NEWSWISE IN PRIMARY EDUCATION: EVALUATION TRIAL PROTOCOL

PROJECT TITLE	NewsWise in Primary Education
DEVELOPER (INSTITUTION)	Guardian Foundation with the PSHE Association
EVALUATOR (INSTITUTION)	University of Birmingham (UoB), University of Liverpool (UoB), National Literacy Trust
PRINCIPAL INVESTIGATOR(S)	Tom Harrison (PI, UoB); Gianfranco Polizzi (Co-I, UoL)
PROTOCOL AUTHOR(S)	Francisco Moller; Shane McLoughlin, Tom Harrison
TRIAL DESIGN	Experimental Randomised Cluster Controlled Trial
TRIAL TYPE	Effectiveness
PUPIL AGE RANGE AND KEY STAGE	9 -11
NUMBER OF SCHOOLS	40 (80 classes)
NUMBER OF PUPILS	2,400
PRIMARY OUTCOME MEASURE AND SOURCE	News literacy
SECONDARY OUTCOME MEASURE AND SOURCE	Civic Engagement

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Study rationale and background

Civic engagement (i.e., participation in community and/or political life) is crucial to the functioning of democracy. While young people are less engaged in traditional forms of politics than adults, in the digital age they often participate in different ways, from sharing public life on social media to joining online communities where they express their views on issues such as the environment or migration (Jenkins et al., 2016). A key challenge to their civic engagement is the "high prevalence of false news and misinformation", especially online (Cho et al., 2020, p. 3). Problematically, children often lack the critical skills to assess the reliability of information. We know from Ofcom (2019) that more than 40% of 8–15-year-olds in the UK do not make critical judgements about the results provided by search engines. Furthermore, as found by the National Literacy Trust (2017), only 2% of primary school children in the UK know how to identify misinformation.

These findings show that children need news and digital literacy as they increasingly consume online information alone, which can exacerbate their vulnerability. The ability to autonomously and critically evaluate information found online is crucial to addressing local, national, and international concerns including current and future pandemics, global warming and conflict. The NewsWise programme aims to equip primary school children with such an ability, while also focusing on the cultivation of qualities such as discernment, good judgment and honesty. More specifically, the UNESCO-award winning programme is the only free, UK-wide news and digital literacy programme for 9-11-year-olds. NewsWise brings together experts in news and digital literacy, journalism and PSHE education to deliver resources and activities designed to enlighten children about how news – including fake news – is created and disseminated, thus enabling them to deconstruct and analyse news stories, and spot bias and misinformation. Targeting schools with 2x the number of Free School Meals than the national average, as well as literacy 'cold spots', the programme aims to reach every corner of the UK, and since March 2018 has reached almost 8,000 children, more than 200 family members, over 2,000 teachers and worked with 34 volunteers.

The NewsWise programme was evaluated by the National Literacy Trust (NLT) using an approach designed primarily to capture changes in children's news literacy attitudes, behaviours, confidence and skills. Measures against each of these outcomes showed promising results (National Literacy Trust, 2018; 2020). In addition, the NLT captured teacher feedback after dedicated training sessions and webinars. Elements of this process evaluation were included to inform ongoing project development, with the NewsWise team adapting the programme to reflect findings. As this initial evaluation was targeted at supporting the development and expansion of NewsWise, effect sizes were not explored.

This randomised cluster control trial will build on the promising NLT evaluation in the following ways:

- It will be conducted by an independent academic team;
- It will focus on the link between news literacy and civic participation, which was not previously evaluated; and
- It will utilise more sophisticated and rigorous statistical testing.

More rigorous evaluation of media literacy (and related concepts such as news and digital literacy) interventions has been called for in much of the literature, including, most recently, a Rapid Evidence Assessment carried out by the LSE (Edwards et al. 2021). The results will help to improve the programme and support the case for this to be incorporated more widely into the primary school curriculum, as well as providing evidence about what works in terms of news and digital literacy education. A secondary aim is to establish if there is a link between news literacy and wider civic engagement. To address misinformation and associated concerns, we need young people not only to understand this issue, but also to take positive action in the interests of themselves and others. We believe the findings from the trial (if NewsWise is found to have a positive impact) will be sufficient to make a strong case that media and more specifically news literacy should feature more prominently in the national curriculum. The lead organisations have had previous success influencing the national curriculum content and the Ofsted Framework through similar evaluative research.

