

AFFILIATED SCHOOLS RESEARCH PROGRAM FINAL REPORT

CO-DEVELOPING A NEW APPROACH TO MEDIA LITERACY IN THE ATTENTION ECONOMY



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CO-DEVELOPING A NEW APPROACH TO MEDIA LITERACY IN THE ATTENTION ECONOMY

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PART 1: ACHIEVEMENTS STATEMENT

Project title: *Co-developing a new approach to media literacy in the attention economy*

Project team: Rachel Cunneen, Faculty of Education; Mathieu O'Neil, Faculty of Arts and Design

Project time period: September 2021-March 2023

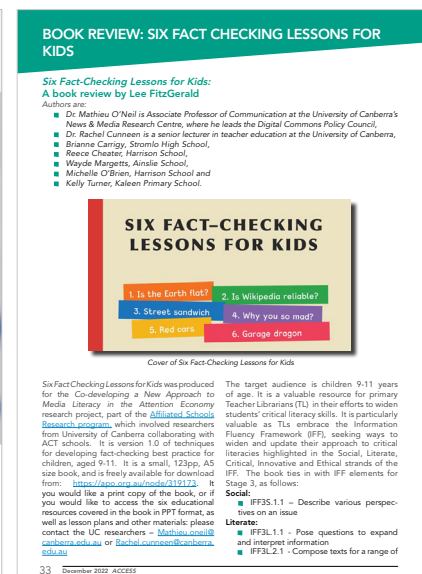
PROJECT SUMMARY

Instilling in young people appropriate information literacy skills is urgent. In the attention economy, time is precious, and it is a poor strategy to engage deeply with dubious claims. Instead, students should acquire the means to quickly decide which claims are worth their attention. With ACT school teachers, we co-developed educational resources, teaching students to identify dubious claims and to verify them using Wikipedia.

Achievement I: Publicly challenging the narrative about Wikipedia's reliability

As we used Wikipedia as a fact-checking resource, we needed to change the outdated perception that it is 'unreliable'. We made a number of highly impactful contributions to public debate.

- In November 2021, our opinion piece in *The Conversation* was read by more than 160,000 people and shared 7,000 times on social media and reproduced in more than 20 websites (e.g. news.com.au, yahoo.com, *The Jakarta Post*).
- Both chief investigators were interviewed about media and information literacy in November 2021 on ABC Radio in Sydney and Canberra. Mathieu O'Neil was interviewed on ABC Radio Perth and ABC Radio National in September 2022, and on ABC Radio in January 2023.
- In September 2022, Mathieu O'Neil was prominently featured in an *SMH/The Age* science article entitled 'Evidence suggests Wikipedia is accurate and reliable. When are we going to start taking it seriously?'



The Conversation opinion piece was shared 7,000 times and published in *The Conversation-Indonesia*. The project featured in *Access*.

Achievement II: Successfully maintaining teacher engagement

Despite challenging circumstances (COVID-19, change of project manager midway) we maintained strong connections with our co-researchers: Kelly Turner (Kaleen PS); Wayde Margetts (Ainslie PS); Reece Cheater (Harrison School Senior) and Michelle O'Brien (Harrison School Junior).

- We sent fortnightly updates and held debrief sessions which produced key insights and informed future plans.
- A workshop held at UC's Inspire Centre in April 2020 was attended by ten teachers and teacher-librarians from independent and public schools in the ACT.
- Six resources (PPT slides and notes) were used in Harrison Schools (junior and senior), Ainslie PS, Kaleen PS, and Mt Stromlo primary and secondary classrooms between February and August 2022.

Achievement III: Progressing the understanding of fact-checking in primary and secondary education

We achieved concrete change in classrooms, as our lesson plans were embraced by our co-researchers and their students, whose information literacy skills improved as a result.

- We created a successful template for student engagement, based on relatable narratives.
- We pioneered the use of lateral reading (do not engage with a dubious claim: look away; search; verify; if the claim is unsound, move on), and collected evidence that it had positive effects.
- We identified a key contradiction between ‘critical literacy skills’ and ‘digital literacy skills’, with significant implications for future education policy.
- A textbook of compiled resources, *Six Fact-Checking Lessons for Kids*, was published in September 2022 and made available online via the Analysis and Policy Observatory (APO).
- A video animation of these resources will also be available in May 2023.

Achievement IV: National impacts

Our project resonated with multiple publics.

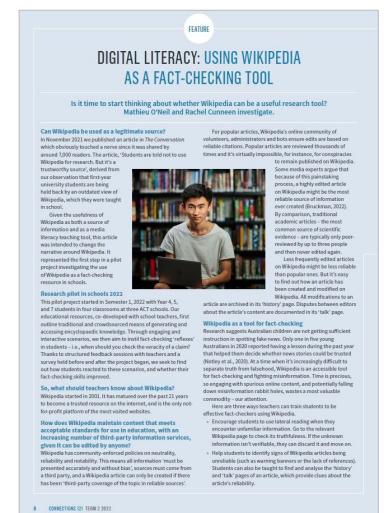
- In 2022 we were invited to present our project at the EduTECH conference in Melbourne (Aug.), at the ACT Association for the Teaching of English (keynote, Nov.), at UC’s FADX exhibition (poster, Nov.), and during the UC Masterclass series (Nov.).
- We presented papers at the UC research festival (Jun.) and at conferences in Australia (AATE/ALEA, Jul.; WOW, USYD, Nov.).
- Teacher-librarians were particularly interested. We were invited by Wikimedia Australia to present a digital Literacy webinar as part of the Wikipedia 1Lib1Ref campaign on 17 May 2022. This led to the recruitment of a further Affiliated School for participation, Mt Stromlo, and a new co-researcher, Brianne Carrigy.
- The project was also presented during a keynote address at the School Library Association of NSW’s Professional Learning Summit in September and two teacher-librarian publications, *Connections* and *Access* extensively covered our approach.
- We convened at UC a symposium on Sept. 16, 2022, titled: “Wikipedia and Education in the Time of the ‘Crisis of Information’” with education, health, science and humanities researchers (UC, USYD, RMIT, Swinburne) as well as representatives of Wikimedia Australia and of Wiki Education (USA).
- In Feb. 2023, our submission to the Australian Senate Select Committee on Foreign Interference through Social Media, ‘Building resilience with information literacy and information health’ used this Affiliated Schools project to propose developing the information resilience of Australian citizens.



Students at Harrison senior school using the learning resources.

Achievement V: International impacts

- Our 2021 *The Conversation* article was translated and published in *The Conversation-Indonesia*. A subsequent *The Conversation* piece by Mathieu O’Neil (Aug. 2022), which cited this project as a response to misinformation, was also published in *The Conversation-Indonesia*.
- Mathieu O’Neil was interviewed about the use of Wikipedia for fact-checking and was featured in articles in US media outlet *Wired* (Oct. 2022) and Swiss outlet *MedienWochen* (Dec. 2022).
- Mathieu O’Neil presented at a Summer Briefing on Information Manipulation in the Indo-Pacific Region co-organised by the Taiwan-Asia Exchange Foundation and the Information Operations Research Group (Taiwan, Jun. 2022) and at the Bina Nusantara University (BINUS) Writers’ Week (Indonesia, Nov. 2022); and delivered a guest lecture with UC Faculty of Education graduate Dr Maya Defianty at BINUS University (Mar. 2023).
- After taking part in an international conference (‘Fact-checking the Fact-checkers’, HKBU/Hong Kong, Oct. 2022), M. O’Neil and R. Cunneen were invited to publish an article in the *Asia-Pacific Journalism Review* (Mar. 2023) and to submit a chapter to an international volume (Routledge Advances in Internationalizing Media Studies Series, in press).



The project featured in *Connections*.

