

2. The News Evaluator

Evidence-based innovations to promote digital civic literacy

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The News Evaluator is a multi-year project aimed at supporting constructive use of digital news among school pupils and the public. The project includes investigating authentic news feeds, exploring abilities to determine credibility, and developing evidence-based methods, materials and tools for teaching and learning digital civic literacy. In this chapter we describe the first phase of the project, where we collected and analysed empirical data from authentic news feeds with the help of almost 6,000 primary and secondary school pupils. At the same time, we developed a digital tool for scaffolding critical news literacy.

In recent years, the public media debate has been preoccupied with questions of manipulated or downright false news content. Access to credible news and skills to navigate biased and fake information has been highlighted as a pivotal democratic and educational challenge.¹ Citizens need to be able to identify and determine the trustworthiness of different information sources. A recent report from the Council of Europe² finds that “the call for more news literacy programmes has been deafening recently, and they are one solution on which almost everyone can agree”. Unfortunately, there is no quick fix to this complex problem.

Scholars argue that teaching and learning *digital civic literacy* is essential to an informed and engaged citizenship.³ We define *digital*

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civic literacy as the ability to navigate digital civic information in critical and constructive ways, and we acknowledge that simply having access to information is not enough. What has been labelled, for instance, media literacy, digital literacy, digital competence has been noted to be quite a challenge, but also to hold promises of educational solutions to challenges of misinformation and disinformation.⁴ Regardless of which term one uses, the importance of these kinds of literacies, skills or competences are recognized nationally and internationally.⁵ However, implementing digital tools and digital literacy in education comes with numerous obstacles and has proven to be difficult,⁶ which highlights the need for a better understanding of the challenges posed by manipulated news content to society and education.

This challenge was the starting point for a collaboration between Uppsala University, the civil society organization VA (Public & Science) and the research institute RISE Interactive. Funded by Vinnova and Uppsala University, the project is focused on: 1) the challenge of biased information in authentic newsfeeds; 2) people's problems in determining the credibility of news; and 3) how educational innovations can support digital civic literacy.

In the project's first sub study, we investigated the following research questions:

1. What news are Swedish teenagers exposed to in their digital newsfeeds?
2. How is digital news being shared among the teenagers?

We were also interested in learning about how credible the teenagers perceived the news to be if we provided them with a tool to guide them through a research-based method for digital source criticism. We also wanted to test whether a digital tool for critically scrutinizing newsfeeds could be perceived as useful by pupils when evaluating their feeds.

To answer our research questions, we engaged almost 6,000 Swedish teenagers in primary and secondary schools in a citizen science initiative as part of the 2017 Swedish events on European Researchers' Night (*ForskarFredag*). By participating, the pupils contributed to the accumulation of scientific knowledge while learning a research-based method for digital source criticism.

The ForskarFredag mass experiments

Every year since 2009, the Swedish events on European Researchers' Night (*ForskarFredag*) have included a mass experiment – a national citizen science initiative where thousands of school pupils have helped researchers with real research. ForskarFredag, as well as the annual mass experiment, is coordinated by VA (Public & Science). In 2017, the News Evaluator was launched as the ForskarFredag mass experiment of the year.⁷

Building a tool for supporting digital civic literacy

While it may seem like a simple task, systematically evaluating the credibility of a piece of news takes a lot of practice. Research suggests that a high level of education and a general sceptical attitude are not enough to evaluate information in critical and constructive ways.⁸ Digital civic literacy is challenging for everyone regardless of academic titles. Even professors and elite pupils at high-end universities may struggle to determine the credibility of online information.⁹ Seemingly, the best way to determine the trustworthiness of news is to use an approach used by professional fact-checkers.¹⁰ This approach is centred around three aspects:

1. Who is the *sender* and what may his/her intentions be?
2. What *evidence* is being presented for claims made in the article?
3. What are *other sources* saying on the same topic?

These three aspects were to make up the foundation for the digital tool being used by the pupils in the News Evaluator mass experiment.

The tool had two aims. One: it was to scaffold the pupils in their evaluation of 1) the sender, 2) the evidence, and 3) the corroboration of the information. In this way, the pupils would be taught a research-based approach to source criticism built upon *reading laterally* to determine the credibility of the news – to leave the website to find the information they need to assess its credibility.

Two: We also wanted the tool to transfer the assessment data to a database that both pupils and researchers could explore for scientific and educational purposes. The data would include a link to the news item, the pupils' ratings of the three aspects (sender, evidence, corroboration) as *Credible*, *Not credible* or *Neither credible nor not credible*, how

the news was found, its main topic, and an overall credibility rating. All information had to be collected anonymously. The database, in turn, needed to have a user-friendly interface and enable easy comparison between different pupil ages, types of news, credibility ratings, geographic regions, etc.