The mixed-method evaluation will include the following methods:

i. A randomised cluster-controlled trial design (hereinafter, "RCCT") based on the administration of pre- and post-surveys completed by 9–11-year-old pupils before and immediately after taking the NewsWise programme. Additionally, both surveys will be administered among a control group of matched 9–11-year-olds that do not take the NewsWise programme at the same time (wait-listed design).

ii. A follow up survey completed by both intervention and control groups three months after the post-survey.

iii. Ten semi-structured interviews with teachers who will have run the NewsWise programme.

iv. Ten focus groups with 50 pupils (five pupils in each focus group) who will have experienced the NewsWise programme.

This mixed method approach, which has proven effective across similar studies, will enable us to gather richer data, triangulating both quantitative and qualitative data, which will, in turn, provide a holistic evaluation of the effectiveness of the intervention. The advantage of adopting a randomised and controlled experimental design (pre-, post- and follow-up surveys) is that it will enable us to evaluate the NewsWise intervention by comparing pupils' levels of news literacy and of civic engagement prior to and at the end of taking the programme as well as any sustained impact after three months. Additionally, the RCCT will be supplemented by qualitative interviews with teachers and focus groups with pupils. The findings generated through interviews and focus groups will be used to triangulate, enrich and illuminate the findings from the quantitative surveys.

This protocol covers methods i) and ii) outlined above as this is our primary focus and the qualitative component will be inductive.

The Intervention

The NewsWise programme consists of 15 lessons delivered over 6 weeks as well as a live workshop from the NewsWise team and interactions with a journalist, and involves 20 hours

of learning. The programme does not displace other aspects of the school curriculum; each lesson is mapped onto the English/Literacy curricula of the four nations of the UK, the PSHE Association programme of study (incorporating statutory RSE guidance), and digital literacy objectives. The initial evaluation conducted by the NLT showed that schools are enthusiastic about the programme and happy to dedicate time for the teacher training and lessons as it complements areas they are expected to teach and see other benefits from running the programme.

All teachers delivering the programme will receive an initial one-hour pre-intervention training session followed by ongoing support from the NewsWise team. The training and support materials cover:

- News literacy subject knowledge;
- How the programme covers existing areas of the curriculum;
- Aims and outcomes of the programme;
- How to run an immersive news project in the classroom including children producing their own news reports;
- Practicalities of the project (e.g., workshops, evaluation, and journalist volunteer interactions).

Detailed lesson plans and all necessary teaching materials are provided as part of the programme. Each class taking part in NewsWise receives a live workshop delivered by the Guardian Foundation (GF) at the start of the programme. The workshop is an immersive newsroom experience, generating curiosity and critical engagement with the news. The fifteen units in the programme cover the following learning aims (a fuller overview of the learning outcomes can be viewed in appendix 1):

i. To engage pupils in news and deepen their understanding of how and why it is produced
ii. To enable pupils to critically navigate the news; and,
iii. To empower pupils to report their own news stories. As part of this objective, schools are offered opportunities for classes to have interactions with journalists as they progress through the units. These are aspiration-building experiences and help bring learning to life; children have the chance to ask questions related to what they are doing in the classroom to a professional who does the same thing on a daily basis.

Focusing on primary school children is important, as we know the extent to which news and digital literacy is crucial, especially among socio-economically vulnerable children, to their development as well- informed citizens. However, there remains a lack of existing research into this age group that focuses specifically on the effectiveness of interventions addressing this challenge. It is for this reason that the NewsWise programme is currently only offered to primary schools located in socio-economically disadvantaged areas.

In this evaluation over the course of eighteen months, the GF with support from the PSHE will deliver in 40 primary schools and to 80 classes the NewsWise intervention. Around 2,400

pupils, aged 9-11, will experience the news literacy programme. The participating schools will be broadly geographically representative of the UK in terms of number of schools from each region.

The intervention will be delivered in two cohorts. The first one will be delivered between September and December 2022, whilst the second will be delivered between January and April 2023 (a detailed schedule of activities can be seen in Appendix 2).

