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Using YouTube to seek answers and make decisions: Implications for Australian adult media and information literacy

Uso de YouTube para buscar respuestas y tomar decisiones: Implicaciones de la alfabetización mediática e informacional en adultos australianos

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ABSTRACT

This article argues that it is necessary to develop new approaches to media and information literacy (MIL) education to respond to information seeking on YouTube. The article draws on data from a survey of adult Australians (N=3,510), focusing on their media literacy attitudes, experiences, and needs. A subset of this data focuses on respondents who use YouTube to seek information for a purpose. The article interrogates the data to ask who uses YouTube to access information when they need to make a decision; how these adults' critical dispositions compare to people who do not use YouTube to seek information; and what level of media ability they have compared to other groups. A total of 45% of adult Australians had used YouTube to seek information and make a decision in the month prior to completing the survey. While this group shared a critical disposition towards media and information, they lacked confidence in their own media abilities. We argue that it is necessary to develop new MIL approaches to assist this group. In addition, we argue that this group is more likely to respond to MIL initiatives that are available on YouTube itself and are unlikely to seek MIL learning in community institutions like libraries or community centres.

RESUMEN

Este artículo sostiene la necesidad de desarrollar nuevos enfoques en la educación en alfabetización mediática e informacional (AMI) para responder a la búsqueda de información en YouTube. El estudio se basa en los datos de una encuesta realizada a adultos australianos (N=3.510), centrada en sus actitudes, experiencias y necesidades en materia de alfabetización mediática. Un subconjunto de estos datos se centra en los encuestados que utilizan YouTube para buscar información con algún fin. El texto indaga sobre quiénes utilizan YouTube para acceder a la información cuando necesitan tomar una decisión; cómo se comparan las disposiciones críticas de estos adultos con las de las personas que no utilizan YouTube para buscar información; y qué nivel de competencia mediática tienen en comparación con otros grupos. El 45% de los australianos adultos acudió a YouTube en busca de información o para tomar una decisión durante el mes anterior a la realización de la encuesta. Aunque este grupo compartía una disposición crítica hacia los medios de comunicación y la información, carecía de confianza en sus propias habilidades mediáticas. Se argumenta que es preciso desarrollar un nuevo planteamiento de la AMI para ayudar a este colectivo. Además, se considera que este grupo es más propenso a responder a las iniciativas de alfabetización mediática e informacional que están disponibles en el propio YouTube y que es improbable que busque la alfabetización mediática e informacional en instituciones comunitarias como bibliotecas o centros cívicos.

KEYWORDS | PALABRAS CLAVE

YouTube, media and information literacy, information literacy, information seeking, social media, adult education.
YouTube, alfabetización mediática e informacional, alfabetización informacional, búsqueda de información, redes sociales, educación adulta.

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1. Introduction

The ability to access, use, create and share information via a range of media formats online is increasingly a prerequisite for full participation in society. The persistent development of digital technologies, and the way we use them, demands ongoing learning throughout our digital "learning lives" (Sefton-Green & Erstad, 2016). The concept of media and information literacy (MIL) has received considerable attention in recent years as governments, policymakers, public institutions, and educators have sought to consider the skills, knowledge, and abilities citizens need to thrive online while avoiding the pitfalls of mis- and disinformation (Gagliardone et al., 2015; European Union, 2021; Rasi et al., 2019). Media literacy is defined as the knowledge, skills, and competencies that are required to access, use, analyse, create, and act upon media and to think critically about how media work, how they represent the world, and how they are produced and used (Buckingham, 2019). MIL builds on media literacy to include information literacy and is holistically described as "an interrelated set of competencies that help people to maximize advantages and minimize harm in the new information, digital, and communication landscapes" (UNESCO, 2023).

MIL education is constituted in a range of ways: as formal classroom experiences, as part of after-school programs, as community-based programs (for instance, in libraries and community centres), and as self-directed learning in online contexts. While academic research examines the role and impact of media literacy interventions, this research mostly focuses on formal education in school classrooms or more broadly focuses on young people, rather than adults (Rasi et al., 2019). This means that far less is known about how adult MIL can be effective for different groups or categories of adults, including through both formal and informal learning.