PART 2: EXECUTIVE SUMMARY

This project brought together researchers from the Faculty of Arts and Design and the Faculty of Education. The Project Team Members were Dr Rachel Cunneen, a Senior Lecturer in English Literacy in the Faculty of Education, and Associate Professor Mathieu O'Neil from the News and Media Research Centre in the Faculty of Arts and Design. Dr Megan Deas and Dr Florence Awino were Project Managers. Affiliated Schools classroom teachers Mr Wayde Margetts, Mr Reece Cheater, Ms Michelle O'Brien, Ms Kelly Turner and Ms Brianne Carrigy were co-investigators and co-developers.

The primary objective was to investigate the extent to which up-to-date fact-checking methodologies could be introduced and embraced by teachers and students in the target schools of Harrison School (primary and secondary), Kaleen Primary School, Ainslie Primary School and Mt Stromlo High School. A starting premise for the project was the acknowledgement that the contemporary media environment is saturated with claims, many of them false, and that the existing information and critical literacy strategies used in many Australian classrooms, including in the ACT, were ineffective in an attention economy, in which deep engagement with suspect claims is a time-wasting strategy. The aim was to introduce the SIFT method (Stop, Investigate, Find, Trace), created by information literacy researcher Mike Caulfield, as an alternative to the currently more common strategies used to check the validity of information, such as CRAAP (e.g. is it Current, Relevant, Accurate, Authoritative and Purposeful).

Initial consultations with teacher co-researchers indicated wariness about using Wikipedia as a fact-checking tool (See **Appendix D**). In response, Rachel Cunneen and Mathieu O'Neil published an article in *The Conversation* in November 2021, arguing that Wikipedia's community-enforced policies on neutrality, reliability and notability meant it was an accessible tool for fact-checking and fighting misinformation. This article was eventually viewed over 160,000 times, and the task of changing the largely negative perceptions school teachers have towards Wikipedia became a cornerstone of the project.

Between December 2021 and April 2022, in consultation with the teacher co-researchers, five sequential lesson resources on fact-checking were created and trialled in Years 4-6 classrooms. The resources were created as still images on power point slides, and were given catchy titles ('Is the Earth Flat?'; 'Is Wikipedia Reliable?'; 'Street Sandwich'; 'Why You So Mad?'; 'Red Cars' and 'Garage Dragon'). Each resource guided students through iterative, increasingly advanced concepts relating to locating reliable sources; identifying ad hominem arguments; understanding 'the frequency illusion'; distinguishing between scientific evidence and belief systems; and how to use Wikipedia for fact-checking. Whilst Caulfield's concept of SIFT remained a reference point, it was decided that students of this age did not need to be taught Caulfield's final SIFT 'move' of "Tracing claims, quotes and media to the original context". In final versions of the resources, the importance of 'lateral reading', which teaches students to 'look away' from a dubious online claim, is foregrounded rather than the full SIFT model.

During a focus group meeting with teacher co-researchers in December 2021, which occurred prior to the resource trialling, it was decided that learning intentions needed to be included, and that surveys were needed to measure the effectiveness of the resources: Google surveys were thus administered to each class before and after the resource trial (See **Appendix E**). The survey results indicated that the resources led to greater awareness of fact-checking strategies, but the initial understanding of Wikipedia quality control did not change. These results, in addition to individual interviews from Feb-July 2022 with the teacher co-researchers, suggested a need to better tailor the resources for the youngest and oldest students in the trial cohort: it is intended that the 2023 version of these resources will further investigate the potential to 'spiral down' to Year 4 and to 'spiral up' to Years 10 and 11.

A 'Teaching Students to Fact-Check workshop' was held at the UC Inspire Centre on Saturday, April 30, 2022, with the intention of sharing the co-created resources with a broader range of ACT educators. The workshop was attended by 10 teachers and school librarians, from both public and independent schools. Reception to the resources was positive, and school librarians indicated in post-workshop feedback that they were now more likely to recommend Wikipedia as a reliable source to their colleagues and students (See **Appendix F**). The feedback from other teachers in relation to Wikipedia was more mixed; some were more likely to consider it as a fact-checking tool, but others remained unconvinced, or did not make the distinction between fact-checking and deeper research.

Strong interest from school librarians, and from the wider community, led to invitations to present, to deliver keynotes, and to be interviewed through the latter half of 2022, including (but not limited to) a Wikimedia workshop for librarians in May; the Melbourne EduTECH Conference in August; a keynote at the School Library Association (NSW) Professional Learning Summit in September and a keynote at the ACT Association for the Teaching of English in November. On September 16, 2022, Mathieu O'Neil organised and convened a symposium on the UC Campus, titled 'Wikipedia and Education in the Time of the 'Crisis of Information'; as a result, a public report recommending strategies for the recognition and use of Wikipedia in Australian school settings will be released in 2023.

A textbook gathering the resources (*Six Fact-Checking Lessons for Kids*) was published in September 2022 and made available online. Short videos based on the first four educational resources will be released in June 2023, and will also be made freely available for use by the public and in the classroom. The collaboration that has gone into these resources has helped to ensure that they are engaging, relevant and educative, particularly in relation to the usefulness and effectiveness of Wikipedia. Future iterations of this project must be mindful to involve all stakeholders in creating interactive activities, in addition to continuing to stress the importance of using lateral reading in contemporary digital media research in the classroom.

PART 3: DETAILED REPORT

3.1 AIMS AND CONTEXT

Our theoretical contribution includes a critical examination of how the ‘lateral reading’ methodology, traditionally presented to high schoolers, can be adapted to primary school children. The principle underpinning lateral reading is ‘civic online reasoning’: Who is behind the information? What is the evidence? What do other sources say? (McGrew et al., 2018). Referring to ‘civic online reasoning’ recognises the growing importance of the internet as a source of information, as well as the importance of being in possession of accurate information when debating social and political issues. Civic online reasoning also focuses on action with regard not to what students know, but the steps they take to verify information.

Our study intended to provide pioneering evidence of the extent to which primary school children can evaluate online content. Previous large-scale studies, such as the Stanford-developed civic online reasoning research, has used high school and university students as subjects. We observed that 2018 research by the Australian e-Safety Commissioner found that out of 3,520 parents surveyed, 81% of pre-schoolers used the Internet (eSafetyCommissioner, 2019). Of this group, 94% reported that their child was already using the Internet by the age of four. This strongly suggests it is much too late to begin teaching information/media and ‘civic online reasoning’ skills in adolescence: most children need to develop these skills in conjunction with the time that they learn to read news and information on the internet. Our study viewed students, in the context of online learning, as autonomous social agents, with sufficient cognitive development to make informed decisions about the online information they encounter. We drew on Vygotsky’s theories of mediated learning, seeing the classroom as a place where models of inquiry and critical thinking are enculturated (Ritchhart & Perkins, 2008).

Our Research Questions

1. In working with ACT schools to develop an explicit, detailed strategy, founded on lateral reading, we intended to better enable students to identify reliable information and to filter out erroneous or harmful online sources. Our first research question to ACT learning professionals was:

How will lateral reading method principles be perceived by ACT students?

2. Our overall aim was to co-develop effective, practical resources to counter misinformation and to boost critical media literacy skills. Our second research question was:

How can effective lateral reading-based methodologies be co-developed with ACT School teachers?

3.2 APPROACH AND METHODS

Our original timeline and methodology appear below:

MONTH/YEAR	ACTIVITY	MILESTONES
Phase 1 August - September 2021	Initial contact with Harrison, Kaleen and Ainslie teachers: presentation of SIFT, presentation of still-image based activities. Teachers integrate still-image based activities into lessons.	Monthly meetings with research partners.
Phase 2 October-November 2021	Debrief and co-development with school teachers. Primary development of video resources.	November meeting with research partners.
Phase 3 February-March 2022	Harrison, Kaleen and Ainslie teachers integrate video-based activities into lessons.	Monthly meetings with research partners.
Phase 4 April 20/22, 2022	Workshop at UC open to broader cross-section of ACT school teachers.	
Phase 5 April-May 2022	Debrief and co-development with Harrison, Kaleen and Ainslie school teachers.	Monthly meetings with research partners.
Phase 6 June-September 2022	Secondary development of video-based activities. Release of public report and videos.	

