selected by the teacher (such as articles in print media or text-based content on traditional web pages). It is not known how well traditional approaches to critical literacy transfer to the online, social media-based fake news reality of children, characterized by short video clips, Instagram stories, image feeds, infographics, or watcher reactions, just to mention a few. This difference in context, media, content, and social dynamics poses a serious question regarding how media literacy skills learned in school are applicable to real-life situations and communities in which youth are confronted with targeted, and possibly tailored, fake news in their everyday lives.

The present results indicate a need for proactive efforts that address the real needs and practices of youth and ensure that every young person has the competences needed for critical thinking, creative expression, and civic participation in the age of machine learning. In particular, the results of the study signal the need to develop pedagogical approaches that help children to better understand the shortcomings of cognitive heuristics (Metzger et al. 2010) as well as the basic mechanisms of machine learning, including tracking and profiling, behavior/attention engineering, psychometrics-based advertising, and so forth (Valtonen et al., 2019; Vartiainen et al., 2020, 2022). Moreover, the results of this study call for actions in in- and pre-service teacher education, because without an understanding of children's lived experiences and the underpinning algorithmic governance, it is unlikely that teachers will be prepared to facilitate children's critical

thinking and informed actions in the data-driven society in which they already live.

Limitations

This research was based on a convenience sample and focused on children's interpretation of fake news rather than on direct observations of how they actually evaluate online content. Thus, the findings are not representative or highly generalizable, and future research is necessary to examine the experiences of a broader range of children, including in other countries, using the model provided. Another limitation of this study is that, due to ethical concerns, we did not have the opportunity to collect more detailed background variables, while previous studies have shown that there are substantial differences related to the social support children and youth receive (cf. National Literacy Trust, 2018; Stoilova et al., 2019). Accordingly, future research should enhance our understanding of background factors and children's digital ecology, including children's socio-economic backgrounds and life circumstances, parental mediation and social support relating to technology use, children's participation in online youth cultures, and the regulatory policies of the services used. Mapping children's digital ecology is important in terms of understanding how these connected factors may constrain or facilitate children in spotting fake news and taking informed actions against it.

ACKNOWLEDGEMENTS

The authors thank the January Collective for their core support. This study received funding from the Strategic Research Council (SRC) established within the Academy of Finland, grants #352859 and #352876.

REFERENCES

- Allcott, H., & Gentzkow, M. (2017). Social media and fake news in the 2016 election. *Journal of Economic Perspectives*, 31(2), 211–236. <https://doi.org/10.1257/jep.31.2.211>
- Askanius, T. (2021). On frogs, monkeys, and execution memes: Exploring the humor–hate nexus at the intersection of neo-Nazi and alt-right movements in Sweden. *Television and New Media*, 22(2), 147–165. <https://doi.org/10.1177/1527476420982234>
- Aufderheide, P. (1993). *Media literacy. A report of the National Leadership Conference on Media Literacy*. Aspen Institute, Communications and Society Program, 1755 Massachusetts Avenue, NW, Suite 501, Washington, DC 20036.
- Bakshy, E., Messing, S., & Adamic, L. A. (2015). Exposure to ideologically diverse news and opinion on Facebook. *Science*, 348(6239), 1130–1132. <https://doi.org/10.1126/science.aaa1160>
- Barbier, G., & Liu, H. (2011). Data mining in social media. In C. Aggarwal (Ed.), *Social Network Data Analytics* (pp. 327–352). Springer. https://doi.org/10.1007/978-1-4419-8462-3_12
- Bessi, A., Coletto, M., Davidescu, G. A., Scala, A., Caldarelli, G., & Quattrociocchi, W. (2015). Science vs conspiracy: Collective narratives in the age of misinformation. *PLoS ONE*, 10(2). <https://doi.org/10.1371/journal.pone.0118093>
- Braasch, J. L. G., Bråten, I., Strømsø, H. I., Anmarkrud, Ø., & Ferguson, L. E. (2013). Promoting secondary school students' evaluation of source features of multiple documents. *Contemporary Educational Psychology*, 38(3), 180–195. <https://doi.org/10.1016/j.cedpsych.2013.03.003>
- Bråten, I., Stadler, M., & Salmeron, L. (2018a). The role of sourcing in discourse comprehension. In M. F. Schober, D. N. Rapp, & M. A. Britt (Eds.), *Handbook of discourse processes* (pp. 141–166). Routledge.
- Bråten, I., Brante, E. W., & Strømsø, H. I. (2019). Teaching sourcing in upper secondary school: A comprehensive sourcing intervention with follow-up data. *Reading Research Quarterly*, 54(4), 481–505. <https://doi.org/10.1002/rrq.253>
- Bråten, I., McCrudden, M. T., Stang Lund, E., Brante, E. W., & Strømsø, H. I. (2018b). Task-oriented learning with multiple documents: Effects of topic familiarity, author expertise, and content relevance on document selection, processing, and use. *Reading Research Quarterly*, 53(3), 345–365. <https://doi.org/10.1002/rrq.197>
- Bulger, M., & Davison, P. (2018). The Promises, Challenges, and Futures of Media Literacy. *Journal of Media Literacy Education*, 10(1), 1–21. <https://doi.org/10.23860/JMLE-2018-10-1-1>
- Field, A. (2018). *Discovering statistics using IBM SPSS statistics* (5th ed.). Sage.
- Forzani, E. (2020). A three-tiered framework for proactive critical evaluation during online inquiry. *Journal of Adolescent & Adult Literacy*, 63(4), 401–414. <https://doi.org/10.1002/jaal.1004>
- Vartiainen, Kahila, Tedre, Sointu & Valtonen | *Journal of Media Literacy Education*, 15(2), 17-30, 2023