To better understand adult media practices, skills, attitudes, and abilities in the Australian context, we designed and implemented a national survey (Notley et al., 2021). In this article we focus on a significant finding from the survey which highlights the widespread use of YouTube to access information. A total of 45% of adults said they had used YouTube in the month prior to the survey when they needed to seek information to make a decision. Our choice to focus on decision making was motivated by our desire to understand intentional information seeking. That is, we were not interested in information seeking for its own sake, but rather, information seeking for a specific purpose. The specificity of how people access information online requires that educators and policymakers, and the digital platforms themselves, respond with relevant and appropriate MIL strategies, advocacy, and initiatives. In the case of YouTube, educators need to consider not just the kind of information people access on the platform, but how the information is presented in video by contributors and how YouTube as a platform mediates the availability and visibility of information.

This paper examines existing literature about online search and information retrieval, with a focus on the use of social media, especially YouTube, and how MIL necessarily evolves in response to digital media technologies. It then goes on to provide a brief overview of our research questions and methods before presenting key findings from our survey that highlight the difference between three groups: (a) adults who reported they used YouTube to seek information when they needed to make a decision; (b) adults who did not use YouTube in the past month; and (c) adults who reported using the platform, but not for information seeking. The purpose of this analysis is to consider the need for specific MIL initiatives for those who use YouTube to seek information to help them make a decision. Finally, we discuss our findings and use these to inform possibilities for approaches to platform-informed MIL initiatives.

2. Online information seeking and media and information literacy

Academic research in the field of information science has long argued that everyday information-seeking practices are deeply embedded in people's everyday lives and their social networks (Marchionini, 1997; Sundin et al., 2017; Noble, 2018). In addition, research about online information-seeking practices shows that users ascribe reliability and credibility to information based on a range of factors. This includes an assessment about who produced and published the information (Hargattai, 2010; Pires et al., 2022), who directed them to the information (Hargattai, 2010), the number of followers a social media content producer has (Pires et al., 2022), or how highly ranked information is by search engine results (Kammerer

& Gerjets, 2012; Pan et al., 2007). Other research shows that both political ideology and pre-existing beliefs (Brewer & Ley, 2012; Halpern et al., 2019) can influence people's judgements about the quality and veracity of information.

Information seeking also occurs in specific socio-technical environments. Since information-seeking has become embedded within other activities online—such as watching videos for entertainment or interacting with friends—people are now more likely than before to encounter it incidentally, while they are doing other things. The concept of "peer pedagogies" (Dezuanni, 2020) refers to instances where knowledge and skills are shared by online celebrities or "micro influencers" (Abidin, 2018) as an aspect of the content they produce for their fans (Lozano-Blasco et al., 2023). This kind of informal and incidental learning can be perceived as positive and serendipitous (Lange, 2019; Pires et al., 2022). It can also be problematic. This is particularly the case when it is influenced by the algorithmic design of digital platforms which may be informed by an individual's prior search attempts; their level of engagement with media; their geographic location; personal information about them that has been provided to or obtained by a platform (Dolcemascolo, 2016; Wardle & Derakshan, 2017; Noble, 2018); as well as by what content is being prioritised (or deprioritised) by the host platform (Crawford & Gillespie, 2016; Mohan, 2021). While algorithmically influenced information seeking can be beneficial by providing targeted and relevant information, it can also perpetuate prejudice and reinforce racism (Bishop, 2018; Noble, 2018; O'Neil, 2016), reinforce stereotypes, increase the visibility of poor-quality health information (Szmuda et al., 2020), and promote the spread of false, misleading, and malicious news about unfolding events (Vosoughi et al., 2018).

