One year of DALIDA Data Literacy Workshops for Adults: a Report

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ABSTRACT

In May 2021, during the 2nd Data Literacy Workshop, we reported on DALIDA, a project to design and deliver data literacy discussion workshops for adults in Ireland. While open to everyone, the target audience is adults from socially, economically, or educationally disadvantaged groups. The co-creation element in designing workshops was thus key to ensuring that the workshops appealed to that audience. We previously reported on the project and the results of the co-creation workshops. Now, almost a year later, we report on the delivery of these workshops. This experience paper describes the workshop's structure, elaborates on our challenges (primarily due to the pandemic), and details some of the lessons we've learned. We also present the findings of our participant evaluations. The most important lesson we've learned is that a collaboration between scholars and education and public engagement teams (EPE), where both stakeholders approach the projects as equals, is crucial for successful projects.

CCS CONCEPTS

• **Social and professional topics** → *Informal education*; **Computing literacy**; • **Human-centered computing** → *Social media*.

KEYWORDS

Data Literacy, Public Engagement, Lifelong learning

1 INTRODUCTION

Data literacy is crucial in our data-driven society, especially in a professional context [9], and efforts have been made to determine and recognize the skills and competencies one must develop to become data literate [10]. Given that data literacy is the ability to identify, collect, process, and interpret data to gain and communicate insights, it is clear that data literacy is built upon many diverse skills. Not everyone, however, has had the opportunity to develop some or all of these skills. Yet, these skills are essential to assess and comprehend information presented in various media (such as on government portals, in newspapers, and on social media). Recent studies have shown that data literacy is still complex for most people [4]. The danger is that those people might be misinformed or misled, which may have dire consequences as those people may take ill-informed actions (e.g., voting).

Opportunities for learning about data literacy and honing its related skills are limited outside a professional or educational context. Yet, data literacy is crucial for becoming responsible and contributing members of society. To address the lack of learning opportunities for adults in Ireland, Science Foundation Ireland has graciously funded the DALIDA project, which we presented in [3]. DALIDA, which stands for DAta LIteracy Discussion workshops for Adults, is a public engagement project that aims to design workshops about this topic for that particular audience. DALIDA aims to develop a series of workshops that introduce the concept of data literacy to Irish adults with a focus on adults from socially, economically, or educationally disadvantaged groups. We ensured that the workshops were designed with and for our intended audience via co-creation activities. The workshops are designed to fulfil three aims: to increase awareness and appreciation of data literacy (and the various skills and disciplines involved); to illustrate the importance and relevance of data literacy at the individual and societal level; and and to provide participants a starting point to encourage skill development.

We have been running these workshops for over a year.[1] In this paper, we report not only on the structure of the workshop, but also our experiences after a year. We also provide results from participant evaluations. Our aim with this paper is to share with the data literacy community the lessons we've learnt. To do so, the paper

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[1]This paper's title almost included "Il venait d'avoir un an" (French for "he had just turned one year old"), a tribute to Dalida and one of her iconic songs: "Il venait d'avoir 18 ans".

is structured as follows: Section 2 provides a detailed description of the workshop's structure, Section 3 describes the importance of training to scribes and facilitators, Section 4 discusses some of the challenges we've faced while running the workshop (some of which are due to the COVID19 pandemic), Section 5 reports on the findings of participant evaluations, and Section 6 concludes the paper.

2 WORKSHOP STRUCTURE

In [3], we reported how co-creation was our method for designing the workshops. Before and during those co-creation workshops, both participants of our intended audience and representatives of organizations working closely with said audience acted as "community leaders." It became clear that the topic of "data literacy" was not appealing and that the topic had to be embedded in something more topical. It was decided that mis- and disinformation on social media was a topic that was both topical and accessible to a general audience. Therefore, we rebranded the series of workshops as "DEBUNKED" with the message that data literacy skills can help identify and debunk disinformation. To attract an Irish audience, we wanted a compelling and not too controversial hook. COVID19 was deemed too contentious as the production of vaccines was underway and a sensitive topic. We, therefore, chose to use the Irish Slave Meme as a topic as it pertains to Ireland and is widely used outside the country. Other activities will then refer to and even provide other examples of mis- and disinformation in which data literacy skills can help us identify issues.

While the workshops were initially foreseen to be held for three hours, the challenges of the COVID19 pandemic required us to design a workshop whose format fit both an offline and online event. The biggest constraint was time to counter the so-called "zoom-fatigue"–a tiredness of videoconferencing. We designed a workshop consisting of five activities that workshop facilitators need 1hr. 30 min. to run. This section briefly describes those five activities, their rationale, and how they constitute a coherent whole.