RCCT Impact Evaluation

Research questions

1. Does the NewsWise programme improve news literacy (a *near transfer* effect) of participants?
2. Does the NewsWise programme improve civic engagement (a *far transfer* effect) of participants?
3. Do observed effects of the NewsWise programme on participants' news literacy last from the post-intervention survey to follow-up?
4. Do observed effects of the NewsWise programme on participants' civic engagement last from the post-intervention survey to follow-up?
5. What is relationship between news literacy and civic engagement among participants?

Design

Table 1: Trial design

Trial design, including number of arms		Two-arm, cluster randomised
Unit of randomisation		School
Stratification variables (if applicable)		N/A
Primary outcome	variable	News literacy
	measure (instrument, scale, source)	A new measure adapted from previous measures
Secondary outcome(s)	variable(s)	Civic engagement
	measure(s) (instrument, scale, source)	A new-validated scale and new measures adapted from previous measures
	variable	News literacy

Baseline for primary outcome	measure (instrument, scale, source)	A new measure adapted from previous measures
Baseline for secondary outcome	variable	Civic engagement
	measure (instrument, scale, source)	A new-validated scale and new measures adapted from previous measures

Randomisation

Intervention and controls will be allocated at the school level. A member of the research team randomly assigned schools into experimental and control groups using an Excel random number generator function (range: 1-2). Randomisation will be done in two batches, 20 schools at a time. The reason for the latter is that running this trial in two cohorts will help to manage the logistics of delivery, assessment and training. Although randomisation of schools has occurred prior to the baseline assessment, teachers within participating schools will be instructed (in written instructions and in training) not to tell students which condition they are in when they are being assessed; this, along with the three-month intervention follow-up, will help to mitigate against expectancy effects.

Clustered randomisation by school was chosen as we were mindful of probable contamination effects if the individual classrooms functioned as clusters, biasing the Time*Condition interaction effects observed in the analyses towards the null (Hahn *et al.*, 2005). Contamination effects within schools can be avoided by randomising across schools rather than within schools (see Slade *et al.*, 2021)[1].

The randomisation process was completed by a member of the research team who will not be involved in any aspect of the data analysis. This involved assigning schools within each cohort to either the active or control condition using a random number generator in MS Excel with the function "=RANDBETWEEN(1,2)". This way, those analysing the data will be able to remain blind to which condition is the active condition (i.e., 1 or 2) and which schools are within each condition.

Control Condition

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[1] From our experience, contamination effects are likely in primary schools where the trial will take place as it is very possible that a participant will move from one experimental condition to another unbeknownst to the research team. In school-based research, this is a particular problem, as pupils from different classes within the same school will frequently communicate with one another about what they do during class. That is, those in the control class can still 'participate' in the intervention via social contact with those in the active participant class. Within-school contamination effects can be mitigated *to some extent*. For example, Tuijnman *et al.* (2021) includes a "contamination check" as they needed to use within-school randomisation due to the lower sample size and small number of schools that could function as clusters (*N* = 180; four schools) available to them. This is not ideal, as the contamination check relies on the accuracy of participants' responses, rather than being for systematically, as in the proposed study. More commonly, contamination effects can be a major limitation in educational research (see Fricke *et al.*, 2017).

Torgerson (2001) states that a contamination of only 30% can rapidly result in the need for doubling the sample size. This would affect the effect sensitivity of our study, meaning that the minimum detectable effect would be much larger than those projected above.

Participants under the control condition will answer the pre-survey questionnaire and participate in their usual lessons (business as usual). They will be entered on a waiting list and will receive the intervention after post– and follow up questionnaires have been collected (i.e., a wait listed design).

Participants

The study participants will be primary schools' children between 9 – 11 years old (i.e., years 5 and 6 in England and Wales and P6 and 7 in Scotland) across the UK. Only schools that have a 15.1% or higher percentage of pupils on Free School Meals (FSM) will be invited to take part. The FSM % average for the schools by region in the trial can be seen in the table below. Any school that has had a prior experience of the Newswise programme will also be excluded to remove any possible examination effects.

There will be no additional exclusion criteria besides schools potentially refusing to take part in the intervention. We will aim to reach a geographical range of locations across the UK that is proportional to the number of schools in each of the nine regions of England, plus Scotland, Wales and Northern Ireland. Regardless of this, age and gender will be entered as covariates during the analysis so that any potential effect will be factored in.