Another area of investigation that considers the links between MIL and information seeking has focused on how literacies across various modes – written and spoken, visual, moving images, audio-based media and interactive media – require an expanded understanding of the concept of literacy (Merchant, 2009; Koltay, 2011; Lankshear & Knobel, 2011). "New literacy" approaches recognise that websites and digital media platforms such as Facebook, YouTube, Instagram and TikTok require literacy practices across multiple-modes and in a multiplicity of socio-technical and cultural contexts (Witek & Grettano, 2012; Simsek & Simsek, 2013; Newman 2015; Lange, 2016; Dezuanni, 2020). Lankshear and Knobel (2011: 28-29) argue that new literacies in digital contexts – which they refer to as being "post-typographic"– are ontologically different to alphabetic and print-based communication and information contexts. Drawing this research together suggests that information seeking on a digital platform like YouTube requires a range of complex MIL-related abilities. Information is not just "sought" and used. Rather, information is constructed, deployed, and iterated and requires not just one "ability" but many abilities brought together in sophisticated ways. As Burgess and Green note:

Being "literate" in the context of YouTube, then, means not only being able to create and consume video content, but also being able to comprehend the way YouTube works as a platform, within an architecture that has affordances and constraints, and with a culture that has competing social and ethical norms and cultural conventions (Burgess & Green, 2018: 86).

The kinds of literacy outlined by Burgess and Green are not readily available as MIL knowledge and skills (Dezuanni, 2021). As they currently exist in schools, universities and libraries, MIL knowledge and skills were largely conceived of in a pre-internet context. In this pre-digital era, information gatekeepers such as publishers, journalists, and editors were generally subject to national laws and regulations and their reputation was at risk if they published false information (Bruns, 2019). Today's information gatekeepers on platforms like YouTube – often taking the form of Influencers or microcelebrities – are very different. People now need to make more frequent judgments about who and what to trust. Additionally, entertainment-focused media and information-focused media are now far more intertwined and are arguably far more collapsed on platforms like YouTube than was the case with traditional media (Hurcombe, 2022), making it more difficult for MIL educators to provide generalised instruction about how to decide who and what systems and actors to trust online.

In a more general sense, many international studies show that MIL necessarily evolves as a field of scholarship and practice as media forms and technologies change. For the past decade, scholarship has argued that media literacy is closely tied to emerging digital competences; and that new media and

technologies necessarily require the development of new MIL skills (García-Ruiz et al., 2014). Valverde-Berrocoso et al. (2022) demonstrate through a systematic review of literature that MIL is central to responses to misinformation in digital contexts in a range of ways.

Other scholarship shows how conceptualisations of MIL have continued to evolve in response to misinformation and fake news (Samy-Tayie, et al., 2023). It is in this tradition of recognising how MIL must evolve as technologies evolve, that the emergence of information seeking on YouTube represents an important new area for scholarly consideration. MIL must be theorised in new ways that incorporate knowledge emerging in internet studies and studies of digital media culture.

Over the past decade, YouTube has emerged as a dominant platform used for a range of media including news and information, and it is increasingly used for self-education (Barry, 2016; Burgess & Green, 2018; Pires et al., 2019). Researchers have explored how YouTube is used for information seeking in everyday life and in relation to individuals' interests, passions, and entertainment pursuits (Burgess & Green 2018; Cunningham & Craig, 2017). YouTube has also received significant academic attention as an information resource used by school or university students to supplement their education or to support them with their study or homework (Asselin et al., 2011; Bembenutty, 2011; Bhatia, 2018; Moghavvemi et al., 2018). Other research has examined students' use of YouTube to learn about issues and topics of interest outside of school or university (Lange, 2019; Cunningham et al., 2016; Pires et al., 2022). However, far less research examines how YouTube users apply critical thinking and analysis to determine the quality and veracity of informational videos and how they construct and negotiate the meaning of video content (Lange, 2019), particularly when it comes to adults. This paper contributes to this emerging body of research about how YouTube is used to seek information and it considers how platform specific research can inform the design and implementation of appropriately responsive MIL initiatives.

3. Methodology

The departure point for this paper is the finding in our survey (Notley et al., 2021) that YouTube is a 'go to' source for information for a significant number of adult Australians. We developed the following three research questions to guide our further interrogation of the data:

- RQ1: Who uses YouTube to access information when they need to make a decision?
- RQ2: Are adults who use YouTube to help them make a decision different in their critical disposition toward media engagement from people who don't use YouTube for this purpose?
- RQ3: For those adults who use YouTube to seek information, what level of media ability do they have when compared with other groups?