The resulting workshop was then trialed as a pilot. The pilot confirmed that the gist of the workshop seemed to work well, only necessitating clarifications in the script (for future reuse) and switching a few items towards the end of the script to facilitate the flow of the workshop. We also added announcements that pointers and any unanswered questions will be addressed in a follow-up email. That same email contained a link to a questionnaire for evaluation purposes.

Excluding the pilot workshop, we held the workshop for a total of eight times. Though more workshops were planned, some were cancelled due to an important number of people cancelling last minute. Participants were then invited to join another session. No workshops were organized during the summer.

We provide a high-level overview of the workshop's structure and its activities in Table 1. Most activities involved the whole group of participants. When the group of participants is too large, the group was divided in two to three breakout rooms for the activities that required their input.

Preparatory work Potential workshop participants receive an invitation with not only a description of the workshop and its topic, but already with an example of a misleading chart with some supporting text. That example gives the participants a more concrete idea of the workshop's topic. I.e., we make the topic more tangible. We also invite the participant to reflect on two examples, of which the participants will discuss at least one in the workshop. We do stress that this "homework" is not mandatory.

Part 1 The first part of this workshop is meant to *set the scene*. Aside from some organizational details and introductions from the workshop's team, this part consists of one presentation covering: an introduction to the project and the workshops; and a definition and description of data literacy, misinformation, and disinformation. At the end of that presentation, we stress that data literacy can be applied in many domains, even though we will "discuss" and "investigate" it in the context of social media.

Part 2 Part two consists of two activities investigating and discussing memes and memes to spread disinformation on social media. The first activity is a presentation that defines the concept of a meme and the introduction of the Irish Slave Meme. This presentation will not explicitly explain why the Irish Slave Meme is spread but will point out issues and inconsistencies across such memes. The second activity invites all the participants to discuss memes, misinformation, and disinformation. Participants are informed that the discussions are moderated by a *facilitator* and that a *scribe* is writing down the points that are being discussed. We ask participants to share and discuss examples in a safe space. Many of the questions are followed by: "And how does/did that make you feel?" which we found led to more profound and more revealing discussions. This activity aims to get participants acquainted with the format. At the end of the second activity, the scribe synthesizes the discussions and formulates two to three points. These are shared and "signed off" by the group. If the participants were divided into breakout rooms, the scribe would also share these points in the main group. While this is happening, we send around a poll asking participants how they (or someone else) could be misled. The goal of that poll is to keep participants engaged. Answers can often be linked with subsequent activities.

Part 3 This part consists of two activities. The first is a presentation on Ireland and its relation to slavery [1, 5, 8]. This part debunks most, if not all, of the Irish Slaves myth, as one can read in various sources such as [6, 7]. The first presentation on this topic only implied that the Irish were not systematically enslaved. This presentation details Ireland's relationship with slavery and its role in contributing to and facilitating slavery. This presentation also shows how to consult sources to see how those memes can be dunked. While accessible, it is true that this particular domain requires domain expertise to "debunk" those myths. The presentation is therefore followed up with an interactive activity in which participants will discuss examples of mis- and disinformation on other topics (climate change, COVID19, survey data, etc.). This activity also provides an example to look at (the representation of) statistics. The

examples were carefully chosen to be interesting and *self-contained*. I.e., examples that do not require domain expertise in order to identify issues. A scribe again synthesises and reports back on the discussions.

Part 4 The final part of the workshop consists of a presentation on the Irish Slaves Meme's spread: who shares it, and why is it shared. This presentation gives participants an insight into how this type of disinformation tries to undermine the validity of systemic racism. We reiterate the motivation of this workshop's structure during the wrap-up activity and how the various activities come full circle.

Follow-up After the workshop, the facilitator took note of questions that were left unanswered (if any), which will be answered in a follow-up email. Participants also receive an email with a link to a poll and pointers to useful resources for participants. Resources include both pointers to data literacy (in general) and references on Ireland's history with slavery.

3 EPE TRAINING WITHIN ADAPT

The ADAPT Education and Public Engagement (EPE) Team aims to inspire the Irish public to learn about emerging technologies that enhance engagement in our digital world and to reflect on the role of such technologies in our lives. Through projects such as DALIDA, the EPE Team also aims for the same public to participate in and help inform current and future research. The EPE Team is also is responsible for delivering training (e.g. in scribing and facilitation) to researchers in order to increase the pool of skilled researchers in EPE and science communication.[2] The team draws upon that pool for the delivery of activities.