- Head, A. J., DeFrain, E., Fister, B., & MacMillan, M. (2019). Across the great divide: How today's college students engage with news. *First Monday*, 24(8). <https://doi.org/10.5210/fm.v24i8.10166>
- Hobbs, R., & Jensen, A. (2013). The Past, Present, and Future of Media Literacy Education. *Journal of Media Literacy Education*, 1(1). <https://doi.org/10.23860/jmle-1-1-1>
- Kafai, Y., Fields, D., & Searle, K. (2018). Understanding media literacy and DIY creativity in youth digital productions. In R. Hobbs & P. Mihailidis (Eds.), *The international encyclopedia of media literacy* (vol 2, pp. 1479–1489). Hoboken, NJ: WILEY Blackwell
- Kapantai, E., Christopoulou, A., Berberidis, C., & Peristeras, V. (2021). A systematic literature review on disinformation: Toward a unified taxonomical framework. *New Media and Society*, 23(5), 1301–1326. <https://doi.org/10.1177/1461444820959296>
- Lazer, D., Baum, M., Benkler, Y., Berinsky, A., Greenhill, K., Menczer, F., Metzger, M., Nyhan, B., Pennycook, G., Rothschild, D., Schudson, M., Sloman, S. A., Sunstein, C. R., Thorson, E. A., Watts, D. J., & Zittrain, J. L. (2018). The science of fake news. *Science*, 359(6380). <https://science.sciencemag.org/content/359/6380/1094>
- Martens, B., Aguiar, L., Gomez-Herrera, E., & Mueller-Langer, F. (2018). The digital transformation of news media and the rise of disinformation and fake news: An economic perspective. *JRC Digital Economy Working Paper*, 02(April), 57. https://ec.europa.eu/jrc/communities/sites/jrcetries/files/dewp_201802_digital_transformation_of_news_media_and_the_rise_of_fake_news_final_180418.pdf
- Matz, S., Appel, R., & Kosinski, M. (2020). Privacy in the age of psychological targeting. *Current Opinion in Psychology*, 31, 116–121. <https://doi.org/10.1016/j.copsyc.2019.08.010>
- McGrew, S., Smith, M., Breakstone, J., Ortega, T., & Wineburg, S. (2019). Improving university students' web savvy: An intervention study. *British Journal of Educational Psychology*, 89(3), 485–500. <https://doi.org/10.1111/bjep.12279>
- Metzger, M. J., & Flanagin, A. J. (2013). Credibility and trust of information in online environments: The use of cognitive heuristics. *Journal of Pragmatics*, 59, 210–220. <https://doi.org/10.1016/j.pragma.2013.07.012>
- Metzger, M. J., Flanagin, A. J., & Medders, R. B. (2010). Social and heuristic approaches to credibility evaluation online. *Journal of Communication*, 60(3), 413–439. <https://doi.org/10.1111/j.1460-2466.2010.01488.x>
- Miller-Idriss, C. (2018). What makes a symbol far right? Co-opted and missed meanings in far-right iconography. In M. Fielitz & N. Thurston (Eds.), *Post-Digital Cultures of the Far Right* (pp. 123–136). Transcript Verlag. <https://doi.org/10.14361/9783839446706-009>
- National Literacy Trust. (2018). *Fake news and critical literacy: The final report of the commission on fake news and the teaching of critical literacy in schools*. https://cdn.literacytrust.org.uk/media/documents/Fake_news_and_critical_literacy_-_final_report.pdf
- Nelson, J. L., & Taneja, H. (2018). The small, disloyal fake news audience: The role of audience availability in fake news consumption. *New Media and Society*, 20(10), 3720–3737. <https://doi.org/10.1177/1461444818758715>
- Nielsen, R. K., & Graves, L. (2017). News you don't believe: Audience perspectives on fake news. In *Reuters Institute for the Study of Journalism* (October). <https://reutersinstitute.politics.ox.ac.uk/our-research/news-you-dont-believe-audience-perspectives-fake-news>
- Pennycook, G., & Rand, D. G. (2021). The psychology of fake news. *Trends in Cognitive Sciences*, 25(5), 388–402. <https://doi.org/10.1016/j.tics.2021.02.007>
- Potter, W. (2013). Review of literature on media literacy. *Sociology Compass*, 7(6), 417–435.
- Ross, R. M., Rand, D. G., & Pennycook, G. (2021). Beyond 'fake news': Analytic thinking and the detection of false and hyperpartisan news headlines. *Judgment and Decision Making*, 16(2), 484–504. <https://doi.org/10.31234/osf.io/cgsx6>
- Shen, C., Kasra, M., Pan, W., Bassett, G. A., Malloch, Y., & O'Brien, J. F. (2019). Fake images: The effects of source, intermediary, and digital media literacy on contextual assessment of image credibility online. *New Media and Society*, 21(2), 438–463. <https://doi.org/10.1177/1461444818799526>
- Slonje, R., & Smith, P. K. (2008). Cyberbullying: Another main type of bullying? *Scandinavian Journal of Psychology*, 49(2), 147–154. <https://doi.org/10.1111/j.1467-9450.2007.00611.x>
- Stoilova, M., Livingstone, S., & Nandagiri, R. (2019). *Children's data and privacy online: Growing up in a digital age*. London School of Economics.