These research questions firstly support understanding the characteristics of those people who use YouTube in the context of decision making (RQ1) to inform the demographic focus of MIL initiatives. By interrogating this group's critical disposition toward media (RQ2) and their media abilities (RQ3), we complement previous investigations of "how" YouTube is used in the context of information seeking (Burgess & Green, 2018) to move toward understanding their level of media literacy and how best to design MIL initiatives.

Table 1. Summary respondents

Variables		N	%
Age	18-29	771	22
	30-44	941	27
	45-59	867	25
	60+	931	27
Gender	Female	1,784	51
	Male	1,709	49
	Gender diverse	18	0.5
Education	Non-tertiary	2,632	75
	Tertiary	878	25
Total		3,510	100

The data is taken from a national online survey of Australian adults (N=3,510) conducted in November and December 2020 as part of a broader project examining MIL (Notley et al., 2021). The aim of the survey was to address a knowledge gap about adult Australian media practices, attitudes, dispositions, abilities, and needs. The survey was conducted online and administered by a large Australian panel-

based survey provider, with the sample selected to be representative of the Australian population by using demographic quotas set according to the Australian Bureau of Statistics 2016 Census data for age, gender, State and Territories, and education level. The final dataset of responses was weighted to ensure the sample was representative across these four demographic characteristics. A summary of the final weighted respondents is provided in Table 1. The survey received ethics approval from Western Sydney University.

3.1. YouTube use

A categorical measure of YouTube use was obtained by classifying participants into a) non-users, b) general users and c) those who also used YouTube in the context of decision making. This latter group was identified by presenting participants with a list of nine online sources and asking which, if any, they had used in the past month to look up information when they needed to make a decision. The list included six generic types of sources ("government websites"; "news media websites"; "online forums"; "search engines"; "social media"; and "user reviews"), two specific platforms ("Wikipedia"; and "YouTube") and the option for participants to indicate their use of 'Other' platforms not covered by our list. Wikipedia and YouTube were provided as separate options as they consistently rank among the top 10 websites used by Australians (Tran, 2017; Alexa, 2022), yet their content is not readily accounted for by the six generic types of sources which were also provided as options. Using this measure, 45% of participants were classified as using YouTube in the context of decision making.

The remaining 55% of participants who reported that they did *not* use YouTube for decision making were classified into the two remaining categories – non-users and general users (who used the platform but not to inform their decision making) – by asking "How often did you use the following social media platforms in the past week?" YouTube was an option among these platforms, with 32% indicating they did not use YouTube and 22% indicating they had used the platform in the past week.

3.2. Critical disposition to media

To measure "how critical" the respondents were in their use of media as part of our second research question, we asked four questions about the importance they gave to related critical MIL outcomes in their lives. Whereas other media literacy studies (Orhan, 2023) have used generic scales to measure critical thinking dispositions, our interest was to develop a measure which specifically related to people's use of media. A five-point scale of importance (1=not important at all; 5=extremely important) was used to measure how important it was for respondents to: 'think about and reflect on your own media use'; 'understand how media impacts and influences society'; 'know how to recognise and prevent the flow of misinformation'; and 'know how to think critically about the media you consume'. The sum of importance scores across all four questions was used as the variable. Aggregate scores ranged from 4 to 20, with a mean of 14.8, a standard deviation of 3.2, and a Cronbach's alpha value of α=0.82.

3.3. Media ability

To investigate the media abilities of participants as part of our third research question, we used a proxy measure which asked respondents about the confidence they had in their media ability. We asked the question "Imagine a friend needs your help. How confident are you to help them with these tasks?" for 12 media activities (Notley et al., 2021). The use of an indirect question sought to reduce social desirability bias (Fisher, 1993) and it corresponds to the Norwegian Media Authority's approach to measuring abilities (Medietilsynet, 2019).