Due to delays related to COVID infections and lockdowns, our project officially began on 1 November 2021. It was an ongoing, significantly impactful challenge to coordinate meetings between all investigators and co-investigators. This was further compounded by a delay to beginning research in Term One, 2022 due to COVID restrictions. Resources and surveys to schools were delayed as a result.

We again experienced delays with two teachers (Reece Cheater and Michelle O'Brien) pulling out of the project in Term One, 2022. Our project manager, Megan Deas, was appointed on 16 September 2021. She resigned in April 2022, due to maternity leave. Time was lost in the new appointment of (and handover to) Florence Awino, which was compounded by the resignation of Dr Awino in October 2022.

The impact of these delays led to less empirical evidence than anticipated and desired. The construction of the video was also delayed until 2023.

Our finalised timetable appears below:

MILESTONE OR DELIVERABLE	DATE, RESEARCH METHOD	KEY FINDINGS	IMPACT ON PROJECT / FUTURE PLANS
Preliminary discussions co-researchers in Harrison, Kaleen and Ainslie schools.	Sept-Nov 2021 Individual interviews.	Some resistance to use of Wikipedia in school teaching community.	Creation of two introductory resources on (1) scientific knowledge and (2) Wikipedia publication of <i>The Conversation</i> article.
Workshop at UC with the Harrison, Kaleen PS and Ainslie PS co-researchers. Resources version one completed on lateral reading and Wikipedia reliability.	Dec 2021 Focus group.	Need to include learning intention for each resource. Need to include effectiveness metric.	Creation of lesson resources with learning intentions. Creation of Google surveys (to be administered before and after classroom trialling of resources).
Co-researchers in Harrison, Kaleen and Ainslie schools integrate activities into teaching; debrief with UC researchers.	Feb-July 2022 Individual interviews.	Program is popular with teachers and students. Need to simplify content for Year Four students.	Informs next iteration.
Workshop at UC opened to broader cross-section of ACT school teachers and teacher-librarians: Version Two of the five learning resources is shared.	Apr 2022 Focus group.	Confirmation of initial resistance to Wikipedia use, followed by some change of minds.	Informs next iteration. Inclusion of Mt Stromlo teacher-librarian into project.
Teacher-librarian at Mt Stromlo High School integrates activities into teaching; debrief with other school-based co-researchers.	May-Aug 2022 Individual interviews.	Program popular with teachers and students. Need to include more activity-based learning.	Informs next iteration.
Compilation of education resources in book format; outreach activities e.g. EduTECH, School Library Association (NSW) keynote.	Aug-Sept 2022 N/A	Strong community interest; EOIs from teacher-librarians in other States and territories.	Informs next iteration.
Symposium on Wikipedia and Education held at Ann Harding Centre, UC.	Sept 2022 Focus group.	Final panel identifies systemic issues and outlines solutions.	Public report. Development of Micro-credential in Wikipedia editing/use is canvassed.
Creation of education resources in video format.	Feb-May 2022 N/A	N/A	Informs next iteration.

3.3 KEY FINDINGS AND OUTCOMES

Key research finding 1: Frequent wariness of Wikipedia use by the ACT teaching community.

Our first finding was also our first challenge: the perception that Wikipedia is ‘unreliable’ (since ‘anyone can edit articles’) was widespread in the school teaching community. This perception does not acknowledge the fact that strict policies (ie. ‘reliable sources’) are enforced within Wikipedia by volunteer editors with specialist knowledge (in the case of scientific articles) and by non-specialist volunteer editors and bots (in the case of non-scientific articles on popular topics: incorrect information may persist longer for obscure topics which attract little attention). Wikipedia also has volunteer ‘administrators’ who can ban disruptive users. Gathered data (See **Appendix D**) indicates that negative perceptions persist amongst teachers and school students: these perceptions will require ongoing, systemic discussion and reappraisal.

Key finding 2: The position of information literacy in the classroom and curriculum needs to be reassessed.

Whilst critical and creative thinking is a General Capability (see Version 9 of the Australian Curriculum), teaching how to evaluate the veracity of online ‘claims’ and ‘fake news’ can be overlooked or treated perfunctorily in an already crowded literacy curriculum. School librarians more readily see the value of teaching lateral reading as an alternative to the C.R.A.A.P method, but in classrooms, distinctions are not made consistently between the traditional ‘deep’ analysis of texts and the pedagogical imperative to teach strategies involving quick appraisal and ‘looking away’ from online information.

Interviews with co-researchers indicated a consistently high level of enthusiasm for the resources: however, it was clear that future iterations of the resources needed to be more consciously age-appropriate. In the current form, the resources were most suitable for teacher-led ‘top down’ presentations and discussions. Several co-researchers expressed a desire to see more activity-based, student focused resources. An expanded version of the resources, linking curricula to learning outcomes, success criteria and assessment would also be welcomed by the teacher researchers.

Key finding 3: Critical literacy vs Digital literacy

We identified a discrepancy between traditional understandings of ‘critical literacy’ and the ‘digital literacies’ which are better adapted to an environment where information is over-abundant.

BEING ‘CRITICALLY LITERATE’	BEING ‘DIGITALLY LITERATE’
- Needs time and contemplation - Needs an ability to think ‘intertextually’ - Reading should be considered from a number of different perspectives and approaches - A curious and skeptical mindset - Texts are never neutral; there is always bias	- Needs quick, confident decision making - Limited, finite attention is preferable - Linear (lateral) reading - Facts must be as objective and incontestable as possible - Trusting sources is about process, not institutions.
BUT	
Traditional forms of authority are still often important.	

Resources or outputs that will be made available to the university, affiliated schools, or groups of stakeholders, including information about where any project material is available

Six resources (slides and notes), featuring stock photos, were used in Harrison, Ainslie, and Kaleen primary and secondary classrooms between February and July 2022. A textbook gathering the resources (*Six Fact-Checking Lessons for Kids*) was published in September 2022 and made freely available online via the APO, a leading public policy repository. Video resources are in the final production stage in May 2023, and will be made freely available to educators and other interested stakeholders when complete.

Changes to subjects or courses that have occurred during the project

A new lesson sequence was introduced into Core Literacy (9863) during WIT 2022, to improve and augment the existing material on information literacy (approved by TQI in 2021). It now includes information about the attention economy, online (digital) literacy, and fact-checking, as well as activities teaching lateral reading and how to search for information using Wikipedia. This lesson was received well by first-year Education students and has been incorporated into subsequent iterations of the unit.

Professional development provided to teaching and/or educational design and support staff

A 'Teaching Students to Fact-Check workshop' was held at the UC Inspire Centre on Saturday, April 30, 2022, with the intention of sharing the co-created resources with a broader range of ACT educators. Their feedback is shared in **Appendix F**.

On Tuesday, May 17, 2022, Rachel Cunneen and Mathieu O'Neil presented free online professional learning for school library staff, hosted by Wikimedia Australia. This later enabled the addition of a further Affiliated School for participation, Mt Stromlo HS, and a new co-researcher, Brianne Carrigy, who trialled the resources with her classes between May-August 2022.

On November 3, 2022, Rachel Cunneen delivered a keynote address to ACTAATE members as part of the 'Sharing Secrets of Success' mini-conference, titled, 'Media Literacy in the Attention Economy: Is Critical Thinking Too Much C.R.A.A.P?'. This conference was TQI accredited for three hours. Feedback from ACT Secondary English teachers was positive, though one teacher noted that: 'CRAAP better suits our purpose in a senior secondary context as it allows for consideration of whether the information is meeting our needs, rather than simply assessing whether it is reliable or not.' This comment highlights the need to carefully distinguish between fact-checking and rigorous research into informative texts with an older student cohort – an important consideration for future research into fact-checking and media literacy in secondary classrooms.