- <https://www.lse.ac.uk/my-privacy-uk/Assets/Documents/Childrens-data-and-privacy-online-report-for-web.pdf>
- Tandoc, E. C., Lim, Z. W., & Ling, R. (2018). Defining ‘fake news’: A typology of scholarly definitions. *Digital Journalism*, 6(2), 137–153. <https://doi.org/10.1080/21670811.2017.1360143>
- Tufekci, Z. (2015). Algorithmic harms beyond Facebook and Google: Emergent challenges of computational agency. *Journal on Telecommunications & High Tech Law*, 13(23), 203–216.
- Valtonen, T., Tedre, M., Mäkitalo, K., & Vartiainen, H. (2019). Media Literacy Education in the Age of Machine Learning. *Journal of Media Literacy Education*, 11(2). <https://doi.org/10.23860/jmle-2019-11-2-2>
- Vartiainen, H., Pellas, L., Kahila, J., Valtonen, T., & Tedre, M. (2022). Pre-service teachers’ insights on data agency. *New Media & Society* (online first). <https://doi.org/10.1177/14614448221079626>
- Vartiainen, H., Tedre, M., Kahila, J., & Valtonen, T. (2020). Tensions and trade-offs of participatory learning in the age of machine learning. *Educational Media International*, 57(4), 285–298. <https://doi.org/10.1080/09523987.2020.1848512>
- Vicario, M. Del, Bessi, A., Zollo, F., Petroni, F., Scala, A., Caldarelli, G., Stanley, H. E., & Quattrocioni, W. (2016). The spreading of misinformation online. *Proceedings of the National Academy of Sciences*, 113(3), 554–559. <https://doi.org/10.1073/pnas.1517441113>
- Vosoughi, S., Roy, D., & Aral, S. (2018). The spread of true and false news online. *Science*, 359(6380), 1146–1151. <https://doi.org/10.1126/science.aap9559>
- World Health Organization (2020). *Novel Coronavirus (2019-nCoV) Situation Report 13*. WHO. <https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200202-sitrep-13-ncov-v3.pdf>
- YLE News (2021, August 11). *Anti-vaccination disinformation targets youths on Finnish social media*. https://yle.fi/uutiset/osasto/news/anti-vaccination_disinformation_targets_youths_on_finnish_social_media/12054369
- Zuboff, S. (2015). Big other: Surveillance capitalism and the prospects of an information civilization. *Journal of Information Technology*, 30(1), 75–89. <https://doi.org/10.1057/jit.2015.5>