Three of the 12 items were selected as relevant to our current study's interest in the people's ability to make decisions in the context of online media usage: "Check if a website can be trusted"; "Check if information they found online is true"; and "Find information they need online". Responses were recorded using a five-point scale of reported confidence (1=Not confident at all; 5=Extremely confident). The sum confidence score across the three selected questions was used as the variable. Aggregate scores ranged from 3 to 15, with a mean of 9.6, a standard deviation of 2.9 and Cronbach's alpha value of α=0.85.

3.4. Online activity

To obtain a measure of how active participants were online, we presented people with a list of nine activities and asked which, if any, they had done in the past month. The list of activities were: "Posted something on social media"; "Liked/rated/commented on something on social media"; "Shared other people's content online"; "Created a group on social media"; "Made a video and shared online"; "Made a meme or gif and shared online"; "Made/built/modified a website, blog, vlog (video blog)"; "Shared my own music online or my edit of other people's music (e.g. by mixing tracks)"; and "Live streamed video (e.g. on Facebook Live, YouTube Live, "Live" on Instagram Stories)". The number of different activities undertaken in the past month was used as the variable. This ranged from 0 to 9, with a mean score of 2.0 and a standard deviation of 1.7.

3.5. Control variables

Age was included as a continuous control variable, while gender ("female" as reference level) and education level ("Non-Tertiary" as reference level) were both included as categorical control variables in Bayesian regression models. Table 2 provides a summary of all independent variables included in the model.

Table 2. Summary independent variables

Variable	Type	Distribution
Age	Continuous	Mean=47.0 ; SD=17.0
Gender	Categorical	Female=55.7% (unweighted)
Education Level	Categorical	Low/Medium=60.1% (unweighted)
Online Activity	Continuous	Mean=0; SD=1 (scaled)
Critical Disposition to Media	Continuous	Mean=0 ; SD=1 (scaled)
Media Ability	Continuous	Mean=0 ; SD=1 (scaled)

4. Analysis and findings

To assess the factors that were significant in determining who is more likely to use YouTube in decision making we applied a multinomial logistic Bayesian regression model using the brms package (Bürkner, 2017) in R. Parker et al. (2015) point to a range of advantages which Bayesian models offer over frequentist approaches – such as the straightforward nature of interpretation – with such models becoming more frequently used in social science research. The participant's category of YouTube use was treated as the dependent variable. The independent variables of online activity, critical disposition to media and media ability discussed above were standardised by conversion to Z-scores. The model was specified using diffuse priors and is detailed in Table 3. MCMC diagnostic plots on this fitted model indicated no evidence of non-convergence or autocorrelation.

Evidence ratio scores were calculated for each main effect by computing the posterior probability that the effect size is greater than zero (a one-sided hypothesis in the direction suggested by the fitted estimate) against its alternative. Model performance, measured using Area Under the Curve (AUC), achieved a score of 0.73, which indicates moderately good predictive capacity of the model to classify people's usage of YouTube according to our three categories of general user, decision-making user, and non-user of YouTube. In addition to the model being detailed in Table 4, the conditional effect size for each independent variable can also be observed in the plots in Figure 1 (see Appendix 1 at https://doi.org/10.6084/m9.figshare.22811030).

To compare people who used YouTube to seek information when they needed to make a decision with other groups, we examined this group's demographic characteristics. Among all respondents, 45% said they used YouTube to make decisions, 22% used YouTube for general purposes only, and 32% of respondents did not use YouTube (Table 3). There were differences across demographic variables such as gender, age and education. Men were far more likely to use YouTube to make decisions compared to women (53% vs 38%, $X^2(2, N=3,492)<.001$). While 60% of those under the age of 35 were using YouTube to make decisions, this number dropped to 39% among those aged 35 and above ($X^2(2, N=3,510)<.001$). Those with high education (tertiary and above) were more likely to use YouTube for decision making (56%) compared to those with low or medium education levels (56% vs 42%, $(2, N=3,510)<.001$).