Changes to teaching or design practices that have occurred as a result of the project

The changes to teaching practices as a result of this project are in progress, evolving and on-going. After the April 2022 workshop for ACT teachers, 'Teaching Students to Fact-Check', one participant indicated they would now 'recommend [Wikipedia] as a source of information. I would now encourage staff to take a fresh look at it and consider their opinion.' Another wrote that 'the program and strategies for checking validity' were new [for them]. However, another participant offered that their opinion hadn't changed: 'I always tell the kids they can start there' but 'I think there should be other examples [rather] than just Wikipedia.' Significantly, this workshop had been made available to teachers in ACT Independent Schools as well as the ACT Directorate: representatives from the independent education sector were unanimously enthusiastic about fact-checking resources and strategies that were presented (see **Appendix F**).

One teacher co-researcher initially described the idea of using Wikipedia for fact-checking as 'mind-blowing': 'I flat out said to my kids, we don't use it.' They shared that when the first drafts of the resources were disseminated: 'When I was reading through all the articles about fact-checking, I was like, 'holy cow! ... it was really quite mind-blowing actually.' Later they asserted that they would 'definitely' use Wiki Kids with Year Six ... we do so much already liaising with the high schools, talking to them about what they want from the Year Sevens literacy-wise.' Another co-researcher ventured: 'I guess I've now realised the importance of it ... I think we have to almost move away from content a little bit and look at skills and that if we're really serious about 21st century education, it's about skills and being able to [make decisions about education]' (see **Appendix D**).

The cognitive shifts expressed by teachers and teacher co-researchers weren't necessarily reflected in the data collected from students (via Google surveys) before and after they participated in trial presentations of the fact-

checking resources. The survey data demonstrated that although fact-checking awareness generally increased after the trial program, the understanding of Wikipedia quality control did not change (see **Appendix E**). The teacher co-researcher working with younger (Year 4) students reported that while these students appreciated the content overall, some struggled with the metaphorical ‘hooks’ to some of the material. This co-researcher observed: ‘It is pretty hard, I think, for kids to know – what does it take to always tell the truth? The teacher is always right. Yeah – and Mum and Dad.’

Another teacher co-researcher (and an ACT Primary Head Teacher) noted an ingrained culture of mistrust around using Wikipedia as a reliable source: ‘Teachers will say do not go to Wikipedia. Look at all the other websites . . . Especially, I would say more with the teachers that [have] probably been out for five or six years. They’re the ones that I find that are saying no to Wikipedia, because that is what they are taught’ (see **Appendix D**).

Further iterations of this project would need to better tailor to different ages and levels of students; to continue to be cognisant of the divergent – sometimes dismissive – views of Wikipedia amongst ACT teachers, and to instil in students an understanding of reliable sources, as well as robust fact-checking strategies.

Teacher-librarians

In contrast to classroom teachers, teacher-librarians were attuned to and supportive of the promotion of Wikipedia as a fact-checking tool. The project’s academic researchers were invited to present findings at a Wikimedia workshop for librarians in May 2022 and to give a keynote address at the School Library Association of NSW’s Professional Learning Summit in September 2022. In addition, two teacher-librarian publications offered the opportunity to showcase this research. Connections reprised and expanded the *Conversation* article, and Access positively reviewed the booklet *Six Fact-checking Lessons for Kids* at length.

Unexpected outcomes that have emerged as a result of the project

The project has generated two significant unexpected outcomes:

Unexpected outcome A: addressing systemic attitudes to Wikipedia within Australian education

Mathieu O’Neil (with Cunneen and Awino) convened a symposium on 16 September 2022 on ‘Wikipedia and Education in the Time of the “Crisis of Information”’ at The University of Canberra. Participants included UC, USYD, RMIT and Swinburne researchers in Education, Health, Science and Humanities as well as representatives of Wikimedia Australia. The symposium concluded with a panel about future directions. Panel participants have since collaborated to produce a public report, *Strategies for the Recognition and Use of Wikipedia in Australian Educational Settings*, which will be released later in 2023. This report will include the following sections: 1. Recognition of contributions to Wikipedia via micro-credentials; 2. Teacher outreach strategies; 3. Institutional issues around open and closed systems; and 4. Summary of uses of Wikipedia in classrooms.

The potential for an information literacy and Wikipedia micro-credential, developed by UC and Wikipedia Australia stakeholders, is also under discussion: it is planned that this will result in a formal proposal later in 2023.

Unexpected outcome B: International outreach and engagement

Mathieu O’Neil’s News and Media Research Centre colleague, Jee Young Lee, is currently collaborating with UC Faculty of Education graduate, Dr Maya Defianty (Universitas Islam Negeri Syarif Hidayatullah Jakarta), on a Digital Media Literacy project funded by a Republic of Indonesia Ministry of Religious Affairs Grant. Defianty is also involved in developing textbooks for the new Kurikulum Merdeka, aiming to raise Indonesian students’ PISA results to the OECD’s average. A curricular element of particular focus in this endeavour is to improve Indonesian students’ critical thinking. Defianty has expressed keen interest in the Affiliated Schools Media Literacy Project, and considers the resources created for the Affiliated Schools project to be well aligned with objectives for the Kurikulum Merdeka.

Should a future collaborative project go ahead, Defianty recommended targeting Indonesian students in upper secondary education for proposed fact-checking and media literacy lessons; junior Indonesian students have limited access to the Internet and digital technology. Defianty also suggested directly approaching individual teachers to participate, rather than through their school, as her previous research experience indicated that teachers’ keen willingness to be part of a research project is essential. Defianty’s recommendations also suggest that to be successful in the Indonesian context, our lateral reading ‘fact-checking’ approach will need to be part of a larger ‘critical thinking’ framework, drawing on a more traditional understanding of ‘deep’, vertical engagement with informative texts.

3.4 IMPACT

This project generated significant national and international impacts.

Publicly challenging the narrative about Wikipedia's reliability

As we used Wikipedia as a fact-checking resource, we needed to change the outdated perception that it is 'unreliable'. We made a number of highly impactful contributions to public debate, publishing several pieces in *The Conversation*, and speaking on local and national public radio. Two teacher-librarian publications, *Connections* and *Access* extensively covered our approach (more below in Section 3.5).

Progressing the understanding of fact-checking in primary and secondary education

We enhanced understandings and practice of information literacy in ACT classrooms, with resources largely welcomed by our co-researchers and their students:

- We created a successful template for student engagement, based on relatable narratives.
- We pioneered the use of lateral reading, and collected evidence that it had positive effects.
- We identified a key contradiction between 'critical literacy skills' and 'digital literacy skills', with implications for future practice in ACT primary and secondary classrooms.
- A textbook of compiled resources, *Six Fact-Checking Lessons for Kids*, was published in September 2022 and made available online via the Analysis and Policy Observatory.

3.5 ENGAGEMENT, DISSEMINATION AND SUSTAINABILITY

Academic outreach

In 2022 the academic researchers were invited to present the project at the EduTECH conference in Melbourne, at the ACT Association for the Teaching of English, at UC's FADX exhibition, and during the UC Masterclass series. We also presented papers at the UC research festival in June, at conferences in Australia (AATE/ALEA; WOW) and overseas (HKBU, Hong Kong).

At the University of Canberra, we organised and convened a symposium titled: 'Wikipedia and Education in the Time of the "Crisis of Information"' with education, health, science and humanities researchers (UC, USYD, RMIT, Swinburne) as well as representatives of Wikimedia Australia and of Wiki Education (USA).

Lastly, in February 2023, our submission to the Australian Senate Select Committee on Foreign Interference through Social Media, 'Building resilience with information literacy and information health', used this Affiliated Schools project to propose developing the information resilience of Australian citizens.