Table: Schools recruited to the trial; FSM average and region

Region	Regional population %	Representative Target	Recruited to trial	% average on FSM
East Mids	9%	4	4	18.5
East	12%	5	6	15.7
London	9%	4	4	21.1
North East	8%	3	3	26.3
North West	4%	2	2	22.7
West Mids	12%	5	5	23.3
South East	8%	3	3	15.1
South West	8%	3	3	16.5
Yorkshire	8%	3	2	21.9
Scotland	10%	4	3	20.8
Wales	7%	3	3	20.8
Northern Ireland	4%	2	2	20.8

Sample size calculations

We calculated the MDES (Table 2) using the PowerUp! calculator (https://www.causalevaluation.ord/power-analysis.html) for detecting main effects in RCCTs. Level 1 was the participant level, Level 2 was the school level, with Level 2 clusters being evenly divided across the intervention and control conditions. We could not establish priors based on the cross-sectional pilot test, so we have retained the calculator's pre-set

values where relevant, with one exception: We lowered the default ICC to .1 as we expected the variance explained in the outcome by our Level 2 (school) clusters to be minimal.

Table 2: Minimum Detectable Effect Size based on sample size

Model 3.1: MDES Calculator for Two-Level Cluster Random Assignment Design (CRA2_2)— Treatment at Level 2		
Assumptions		**Comments**
Alpha Level (α)	0.05	Probability of a Type I error
Two-tailed or One-tailed Test?	2	
Power (1-β)	0.80	Statistical power (1-probability of a Type II error)
Rho (ICC)	0.10	Proportion of variance in outcome that is between clusters
P	0.50	Proportion of Level 2 units randomized to treatment: $J_T / (J_T + J_C)$
R_1^2	0.40	Proportion of variance in Level 1 outcomes explained by Level 1 covariates
R_2^2	0.53	Proportion of variance in Level 2 outcome explained by Level 2 covariates
g^*	1	Number of Level 2 covariates
n (Average Cluster Size)	50	Mean number of Level 1 units per Level 2 cluster (harmonic mean recommended)
J (Sample Size [# of Clusters])	40	Number of Level 2 units
M (Multiplier)	2.88	Computed from T_1 and T_2
T_1 (Precision)	2.03	Determined from alpha level, given two-tailed or one-tailed test
T_2 (Power)	0.85	Determined from given power level
MDES	**0.219**	Minimum Detectable Effect Size

Pre- post- and follow-up outcome measures

A copy of the pre-/post- and follow up-survey used for the evaluation is included in Appendix 2. The surveys include measures of i) news literacy and, ii) civic engagement.

i) News Literacy Measure

The news literacy measure was created after a pilot was conducted with 655 9-11 year-olds from six schools in England. Building on existing instruments measuring news literacy and aspects of related concepts such as media and digital literacy, news literacy was conceptualised and operationalised as including three hypothesised dimensions based on theory from which the item pools were developed: Information evaluation skills and strategies

Twenty-four self-report items based on those from previously published scales (see Appendix 4) were included in an exploratory factor analysis to determine how many and which aspects of news literacy should be retained.

The results suggested that the various items only spuriously correlated overall, perhaps suggesting items should only be used as single items. This permitted us to remove items on purely theoretical grounds, as psychometric properties are less of a consideration for single item measures. Rather, we concluded that we need to rely on more so on face validity, retaining items that are less conceptually abstract to ensure they can be understood (see Pendrous, 2020). We retained a sub-set of single items of interest based on face validity, observed response rates in the pilot, and the frequency of "I do not understand the question" responses in the pilot.

Additionally, twelve edited news stories were presented to the children in the form of a performance measure. Across these stories, participants were required to attend to features of the new articles such as the URL, formatting, and spelling, and whether the article had author attribution to determine whether the news stories were real or fake, or whether not enough information was provided to decide. On four occasions, "Real" was the correct answer, and likewise "Fake" and "Not enough information to decide". Answers were marked as correct (1) or incorrect (0).

A confirmatory factor analysis (CFA) suggested that treating the successful recognition of stories that are Real vs Fake vs Not Enough Info should not be considered separate factors/competencies (CFI = .49). A one factor CFA was specified instead. Some items were anomalous and loaded negatively onto the overall News Literacy factor. We did not know why this was the case, so we removed these problematic items. We removed one other item due to a high modification index. The final one factor model had six items, with a high CFI of .95. We reran the model in a separate sample, and the CFA was also >.95.