Table 3. YouTube usage type by demographics, % (person residual)							
	All respondents	Gender		Age		Education	
		M	F	U35	35+	Low/medium	High
For decision making	45	53 (4.74)	38 (-4.64)	60 (7.24)	39 (-4.77)	42 (-2.76)	56 (4.77)
General use	22	21 (-0.72)	23 (0.70)	28 (3.95)	20 (-2.61)	22 (-0.58)	24 (1.01)
Non-users	32	26 (-5.01)	39 (4.90)	12 (-11.87)	41 (7.83)	36 (3.75)	20 (-6.50)

The multinomial logistic regression showed that each of the independent variables (Table 4) used in the model were statistically significant in predicting people's category of YouTube usage. As each variable increases, people are more likely to move from being non-users, to general users, to those who had used YouTube in the context of decision making. The strongest predictor is 'online activity', which reflects the number of different types of online activities an individual had participated in over the previous month. People who engaged in fewer types of online activities were, unsurprisingly, much more likely to be non-users of YouTube.

The model also shows that the level of importance people give to their critical engagement with media has a smaller but significant association with the likelihood of people's YouTube usage type. Those who place greater importance on having a critical engagement with media were more likely to have used YouTube in the context of decision making. Conversely, those who place the least importance on being critical media consumers were more than twice as likely to be non-users of YouTube. Having a higher level of confidence in one's own media ability is also associated with different usages of YouTube, however, the effect size for this variable is considerably lower and is only statistically significant in distinguishing the use of YouTube for decision making from non-use of YouTube. This suggests that while people who use YouTube for decision making may be more likely to have an appreciation for and awareness of issues relevant to media and information literacy, they do not necessarily have a correspondingly higher degree of confidence in their MIL abilities.

All three control variables included in the model – age, gender, and education level – also had a significant effect on the categorisation of people's usage of YouTube. Tertiary educated people, men and younger populations all show increased likelihood of using YouTube in the context of decision making. This trend is particularly pronounced in the case of men, who are nearly three times more likely (log-odds 1.03; odds-ratio of 2.8) than women to use YouTube for decision making.

Table 4. Predicting YouTube usage type, Bayesian Multinominal Logistical Regression							
Independent Variable	Dependent Variable	Est.	Error	CI Lower	CI Upper	E/R	P/P
Age	General User vs Non-User	-0.04	0.00	-0.05	-0.04	Inf	1.00 *
	Decision-making vs Non-User	-0.04	0.00	-0.05	-0.04	Inf	1.00 *
Gender (Male)	General User vs Non-User	0.67	0.11	0.49	0.85	Inf	0.67
	Decision-making vs Non-User	1.03	0.10	0.87	1.19	Inf	1.00 *
Education Level (Tertiary)	General User vs Non-User	0.67	0.11	0.49	0.85	Inf	0.67
	Decision-making vs Non-User	0.45	0.10	0.27	0.60	Inf	1.00 *
Online Activity	General User vs Non-User	0.67	0.11	0.49	0.85	Inf	0.67
	Decision-making vs Non-User	0.76	0.06	0.66	0.85	Inf	1.00 *
Critical Disposition to Media	General User vs Non-User	0.30	0.06	0.21	0.40	Inf	1.00 *
	Decision-making vs Non-User	0.43	0.05	0.35	0.52	Inf	1.00 *
Media Ability	General User vs Non-User	0.05	0.06	-0.04	0.15	5	0.83
	Decision-making vs Non-User	0.13	0.04	0.04	0.22	147	0.99 *

Note. Est=Estimate; CI Lower/Upper=90% credible interval range; E/R=Evidence ratio; P/P=Posterior probability. * Indicates that the posterior probability exceeds 95% for a one-sided hypothesis of an effect size greater than zero in the direction of the estimate.

5. Discussion

Our finding that 45% of Australian adults turn to YouTube to access information when they need to make a decision is significant and represents a change in how information is accessed compared to during the pre-digital media era. It suggests that we need to strive to understand the implications for MIL and that MIL must continue to evolve as individuals' media and information practices evolve. Encouragingly, our finding that those who place greater importance on being critically engaged with media are more likely to have used YouTube for decision making suggests that this group of people is likely to be positively disposed to MIL if they are provided with relevant learning opportunities. Finally, our finding that these

same information seekers do not necessarily have a high degree of confidence in their own MIL abilities suggests that efforts to improve MIL continues to be important in digital contexts like YouTube use.