During the inception of the project and the development and delivery of the workshops, we took into account that we had researchers as domain experts and the ADAPT Centre's skilled EPE Team that had to work in tandem. We believe that such collaborations will be key for future EPE activities. In that sense, the EPE Team's responsibility has shifted - gradually but deliberately - to include increasing researcher involvement from an early stage in projects, including proposal writing. The EPE Team now provides its expertise and support to researchers wishing to create and deliver an EPE activity, and it encourages and supports researchers to embed such activities in their research. Examples of such projects reported in [3] and [2].

4 CHALLENGES

While the current pandemic was a challenge in itself, which required us to pivot to an online format when the project was accepted, many of our challenges stem from COVID19. We have already mentioned that online activities were challenges as many battled with so-called ZOOM-fatigue. We aimed to tackle this fatigue by opting for a shorter format at the cost of a limited number of activities and interactions.

Other problems related to the pandemic were:

- The high number of no shows.
- Participants dropping in late or dropping out early;
- and reaching our intended audiences.

At its conception, the workshops were meant to be accessible for free. This meant that people had nothing to lose signing up for the seminars and not participating. We have yet to find a way to deal with that situation, but we have decided to keep the workshops free. We started sending reminders via email and ask participants to let us know if they choose not to participate. We furthermore discussed with community liaisons what dates and time-slots would work best. We found that these discussions did improve our attendance rate but did not prevent no-shows. However, the value of community liaisons is that they know what works best for the community they represent. Workshops have been organized during the morning and the evening. The evening does pose a challenge for adults with children. We cancelled some workshops when the number of people informing us of their absence were too important. Those who would have been present were invited to attend at another date and time.

A minor inconvenience is people dropping in late. Reasons for this included opening the link when the workshops start or the videoconferencing software requiring an update at the most inopportune times. While we limited the workshops to one hour and a half, participants dropped off due to other obligations. Compared to on-site events requiring people to move pre-COVID, we found that people had a more challenging time keeping their agenda-free.

The most important challenge concerning the pandemic is reaching an audience from low socioeconomic and educational disadvantage areas due to the online format. At the project's conception, it was foreseen to hold these events in venues close to these communities (community centres, libraries, etc.). Sanitary measures and the closing of such public spaces made that impossible. Difficulties that our intended audience faces include: access to a computer and decent internet connections, sharing said computer in a family, and help and support. Online advertising also had little to no impact as the best way to reach those communities is via leaflets and community liaisons.

A challenge unrelated to the pandemic is participants questioning the workshop's facts. Whenever a domain expert cannot be present, we show prerecorded presentations that do not last more than 7 minutes. It has happened that a participant questioned the legitimacy of some of the facts presented, to which the facilitators could not provide an answer. It is almost impossible to train facilitators (and scribes) in a specific domain such as Irish history. However, we have learned that we should anticipate the absence of domain expertise and create a separate sheet for such comments and questions. In the future, however, we should also foresee best practices and guidelines for facilitators and guides in dealing with such sensitive situations.

5 PARTICIPANT EVALUATIONS

Overall, the DEBUNKED workshop series was a success in terms of delivery and quality of content. Of a sample of 30 attendees who completed post-workshop evaluation surveys, there was an impressive 100% level of agreement with the statements that the workshop content was interesting, that the speakers were engaging, that breakout room conversations were well facilitated, that they

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[2]The EPE Team also organizes other types of training depending on the EPE activity (e.g., problem solving exercise for children). Science Foundation Ireland (SFI) funded research centres and its researchers must commit to EPE activities. This motivates the need for the EPE Team's task to include training.

Table 1: High-level overview of the DEBUNKED workshop's structure and its activities

Preparatory work (optional)	
Part 1: Setting the scene	Presentation: • Intro to the Debunked Workshops • What is data literacy?
Part 2: Misrepresentation of Irish slave history on social media	Presentation: • What is a meme? • Irish Slave Meme
	Activity: "Why are memes shared?" • A discussion amongst participants to share their experiences and thoughts in a safe space.
	What could trick you into believing a meme, a post, … on social media?
Part 3: The impact of mis- and disinformation, and arming oneself	Presentation: • Ireland and Slavery
	Activity: "What's wrong in this picture?" • Participants discuss two to three examples of mis- and disinformation. The goal is for participants to understand what is wrong, how it can be fixed, and how these are related to data literacy skills.
Part 4: Wrap-up	Presentation: • Why share something that is not true?
	Wrap-up and thanks • Summary of the activities.
Follow-up post-workshop • Answers to any questions. • References to useful resources for participants.	

would be interested in learning more about the topic, and that they thought other adults would be interested in the workshops. Four fifths of respondents learned something new, and a similar level reported that time passed quickly. Only 2 of the 30 respondents reported meeting participants with views that differed from their own, suggesting that the groups were relatively homogeneous in their viewpoints.