Media engagement

The project generated high media interest. The opinion piece in *The Conversation* (November 2021) challenged many popular misconceptions about Wikipedia. Excluding two pieces by Michelle Grattan, it was the most read article authored by UC academics in the month of its release, and ranked sixth overall in the following year. At a national level, our ability to 'change the narrative' regarding Wikipedia's reliability for fact-checking in schools was again demonstrated on September 13 2022, when O'Neil was interviewed and prominently featured in an *SMH/The Age* science article titled 'Evidence suggests Wikipedia is accurate and reliable. When are we going to start taking it seriously?'

International impacts

Our 2021 article in *The Conversation* was translated into Indonesian and published in *The Conversation-Indonesia*. A subsequent *Conversation* piece by Mathieu O'Neil and Mike Jensen (August 2022), which identified this project as a response to misinformation, was also translated into Indonesian and published in *The Conversation-Indonesia*. Mathieu O'Neil was interviewed and featured in articles in US outlet *Wired* (October 2022) and the Swiss outlet *MedienWoche* (December 2022).

Mathieu O'Neil presented on information literacy at a Summer Briefing on Information Manipulation in the Indo-Pacific Region, co-organised by the Taiwan-Asia Exchange Foundation and the Information Operations Research Group in June 2022, and at the Bina Nusantara University (BINUS) Writers' Week (Indonesia, November 2022). He

delivered a guest lecture with Dr Maya Defianty at BINUS University in March 2023.

Publications

Textbook

O'Neil, M., Cunneen, R., Carrigy, B., Cheater, R., Margetts, W., O'Brien, M. & Turner, K. (2022). *Six Fact-Checking Lessons for Kids*. DCPC/News & Media Research Centre, University of Canberra. 126 pages.

Submission to parliamentary committee

O'Neil, M., Ackland, R. & Cunneen, R. (2023, Feb.) *Building Resilience with Information Literacy and Information Health*. Submission 21, Australian Senate Select Committee on Foreign Interference through Social Media. News and Media Research Centre, University of Canberra / Australian National University. 20 pages.

Peer-reviewed academic publications

O'Neil, M., Cunneen, R. & Deas, M. (2023) A remedy for epistemic pollution? Public and professional reactions to fact-checking with Wikipedia in Australian classrooms. Forthcoming in C.Y. Song, D. Thussu & D. Margolin (Eds), *Checking the Factcheckers: A Global Perspective*. Advances in Internationalizing Media Studies, Routledge.

Cunneen, R. & O'Neil, M. (2023) 'Truth, Authority and Epistemic Pollution: Critical Literacy in Post-Pandemic English Classrooms'. Submission (tba) for upcoming *English in Australia* 58.2 (2023) 'Literary Studies & Literary Education'.

Press articles

O'Neil, M. & Cunneen, R. (2023) Transparency is the new objectivity: Fact-checking in the classroom with Wikipedia, *Asia-Pacific Journalism Review*, 15 March.

Fitzgerald, L. (2022) Book Review: *Six Fact-Checking Lessons for Kids*, ACCESS, Australian School Library Association, pp. 33-36, December.

O'Neil, M. & Jensen, M. (2022) Tiga alasan disinformasi menyebar dan yang dapat kita lakukan untuk mengatasinya. *The Conversation-Indonesia*, 22 September.

O'Neil, M. & Jensen, M. (2022) Three reasons why disinformation is so pervasive and what we can do about it. *The Conversation*, 12 August.

O'Neil, M. & Cunneen, R. (2022) Digital literacy: Using Wikipedia as a fact-checking tool. *Connections* 121, pp. 8-9, April.

Cunneen, R. & O'Neil, M. (2022) Mahasiswa sering diminta menghindari Wikipedia untuk riset. Padahal, situs tersebut adalah sumber terpercaya. *The Conversation*, 10 March.

Cunneen, R. & O'Neil, M. (2021) Students are told not to use Wikipedia for research. But it's a trustworthy source. *The Conversation*, 4 November.

Potential Future Grants

1. Affiliated Schools Research Project 2023: A 'Spiral Up' to include the co-development of resources with ACT Secondary Teachers;
2. US Embassy public affairs program: Co-building democratic resilience in Australian school libraries (Teacher-librarians in NSW / VIC).
3. Wikimedia Foundation: Indonesia.

3.6 WIDER IMPLICATIONS: A NEED TO DEVELOP INFORMATION RESILIENCE

PRINCIPLES?

There is a current ‘epistemological crisis’ in news and information media, manifested by misinformation and disinformation in the public sphere, such as vaccination conspiracy theories, disinformation about climate change, and misinformation about the war in Ukraine. This crisis necessitates effective media literacy pedagogies in Australian classrooms. Our project has defined information literacy as concerning the correctness of information items, and seeks to guide students to answer a relatively simple question: ‘Is this statement true or false?’ In contrast, current Australian media literacy pedagogies are often more concerned with the way media framings and representations operate. These pedagogies pose numerous, sometimes complex, questions: ‘Who created this message?’ ‘What creative techniques are used to attract my attention?’ ‘What lifestyles, values and points of view are represented in, or omitted from this message?’ ‘Why is this message being sent?’ (Jolls, 2022).

In this project, we have chosen to prioritise and focus on information literacy, rather than navigating multiple, diffuse understandings of media literacy. The development of new, practical tools to help students overcome information challenges is urgently needed. Students need to quickly and clearly identify verifiable answers to fundamental questions about the information they encounter daily online (What is real? Should I trust this?). Three key ‘information fluency’ principles are recommended below:

First Information Fluency Principle: Non-partisanship

To be accepted by students, teachers, parents, and other stakeholders, information literacy tools should not promote, or appear to promote, any social or political perspective. This first principle contradicts the position of many media literacy scholars, who emphasise the roles that ‘critical literacy’ and media literacy play more broadly in facilitating social change and democratisation (see Kellner & Share, 2007). The concepts of critical literacy in the current Australian curriculum are strongly influenced by the work of Allen Luke, who wrote in a seminal paper that the project of critical literacy involved the complex, multifaceted task of “teaching students to use discourses to “read” and critique other discourses, about developing language to talk about language, in ways in which those students whose access to multiple discourses . . . might have been viewed as lacking can be taken as part of their toolkits for making sense of the world” (2000, Luke).

Luke’s ideas are evident in the Critical and Creative Thinking General Capability in the National Curriculum, which asks students to ‘think broadly and deeply’ and to ‘evaluate knowledge’ (Version 8.4) and particularly in the ‘literacy’ strand of the English curriculum, where students are tasked with learning “that texts are influenced by historical and cultural contexts, and particular purposes and audiences” (Version 9.0).

Researchers on this project are sympathetic to the social, democratic and equity aims of the referenced media and critical literacy scholars; however, these positions are problematic in a classroom if they are perceived as partisan. When teaching fact-checking to students, ‘critical engagement’ can easily be re-framed as ‘propaganda’. An educational information literacy for young children must strive for broad community acceptance and appeal; thus, non-partisanship is key. To be clear, ‘critical literacy’ rightly focuses on structures of power and inherent bias in texts, including online media. However, early ‘information literacy’ and fact-checking in schools need to be clearly differentiated skills, and the process of teaching and learning them must be uncontroversial.

Second Information Fluency Principle: Speed

The traditional media literacy and critical literacy approaches take time, and a careful analysis of texts from a variety of perspectives. In the online world, this is ineffective, because disinformation aims to capture our attention, and thus information literacy strategies must be fast. The current most popular information-checking methodology in Australian education uses the memorable acronym of C.R.A.A.P. (‘Is it Current, Relevant, Authoritative, Accurate? What is its Purpose?’). C.R.A.A.P. presents students with a checklist of website design clues, including questions readers might ask themselves when arriving at a webpage, such as: ‘Does this webpage look professional? Are there ads? Is it a .com or a .org? Is there scientific language? Does it use footnotes?’ (see for instance <https://library.csuchico.edu/sites/default/files/craap-test.pdf>).