Our six-item news literacy performance measure correlated with other variables in the dataset better than if we had included all 12 items, suggesting the shorter measure has greater criterion validity than if all 12 news stories were included.

ii)   Civic Engagement Measure

The civic engagement measure was created after a pilot was conducted with 655 9–11-year-olds from six schools in England. We created a list of 20 items that appeared to us to be face-valid measures of three aspects of civic engagement encountered in the research literature:

- Attitudes towards community and political life and towards one's own rights and responsibilities as a citizen;
- Actual participation in civic and political life; and
- Attitudes towards future involvement in civic and political life.

Participants responded to questions tapping onto these three dimensions on a five-point Likert scale (1 = 'Strongly Disagree', 2 = 'Disagree', 3 = 'Neither Agree nor Disagree', 4 = 'Agree', 5 = 'Strongly Agree'). Additionally, participants had the option to respond 'I don't understand the question' (scored as 6, but not included for analysis).

After exploratory and confirmatory factor analysis (*CFI* = .98) in two separate samples, ten items were retained. The first four items generally appear to measure civic engagement *attitudes* (e.g., "helping others makes me feel good"; α = .70). The second factor appears to measure civic engagement *actions* (e.g., "I am the kind of person who gives to people less fortunate than me"; α = .74). Finally, the third factor appears to measure civic engagement *awareness* (e.g., "I talk about politics and social issues with my parents"; α = .68). The retained items had a Flesch Reading Ease score of 70.70 and a Flesch-Kincaid Grade-Level of 5.90 suggesting that the items were easy to read for children aged approximately 10-11. These measures showed high internal reliability given the age group and brevity of the scales.

In addition to the ten items included in the new measure, we also retained single items that appeared to be face valid and comprehensible based on the pilot data, but also groups of items derived from measures that were previously psychometrically well-validated that also showed strong psychometric properties (e.g., CFI > .9) within our in the pilot data.

Data collection and input

Data will be collected using paper-copy questionnaires or online (using Qualtrics) under exam conditions, with students being allowed to ask their teacher for support if they do not understand a given question. Training and written instructions provided to teachers prior to this will stress that teachers should remain mindful about not inadvertently biasing students' answers if students do ask for this support. Data will be entered into a CSV file for analysis by a research assistant. Thereafter, the team member who performed the randomization will enter, for each school's data, the participant, class, school, and experimental condition identifiers. The key to interpreting these identifiers will not be shared with those analysing the data.

Compliance

The Guardian Foundation, the intervention delivery partners, will have a vested interest in ensuring that the intervention is delivered with high fidelity to ensure that a false null result is not obtained. We will gather post-test data from schools on the intervention fidelity (i.e., how many of the lessons were delivered as intended). As we are using an Intention To Treat (ITT) approach, we will not exclude any participants based on completion rates; we are not assessing whether the NewsWise intervention approach works *only amongst those who are compliant*, but rather, whether the intervention works *as an overall package*, which includes whether it fits and would be adopted within existing curricula.

Analysis

Descriptive statistics and inter-variable correlations will initially be explored for purposes of describing the sample.

Baseline data will be used to validate a performance-based measure of news literacy due to the additional items included following the pilot study. First, an exploratory factor analysis will be conducted in sample 1 (pre-determined through randomization to Condition) to determine which "news story" items should be included, and how many factors should be retained (using parallel analysis to simulate allowable factor cut-offs). In sample 2, we will use confirmatory factor analyses to establish measurement invariance across our samples. The composite score from the retained news literacy items will be correlated with other variables within the baseline dataset to establish the news literacy performance measure's criterion validity.

Confirmatory factor analyses will be used to reconfirm the tripartite factor structure of the civic engagement measure devised and validated within the pilot study (see Figure 1).

Having matched participants across time points and cleaned the data for analysis, the primary intervention efficacy tests will be conducted. The dependent variables for these tests will be the media literacy and civic engagement variables. The within-subjects independent variable will be Time (3 levels: pre-intervention, post-intervention, and follow-up). The main between-subjects independent variable will be Condition (2 levels: Intervention and Control). However, this analysis will entail mixed linear modelling to account for variables nested within Conditions (specifically, Participants nested within Class, nested within Schools, nested within experimental Condition). A 95% confidence interval will be used, with Bonferroni corrections applied where appropriate.