Further qualitative evaluation was carried out through semi-structured interviews with a range of stakeholders. A number of these were citizens involved in the co-creation phase, who all appreciated their opinions being taken on board in the development of the workshop. The contributing academics reported adjusting the content and format in response to the input during the co-creation phase. Targeted partnerships were clearly an effective means for the DEBUNKED project to reach its aims, and the workshops delivered in cooperation with NALA[3] and Webwise[4] were a success from the viewpoint of the partnering organisations, providing the communities they serve (primarily educators) a deeper insight into the topic, and an opportunity to discuss the thought-provoking content with one another. Many interviewees mentioned that they enjoyed the multi-disciplinary approach of the DEBUNKED workshops, combining as it did misinformation in Irish history along with misinformation in numeric graphs. For some, the historical element was more memorable, while for others, the graphs were

more powerful - clearly, the dual approach meant that the workshop was relevant and engaging for a range of participants with different interest areas.

Respondents were divided as to whether the online format could work as well as an in-person event. In general those interviewed preferred in-person interactions, but for organisations with members around the country, providing an online workshop like this allows their dispersed network to come together to avail of this resource in a way that would be much more difficult in person, and almost all interviewed recognised that online has some benefit. However, it was widely suggested that the timing of the workshops (mid-late 2021) was unfortunate, as after two lockdowns, public interest in online workshops may have waned. However, one of the organisations interviewed, who run regular webinars stated that they saw similar levels of interest, as well as similar levels of drop-off between registered attendees and numbers actually showing up as they have done for other webinars, indicating that lower levels of engagement may be more to do with "Zoom fatigue" and over-saturation of online trainings, workshops and webinars at this stage of the pandemic, as opposed to lack of interest in the DEBUNKED topic or format.

According to one representative of a partnering organisation, DEBUNKED was "one of the most engaging webinars over the past two years". A further recurring theme in the interviews was the high level of satisfaction with the ADAPT team coordinating and managing the DEBUNKED project, praised by one respondent as "extremely professional". Many of those interviewed saw opportunities for the workshop topic, content or format to be used further

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in their specific sectors, e.g. with Arts & Humanities undergraduate students, with other community or adult education groups, or with wider groups of teachers and educators.

6 CONCLUSIONS

The design of the DEBUNKED workshops involved our intended audience via co-creation, and one pilot workshop was organized to trial the outcome. We then held the workshop eight times. This paper reports on our experiences and participant evaluation of these eight workshops.

We learned that the current PANDEMIC made it challenging to reach our intended audience (adults from low socioeconomic and educational disadvantage areas). As the workshops were free and people were suffering from "Zoom-fatigue," it was difficult for those who registered to commit to them. I.e., the drop-out rate was high.

Notwithstanding the drop-out rate, the participants who participated and filled in the evaluation form were delighted with the workshop's content and format. The latter, of course, takes into account current circumstances. The participants were divided on whether the online format fit this particular workshop.

While only 2 of the 30 respondents reported meeting participants with views that differed from their own, we have encountered situations in which people with different views asked questions (gave comments) to which the team could not provide an answer. These questions did not come up during every workshop but unfortunately happened when the domain expert could not be present. We could not help but feel that a lack of rebuttal undermined the workshop's legitimacy. While other workshops organized by ADAPT aims at bringing conflicting viewpoints together, having participants question a theme of the workshop was a first. We have taken note that training and instructions should include notes on that. While not exhaustive, we should keep track of these questions and comments with factual rebuttals, ready for scribes and facilitators to pull out.

We mentioned training, and that brings us to the final point. This project has shown us that, at least for the ADAPT Research Centre, a dedicated education and public engagement team uniting with researchers are key for successful workshops. Rather than teams driving a workshop, this workshop is one of a few researchers proposing an idea and the EPE Team sharing their expertise. The EPE Team was responsible for training facilitators and scribes. We now envisage the EPE Team organizing training for researchers aiming to develop their EPE activities. At the time of writing, this still happens rather informally with researcher sharing their experiences and, at times, project proposals.

Additional workshops are planned for 2022, and we hope these will be organized in the foreseeable future. To enable others to organize these workshops, we will polish the material we have developed and make those available with accessible licenses.

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