This checklist approach increases cognitive overload, so that students risk latching onto the most visible signals, resulting in poor decisions; further, these questions no longer lead to proof of reliability. Anyone can design a professional-looking webpage or use spellcheck; an ‘.org’ URL no longer guarantees the credibility of the content (Caulfield, 2020). C.R.A.A.P. is not adequate for our information-rich world, in which a wealth of information creates a

poverty of attention (Simon, 1971). In the ‘attention economy’ time is currency and not to be wasted. Instead, students must acquire the means to quickly decide which claims are worth their attention.

Third Information Fluency Principle: Transparency

A foundational characteristic of the conspiratorial and extremist rejections of ‘elite’ politics, science and news is the notion that cabals are secretly manipulating information. Therefore, information literacy must incorporate the opposite of conspiracy: transparency. This is not a new idea. Members of the Demos British think tank wrote in 2010: ‘Conspiracy theories are a reaction to the lack of transparency and openness in many of our institutions. The more open our institutions, the less likely we are to believe we are living in a conspiring world’ (Bartlett & Miller 2010, p. 39). Transparency has also been identified as a central component for establishing trust in news media. The former Director of the BBC’s Global News Division, Richard Sambrook, suggested that transparency has overcome objectivity as the means to deliver trust in the ‘new media age’. The principle of transparency underpinned this project’s promotion of Wikipedia as the best way for young students to check and verify a dubious claim.

Two essential questions remain unresolved

1. The first is philosophical: how can media literacy education (which by definition is critical of power) accommodate an Information Fluency Principle of non-partisanship?
2. The second is structural: where should media literacy, digital literacy and fact-checking sit within the Australian National Curriculum (English? Media Arts? Civics and Citizenship? Science?).

We intend to continue to engage with colleagues who are grappling with these questions: for instance, Mike Caulfield (Washington State) and Sam Wineburg (Stanford). In Australia, Tanya Notley (WSU) and Michael Dezuanni (QUT), in affiliation with the Australian Media Literacy Alliance (AMLA), have pioneered media literacy research in Australian classrooms. Future generative avenues would include engaging with professional associations teaching and researching information literacy, such as the New South Wales public school teacher librarians’ Information Fluency Framework (NSW Dept. of Education, 2023).

3.7 CONCLUSION AND REFLECTIONS

This project attempted to offer a solution to the issues which arise when information is digitised. The benefits of digitising information include its immediacy and accessibility. Disadvantages include the medium’s volatility - resources such as webpages come and go - and the variable quality of the content.

Our epistemic environment is degraded by active and passive deception, resulting in what philosopher Kim Sterelny (2006) called ‘epistemic pollution’. This mandates the creation of ‘epistemic technology’, that is to say building tools for thinking. It has been clear since the 2000s that the larger the amount of potentially relevant but weakly authoritative information, the more urgent is the need for effective and cognitively viable information processing skills (Taraborelli 2008).

To be cognitively viable, information processing must be adapted to our information-rich world, in which a wealth of information creates a poverty of attention (Simon 1971). In the ‘attention economy’, deep engagement with dubious claims is a poor strategy, because it represents time that could have been spent elsewhere. Our project therefore aimed to teach students a means to quickly decide which claims are worth attention. To do this, we used the ‘lateral reading’ framework developed at Stanford, which contradicts a current predominant idea in Australian education that engaging deeply and critically with online information is a necessary, useful response to epistemic uncertainty. Furthermore, we advocated the use of Wikipedia as a useful fact-checking device, which challenged the distrust of Wikipedia held by many in the ACT teaching community.

Fortunately, these two disruptive ideas did not prevent our project being well received by students and teaching staff, with teacher-librarians being particularly receptive. The project also evinced high interest in the broader community, demonstrated by frequent media and public engagement opportunities. We are confident that our approach is sound, and intend to build on this project by developing several parallel approaches. One new project, currently under review, will focus on the role of teacher-librarians; another, currently in development, seeks to adapt our approach to the Indonesian context. We are hopeful that an application for a new iteration of the Affiliated Schools Media Literacy Program, focusing on secondary education in the ACT, will be favourably received.

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APPENDICES

Appendix A: Financial report

Original budget (approved):

SPECIFIC BUDGET ITEM	ACT DET ASRP	DVCRI Industry CollaborationSeed Funding (internal)	US Embassy, Canberra Australia Funding
	CASH	CASH	CASH
Teaching relief CI Cunneen 0.2FTE (Sem 1, 2022)	\$12,604		
Teaching relief CI O'Neil 0.15FTE (Sem 2, 2021/ Sem 1 2022)			\$23,879
Project manager - Phase 1, UC Level 6.4 including oncosts (200 hours)	\$13,207		
Project manager - Phase 3, UC Level 6.4 including oncosts (200 hours)		\$13,207	
Workshop venue / catering		\$3,000	
Video animation, public report layout		\$9,000	
Printing			\$2,000
Total (excluding GST)	\$25,811	\$25,207	\$25,879
Indirect cost levy			\$6,470
GST amount	\$ 2,581		
Total	\$28,392	\$25,207	\$32,349

Actual expenditure:



Profit & Loss Summary - Actual vs. Budget

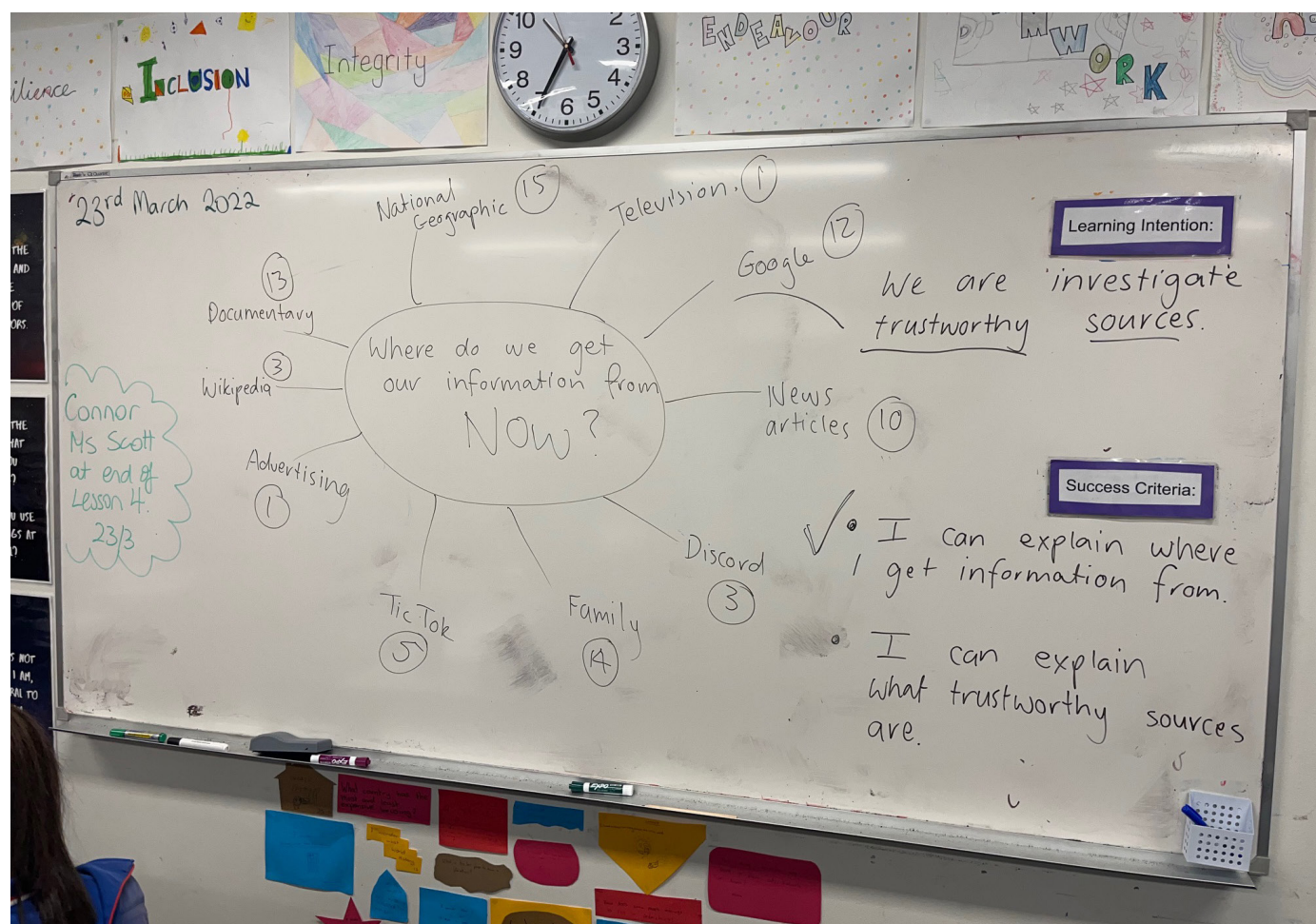
R01293-ASRP - Co-developing a new approach to media literacy pt 1