Longitudinal follow-ups

A follow-up assessment three months after the post-intervention assessment will be undertaken to help to minimise the Hawthorne effect. The additional assessment will involve the same measures as in the pre- and post-intervention surveys to check for maintenance of any observed intervention effects following cessation of the trial. The follow-up survey was included to help to mitigate any expectancy effects (e.g., Horns, Halo, or Hawthorne) that might differentially affect the intervention versus control groups, as, unlike the initial post-intervention assessment, this assessment will not be immediately preceded by an intervention.

As detailed above, there are two waves of data collection for each assessment, with each outcome measure (news literacy and civic engagement) being assessed immediately before and after the intervention, and one additional follow-up three months later. These follow-ups will take place in March and June respectively for each wave.

Ethics and registration

The Humanities and Social Sciences Ethical Review Committee approved the study - **ERN_22-0130**

The evaluation is registered with the ISRCTN (International Standard Randomised Controlled Trial Number) number: ISRCTN13350949

Personnel

Newswise Delivery Team

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Sorcha Hughes – Guardian Foundation

Newswise Evaluation Team
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Appendices

Appendix 1: NewsWise Learning Outcomes

1. Pupils will learn about the importance of news reporting in terms of trustworthiness and its place in democratic society.

2. Pupils will develop an appreciation of the standards of good news reporting, which needs to be truthful, fair and balanced, as incorporating different points of view.

3. Pupils will gain an understanding of what news is and its purpose, how it is produced and consumed, how it targets a particular audience, and how it can hold power to account.

4. Pupils will learn about misinformation and fake news, why this can be harmful to society, and how it can affect people's emotions and behaviour.

5. Pupils will develop an understanding of how online information can be targeted and of the risks that the Internet presents in terms of accessing and consuming news stories.

6. Pupils will learn different ways to assess the trustworthiness of news stories and information. This will include, but will not be limited to, asking and answering questions about the content they come across, analysing the language used, questioning whether a statement is fact or opinion, identifying bias in news reports.

7. Pupils will develop an understanding of how to manage emotional responses to news and how to ask for support or advice.

8. Pupils will read a range of news reports as well as producing (including editing and redrafting) a news report based on interviews and on the use of appropriate language, structure and layout features.

Appendix 2: Evaluation Timeline

Date	Stage	Notes
Trial Preparation		For the interviews and the surveys used in this study, ethical approval was granted by the University of Birmingham Ethics Committee.
May 22	Ethical Approval	
Mar – May 22	Pilot surveys developed	Pilot surveys for news literacy and civic engagement developed through a literature review and expert consultations.
May 22	Pilot surveys tested in field	655 9–11-year-olds, from 7 primary schools in England, complete pilot surveys.
May / June	Pilot data entered	All survey data was in hard copy form. It was entered into an Excel spreadsheet by a single researcher and checked by the research team.
June / July 22	Pilot data analysed	Factor structure and criterion validity of news literacy and civic engagement outcome measures to be established.
July	Data management	Data management approach and data -controllers agreed.
July 22	Final trial surveys confirmed	Final version of pre, post, and follow-up surveys prepared for use in trial.
August	Trial CONSORT Protocol registered and published	Trial registered with the ISRCIN Protocol published on www.jubileecentre.ac.uk
September	Statistical analysis plan (SAP)	SAP published on www.jubileecentre.ac.uk
Cohort 1		
Mar – May	Cohort 1 schools recruited	20 schools from representative regions across the UK recruited. All have above average number of students on FSM.