An invitation to participate in the project was sent by email to all primary and secondary schools in Sweden in April 2017. The invitation was also disseminated through the participating organizations' networks and digital channels. With so-called "fake news" being a hot topic on the public agenda in Sweden, the project received a lot of media attention and was featured on television and radio, as well as in the morning papers, tabloids and special interest media. In August 2017, over 12,000 pupils had been signed up to participate in the experiment.

In May 2017, we conducted a series of pilot tests. During this pilot phase, we developed the research protocol and the tool through an iterative process where input from teachers and pupils played a crucial part. We carried out classroom observations, recorded how pupils used the tool by capturing their on-screen navigation, and collected feedback from teachers and pupils through online questionnaires. The pilot also helped us develop visualizations and user feedback on the tool and the database.

In the weeks leading up to the experiment, we set up a series of communication channels for interaction between the participants and the research group, so that teachers (and pupils) could get immediate support if they should run into technical issues or protocol ambiguities during the experiment. These channels included email and a dedicated Facebook group, as well as a telephone support where teachers could speak directly to a developer at Research Institutes of Sweden (RISE) Interactive.

Two weeks prior to the start of the experiment we distributed a digital teachers' guide, including background information, previous research, explanations of the research protocol and a step-by-step description of the experiment. Additionally, the guide contained a number of hints and tips on issues encountered during the pilot.

We also provided the teachers with a short Powerpoint presentation to share with their classes before the start of the experiment.

Materials and tools were designed in line with research highlighting the importance of directing and scaffolding pupils to safeguard learning and quality when using digital tools in classrooms.¹¹

September 2017 – The News Evaluator mass experiment

Over a period of two weeks in September 2017, 2,748 secondary school pupils (16–19 years) and about as many primary school pupils (13–15 years) participated in the experiment. The drop-off rate of about 50 per cent from the 12,000 that had signed up to participate was expected: previous experience has shown that it is difficult for teachers to commit to such activities ahead of the school year.

The experiment was performed in six steps:

1. The teacher went through the Powerpoint presentation with the pupils.
2. All pupils filled in a short survey about digital news. The survey took approximately five minutes and covered topics such as how they commonly accessed news, how often news was shared with them in their social media networks and how credible the news was.
3. All pupils retrieved the latest piece of news from their own digital newsfeeds.
4. The pupils worked in groups of three, assessing the news. The group element was chosen to enhance the pupils' learning experience and to improve the quality of their submitted evaluations. The teacher had been instructed to allow 30–40 minutes for this stage.
5. The teacher engaged the class in a discussion where each group presented one piece of credible news, one piece of not so credible news and one piece of news that had been difficult to categorize.
6. The pupils and teachers filled in a short survey about their experiences with the experiment.

Having completed the experiment, the pupils were encouraged to access the database to explore differences and similarities in the credibility of the reported news. A tutorial was enclosed to introduce the students to the database interface.

Mainly credible hard news from mainstream media

We will now take a brief look at the results of the News Evaluator mass experiment of 2017. For practical/ethical reasons, primary school pupils are excluded from the analysis, as the inclusion of their data would have required teachers to collect carer consent.

In the pre-experimental survey, nine out of ten secondary school pupils reported using their mobile phones to access news. Six out of ten watch news on TV, and half of the pupils use a computer. A quarter of the pupils read print newspapers and about one in ten listens to the radio.

One in ten pupils had news shared with them on social media every hour. Half of them had news shared with them daily, and one out of five a couple of times per week.

Almost a third of pupils claimed to encounter unreliable news *every day* in their newsfeeds. Half of the pupils saw such news a *few times per week*, one out of five *seldom* saw unreliable news, while one in 50 claimed to never see such news in their newsfeeds.

In all, 2,703 evaluated news items were submitted to the database. The links pasted in the tool allowed access to the original source for every news item. After discarding incomplete or duplicate evaluations, 2,617 items remained. The majority originated from news sites, of which the five most common are listed in Table 1.

Table 1. News reviewed from the most common news sources

	News items	Per cent	Average credibility
Aftonbladet (national evening newspaper)	783	29.9	7.9
Expressen (national evening newspaper)	280	10.7	7.7
Nyheter24 (digital news site)	207	7.9	5.7
DN & SvD (national morning newspapers)	166	6.3	8.3
SVT & SR (public service TV and radio)	165	6.3	8.7

Comment: The table shows the total number of news items for each news source, the percentage of all news submitted and the pupils' average credibility rating of news items reported by the source, on a scale from 1 (not at all credible) to 10 (completely credible).