May

2023

Units: \$'000	YTD Balance			Life Balance		
	Act	Bud	Var \$	Act	Bud	Var \$
REVENUE						
Other Income	-	-	-	-	-	-
Research Income	-	-	-	20,649	-	(20,649)
UC Contribution	-	-	-	-	-	-
Internal Transfers	-	-	-	1,686	-	(1,686)
Gross Revenue	-	-	-	22,335	-	(22,335)
Third Party Partner Payments	-	-	-	-	-	-
Net Revenue	-	-	-	22,335	-	(22,335)
DIRECT EXPENSES						
Salary and Benefits	13,637	-	(13,637)	19,289	-	(19,289)
Occupancy Costs	-	-	-	-	-	-
Depreciation and Amortisation	-	-	-	-	-	-
Other Goods and Services	500	-	(500)	1,787	-	(1,787)
Technology Costs	-	-	-	-	-	-
Direct Charge	-	-	-	-	-	-
Direct Expenses	14,146	-	(14,146)	21,085	-	(21,085)
Net Surplus/(Deficit) after Tax	(14,146)	-	14,146	1,250	-	(1,250)
Capital Expenditure	-	-	-	-	-	-
Balance Sheet	0	-	(0)	(15,396)	-	15,396
20114 - Financial Liability	-	-	-	-	-	-
20101 - Income in Advance	-	-	-	-	-	-

Appendix B: Photos from Harrison School (Senior), during first round of fact-checking lessons



Appendix C: The CANVAS module for Week Four, Workshop Two in Core Literacy (WIT 2022)

Information Literacy: What is it and why do we need it?

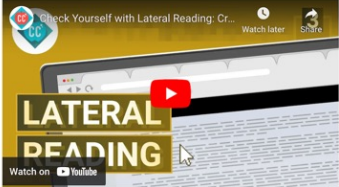
Week Four, Workshop Two Overview

Key questions for this week continued:

- What is critical literacy?
- How do you get critically literate?
- How do you work out what is true and what is false online?

Week Four, Workshop Two Lecture:

Some of you might know John Green as the author of *The Fault in Our Stars*, *Looking for Alaska* and other novels for teens. Here he introduces a concept known as **lateral reading**. You will need to know a bit about lateral reading in order to successfully complete today's activities, so please prioritise watching this video:



The topic of the video below is the **attention economy**, and is slightly tangential - but in order to be a good fact-checker online you need to know about it. It also follows on from some of the work we did yesterday on strategies for reading difficult texts (and holding your focus). I think many of you will find it interesting:



[Watch on YouTube](#)

[Week Three - Workshop Two Slides](#)

[Google doc for our lateral reading exercise](#)

About Wikipedia:

[Students Are Told Not To Use Wikipedia For Research. But It's A Trustworthy Source](#)

[Reading Wikipedia in The Classroom](#)

Other Interesting Readings:

[How to Read the News Like a Fact Checker: A Media Literacy Strategy](#)

[Lateral Reading and the Nature of Expertise: Reading Less and Learning More When Evaluating Digital Information by Sam Wineburg & Sarah McGrew](#)

[Civic Online Reasoning](#)

Appendix D: Teacher co-researchers' attitudes regarding using Wikipedia as a fact-checking tool

Teacher A: It has changed my approach, and that I'm suggesting they could go to the source because I remember when I was doing my teaching degree, that it was shunned or discouraged as a place to go and look, and I thought, well, it's pretty convenient place to come. **Interviewer 1:** When we're talking about Wikipedia specifically, what was your approach?

Teacher B: I flat out said to my kids, we don't use it. And the kids already had said that to me. And so their response is - and it's not something I had taught them, it's something that they had heard - I'd say in year 5. And I still say yep, it's okay to use it, but it's not our number one source of information. And the kids response is because anyone can write Wikipedia, the articles, and that's the extent of understanding. So when I was reading through all the articles about the fact checking, I was like, holy cow, where did this ...

Interviewer 1: there's like a culture shift.

Teacher B: Yeah. ... So I was really quite mind blown actually, to go 'wow, that level of fact checking'. So where did this Urban Teacher myth come from that says, 'No, do not use Wikipedia'?

Interviewer 2: That's what's so interesting, isn't it? And there's all kinds of answers to that ... but when we look at teacher training, I think that's something we should dig deeper into.

Teacher B: I vaguely remember being told it at a PL.

Interviewer 2: Yeah, probably.

Teacher B: Yeah. At a literacy PL. But, and it would have been in the last like, only like probably five years, because I've been teaching for a long time ... But most educators that you would ask would say 'no we don't use Wikipedia'.

Teacher C: Uh, you know, especially for those beginning teachers that are coming in to show them that you know, I think, that they've also been taught at different levels as well, not to use Wikipedia, so they come in with a very like 'we're not using Wikipedia. We're not doing all of that'. To actually be able to change their minds as well, so I think it's something that if you go from the beginning of the year and you're saying 'right when we're looking at researching whatever it is that we may research, this is what we need to do'.

Interviewer 1: my curiosity is piqued ... so you might not be able to speak on behalf of other teachers, but when you say you know, for example, some teachers say 'Oh no, we don't use Wikipedia'. What source do they direct their students to?

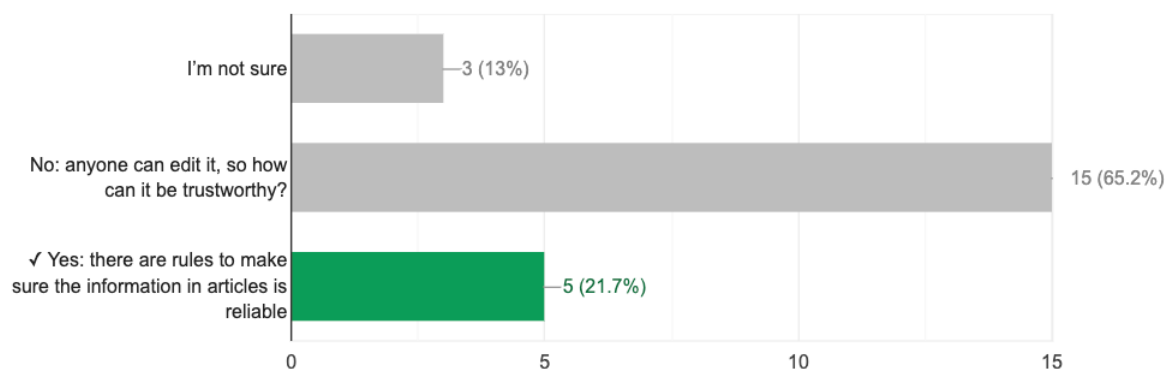
Teacher C: Well, it's sort of like it's this really weird thing ... when I went into one of the classes and I said, 'OK, so let's say they're learning about I don't know, dolphins' ... They'll put dolphins in the search bar and they'll say - the teachers will say - 'do not go to Wikipedia. Look at all the other websites'.