June 22	Independent Concealed Randomisation	Independent researcher randomly assigns cohort 1 schools into experimental (n=10) and control (n=10) groups using Excel random number generator function.
Sept – Dec 22	Cohort 1 Trial of Newswise	10 schools and 20 classes (approx. 600 9–11-year-olds) complete pre and post surveys and Newswise programme (experimental group). 10 schools and 20 classes (approx. 600 9–11-year-olds) complete pre and post surveys but not the Newswise programme (control group)
December 22	Interviews and focus groups	Interviews with 5 teachers running the intervention and 25 pupils (in 5 focus groups) who experienced it.
March 23	Follow up assessment	Pupils in control and intervention group in cohort 1 complete follow up survey.
May 23 – July 23	Cohort 1 control group experience intervention	
Cohort 2		
July – Oct 22	Cohort 2 schools recruited	20 schools from representative regions across the UK recruited. All have above average number of students on FSM
Nov 22	Randomisation	Independent researcher randomly assigns cohort 1 schools into experimental (n = 10) and control (n = 10) groups using Excel random number generator function.
Jan – Apr 23	Cohort 2 Trial of Newswise	10 schools and 20 classes (approx. 600 9–11-year-olds) complete pre and post surveys and Newswise programme (experimental group). 10 schools and 20 classes (approx. 600 9–11-year-olds) complete pre and post surveys but not the Newswise programme (control group)
March / April 23	Interviews and focus groups	Interviews with 5 teachers running the intervention and 25 pupils (in 5 focus groups) who experienced it.
July 23	Follow up assessment	Pupils in control and intervention group in cohort 2 complete follow up survey.
Sept – Dec 24	Cohort 2 control group experience intervention	
Analysis and reporting		
July 23 – Nov 23	Cohort 1 and 2 data (qual and quant) entered and analysed	Following the *a priori* study protocol, data will be collated and cleaned. Hierarchical mixed linear models will determine effectiveness of the experimental vs control condition over time, accounting for relevant nested variables (e.g., school-level data). We will also explore the relationship between news literacy and civic engagement.
Nov 23 – Feb 24	Reporting and dissemination	

Appendix 3: Pre-, Post-, Follow-Up Survey

This survey is available on the following link:
https://www.jubileecentre.ac.uk/userfiles/jubileecentre/pdf/NewswiseSurvey_31Aug_Final.pdf

Appendix 4: Overview of previous measures adapted after pilot for use in the pre-, post- and follow-up surveys

- Q1 – taken from Picton et al., 2021
- Q2 – partly taken from Picton et al., 2021 (i.e., first four items)
- Q3 – taken and slightly adapted from Picton et al., 2021
- Q4 – taken and slightly adapted from Picton et al., 2021
- Q5 – taken conceptually from Ashley & Maksl, 2013 (which can also be found in Vraga et al., 2015; Jones-Jang et al., 2021), but items were considerably reduced and the language was simplified. Also the original scale includes seven (not five) scale points (from "strongly agree" to "strongly disagree")
- Q6 – new question developed for the trail
- Q7 – The first three items were loosely adapted from Doolittle & Faul, 2013 (items were reduced and the language was simplified), while the last four items were loosely adapted from ICCS, 2016 – items were reduced and the language was simplified. Same scale points as in Doolittle & Faul, 2013, but different from ICCS, 2016 (i.e., agree/disagree rather than degrees of importance)
- Q8 – The first two items were adapted from Doolittle & Faul 2013 (items were reduced, combined and the language was simplified), while the last five items were adapted from ICCS, 2016 – items were reduced and the language was simplified. Also, we have four scale points, whereas Doolittle & Faul's original scale includes seven points, from "never" to "always", and ICCS's original scale includes four points ranging from "never or hardly ever" to "daily or almost daily"
- Q9 – adapted from Flanagan et al., 2007 – items were reduced and the language was simplified. Similar scale points. The original survey also includes five points, which range from "not at all likely" to "extremely likely"
- Q10 – adapted from ICCS, 2016 – items were reduced and the language was simplified. Same scale points
- Q11 – items were created by broadly taking inspiration from Doolittle & Faul, 2013, from ICCS, 2016, and from Arthur et al., 2017 – the language was simplified. Same scale points as in Dolittle & Faul, 2013 and Arthur et al., 2017
- Q12 – First and second items were loosely adapted from Doolittle & Faul 2013 and from ICCS 2016, while we developed the last two items – scale points are different as in Dolittle & Faul they range from "never " to "always", and in ICCS they range from "never or hardly ever " to "daily or almost daily"
- Q13 – items were created by broadly taking inspiration from Doolittle & Faul, 2013, ICCS, 2016 and Arthur, 2017. Scale points are different as in Dolittle & Faul they range from "never " to "always", and in ICCS they range from "certainly do this" to "certainly not do this"
- Q14 – This performance test builds on Picton et al., 2021, as well as on Pennycook & Rand, 2019 – we have chosen news stories that are more accessible for children aged 9-11.

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