We found that pupils' ratings were slightly less critical than those of experts and teachers when we conducted an inter-rater reliability test of 100 items.¹²

Two-thirds of all news were from the categories Politics/Economy/Societal news and Accidents/Crime – so-called *hard news*. The re-

maining third consisted of *soft news* from the categories Sports, Arts/Entertainment and Lifestyle/Nutrition/Health/Medicine.

Hard news was most common among both girls and boys of all ages. With regard to soft news, Culture/Entertainment and Lifestyle/Health were more common in all-girls groups, whereas Sports news was more often reported by all-boys groups. Soft news was more commonly found on social media (Twitter being the exception), whereas hard news was more prevalent on news sites. In all, only four out of ten items had been shared via social media.

Looking at overall credibility scores, the highest average score, on a scale from 1 to 10, was given to Sports news (8.0), followed by Accidents/Crime (7.0), Politics/Economy/Societal news (6.9), Arts/Entertainment (6.4) and Lifestyle/Nutrition/Health/Medicine (5.7).

According to the post-experimental survey, most pupils found the digital tool to be easy and interesting to use.

Steering clear of echo chambers?

Among the news items reported by pupils in the News Evaluator, we find primarily hard news vetted by journalists at national newspapers, indicating that the pupils' online news environments hold more than rumours and polarized narratives from narrow-minded sources in echo chambers.¹³ In other words, by predominately going directly to established news sites, the pupils may avoid being shut inside filter bubbles and echo chambers.¹⁴ And, if the explanation for this result should be that the pupils are *directed* to newspapers by filter bubbles, then their filters can be said to promote domains with plenty of credible news. It should be pointed out, however, that even if most pupils did go directly to news sites when retrieving news items for evaluation, 70 per cent of them claimed to find news via social media in the pre-experimental survey. Possible explanations for this discrepancy could be that news may come in parallel from many different media and the pupils may fail to self-report the degree to which they go directly to news sites or get push notifications.¹⁵ Although they were instructed to pick the latest news item from their usual newsfeeds, we cannot know for sure that they did this in the classroom setting. Their actual newsfeeds could possibly contain a larger portion of less credible news shared via social media.

A contributing reason for pupils finding news in evening papers more often than in morning papers, in spite of giving the latter a higher credibility score, could be that the morning papers often use paywalls to restrict access to their articles. Such paywalls present a democratic challenge when access to credible news is determined by the citizens' financial situation. However, public service TV and radio, both given the highest credibility scores, help bridge this divide by providing free access to all news on their websites.

The 2018 Election Special and further developing the tool

In September 2018 we will be running the News Evaluator Election Special with Swedish primary and secondary school pupils. To date (27 August 2018), 10,000 pupils have signed up to help explore the trustworthiness of political news during the week leading up to the general elections on 9 September. The pupils will be working with an updated version of the digital tool, and this time we will also measure the learning effects of using the News Evaluator. We have also, in parallel, tested the digital civic literacy skills among almost 2,000 adolescents and adults, finding that they all struggle with determining the credibility of digital news.¹⁶ A cross-disciplinary team of researchers in psychology, education, history, and media and communication, along with designers, will work together to use the results to further develop the tool with the aim of launching a final live version in 2019. By then we will know what challenges teenagers' newsfeeds may provide during an ordinary week in September and a week before a national election. Based upon the identified limitations among young and old, also studied in the psychology lab, we will provide not only tools for scrutinizing newsfeeds but also user tests with personal feedback on each user's digital civic literacy skills. For teachers, this evidence-based test and feedback system can be implemented in classrooms to help pupils use information in more critical and constructive ways.

Notes

1. Carlsson (2018); Lazer et al. (2018); Wardle & Derakhshan (2017).
2. Wardle & Derakhshan (2017, p. 68).
3. Kahne & Bowyer (2017); Kahne et al. (2016); McGrew et al. (2017); McGrew et al. (2018).

4. Hatlevik & Christophersen (2013); Kahne & Bowyer (2017); Kirschner & van Merriënboer (2013); van Laar et al. (2017).
5. EU (2006); Skolverket (2017); UNESCO (2011).
6. Balanskat et al. (2013).
7. For more information, please see: <https://forskarfredag.se/researchers-night/mass-experiments/>
8. Kahan (2017); Kahan et al. (2017).
9. Wineburg & McGrew (2017).
10. *ibid.*
11. Kirschner & De Bruyckere (2017); Kirschner et al. (2006); Saye & Brush (2004).
12. Nygren et al. (2018).
13. Del Vicario et al. (2016); Flaxman et al. (2016).
14. Pariser (2011).
15. Jervelycke Belfrage (2016).
16. Nygren & Guath (2018).

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