Appendix E: Results of media literacy Google survey questions (before Education Resources)

Should you trust information on Wikipedia?

[Copy](#)

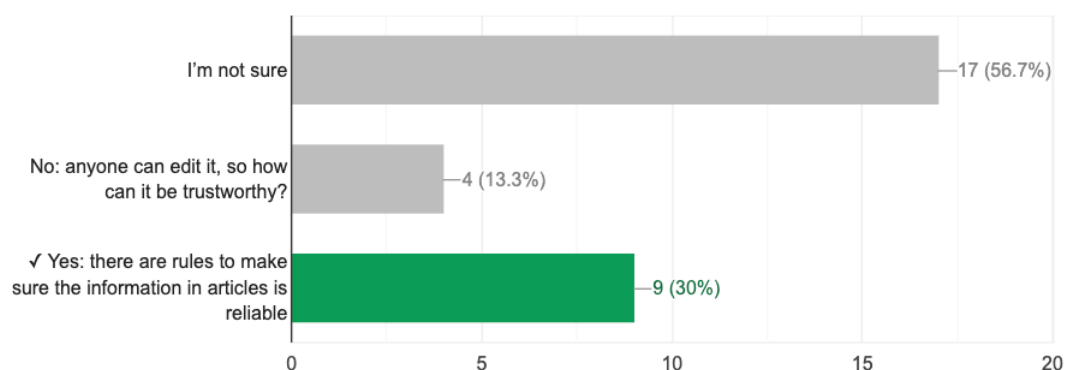
5 / 23 correct responses



Should you trust information on Wikipedia?

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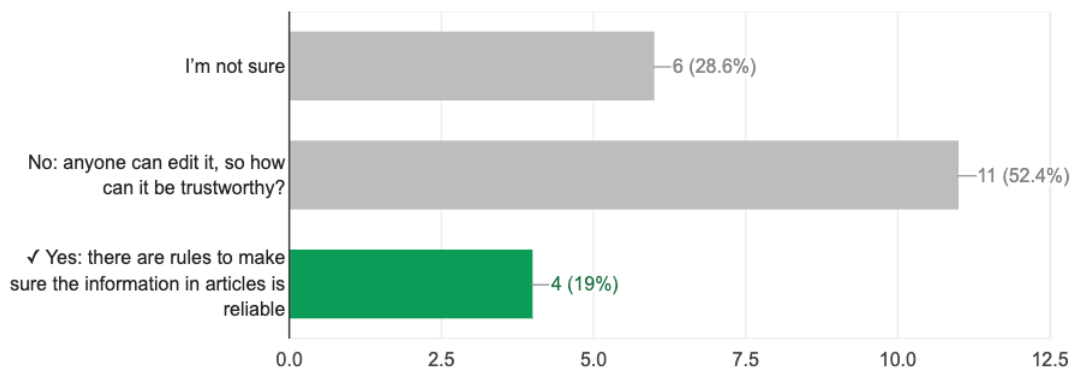
9 / 30 correct responses



Should you trust information on Wikipedia?

 Copy

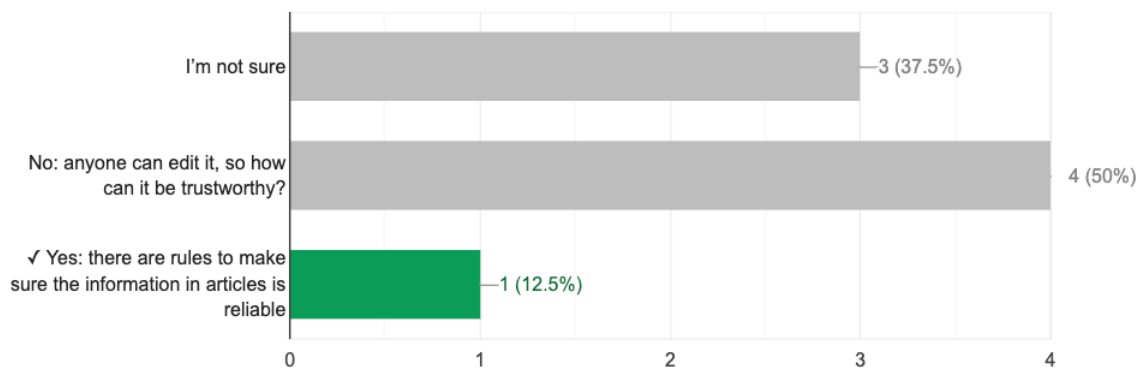
4 / 21 correct responses



Should you trust information on Wikipedia?

 Copy

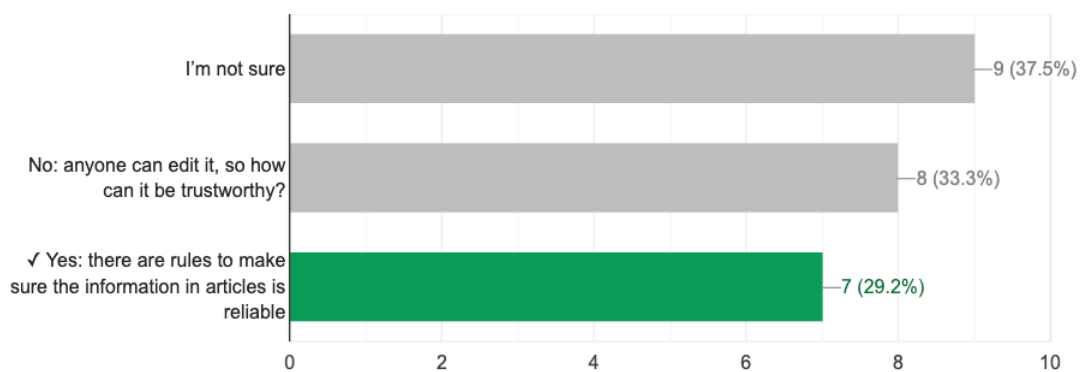
1 / 8 correct responses



Should you trust information on Wikipedia?

 Copy

7 / 24 correct responses



Appendix F: Feedback from teacher-librarians after May 2022 Workshop

QUESTION 1: What was new?

Teacher 1: Looking in-depth at Wikipedia and considering it as a reliable, transparent source of information.

Teacher 3: The program and strategies for checking validity.

Teacher 4: Dis- and misinformation. I never thought about the difference before. CRAAP.

Teacher 5: I suppose all of it for me. It is a new concept for me and I am interested in bringing it into my teaching.

Teacher 6: Relevance of Wikipedia. Aspects of Wikipedia site that showed validity, quality, etc.

QUESTION 2: What surprised you?

Teacher 5: The importance of fact checking.

Teacher 6: Quality controls in the background of Wikipedia.

Teacher 7: Experiences and understanding relating to research for primary school teachers.

QUESTION 3: What do you still have questions about?

Teacher 4: Pathways for teachers to develop their own 'fact checking' literacy skills.

Teacher 7: The transition of these skills from primary to secondary learning environments.

QUESTION 4: Has your opinion about Wikipedia changed? If yes, how?

Teacher 1: Yes. I would now recommend it as a source of information. I would now encourage staff to take a fresh look at it and reconsider their opinion.

Teacher 2: Not really. I always tell the kids they can start there. I think there should be other examples other than just Wikipedia.

Teacher 3: Yes. Wanting to explain and explore further with students. It's worth checking valid pages as Wiki is easy for students to navigate.

Teacher 5: Yes, to use as a source to fact check, how to use Wikipedia and the different 'talk' and history pages.

Teacher 6: Yes ... Far more relevant and a great opening to research for many primary students. My role will be to educate staff.