It is somewhat surprising that adults who frequently use YouTube for information seeking have a higher critical disposition towards online environments, whilst simultaneously they lack confidence in their own media abilities. Drawing on media education theory suggests that this lack of confidence may be due to the distance between these users' "spontaneous" (everyday) knowledge and "scientific" (conceptual) knowledge (Buckingham & Sefton-Green, 1994). That is, these users may have confidence in their use of the online environment due to regular online participation, but they have not learnt specific concepts and ideas to allow them to confidently explain their knowledge to others, or to deeply reflect on their own participation. Drawing on Vygotsky's (1987) theorisation of learning to theorise media education and learning, Buckingham and Sefton-Green (1994) suggest scientific concepts "are characterised by a degree of distance from immediate experience: they involve an ability to generalise in systematic ways" (Buckingham & Sefton-Green, 1994: 148). This suggests MIL efforts may need to assist individuals to systematise and distance themselves from their existing media experiences. The kinds of YouTube-specific "scientific" knowledge that needs to be developed by frequent YouTube users would include knowledge about how algorithms work, knowledge about media languages, particularly visual literacies (since YouTube is a visual medium), and platform-specific knowledge, such as how communities and relationships form and are sustained on the platform and how the platform collects and uses people's data. They would also need to learn about specific issues that arise on the platform resulting from the platform's design, including issues relating to misinformation, accuracy, and fairness in processes when representing people, places, and ideas.

A consideration of how MIL knowledge must evolve to address YouTube is a clear instance of how MIL continues to change in response to new digital media and technologies, as outlined in the literature review above. To be responsive, MIL approaches must include new approaches to media and communications analysis if it is to remain relevant to contemporary media users and information seekers. An evolved form of MIL in the context of YouTube requires specific knowledge and understanding of this platform as a socio-technological system (Striphas, 2015). This means knowing about visual communication and design systems, including the visual languages associated with video-based storytelling such as how camera shots, angles, lighting, editing, animation, and sound impact meaning (Buckingham, 2013). It requires understanding of the intent and implications of online trends, memes, and micro-genres of entertainment (Abidin, 2018). It includes knowing how particular online communities circulate and socialise content and use it in relational, social, cultural, and political ways (Dezuanni, 2020); alongside an understanding of the implications of representing ideas, people, places, events, and practices in particular ways, in written and visual form (Thomson, 2019). It also includes understanding how specific platforms function to make certain kinds of experiences available (or not) to users (Nichols & LeBlanc, 2020).

In addition to the need to develop new forms of MIL knowledge and skills to respond to YouTube, it is also necessary to develop new forms of pedagogy and new sites of learning. Given that YouTube information seekers are more likely to be tertiary educated and younger, certain kinds of MIL interventions will more be appealing and effective than others. People in this user-profile are unlikely to attend formal community-based MIL education opportunities. Indeed, our survey shows that only a very small percentage of adult Australians seek assistance for MIL in spaces such as libraries and community centres, while they are far more likely to engage and learn new media skills and abilities online (Notley et al., 2021). Given this, one of the best opportunities for MIL education for these users is likely to be on the social media platforms themselves.

There are already existing examples of MIL being made available in engaging and platform-relevant ways on YouTube. For instance, Minecraft Let's Player Stampylonghead is a highly popular 'family friendly' YouTuber (with over 10 million subscribers as of Jan 2023) who complements his Minecraft and gaming videos with a series of videos about the internet, YouTube as a platform, Minecraft as a gaming company, and issues related to online safety and misinformation (Dezuanni, 2020). In essence, Stampylonghead's videos are a form of media education that targets children and young teenagers who are Minecraft fans, though these videos are not labelled this way. Another example is from YouTube pioneer John Green,

who has produced a popular Crash Couse YouTube series (with over 14 million subscribers as of Jan 2023) including "Introduction to Crash Course Navigating Digital Information #1" (Green, 2019), which addresses misinformation. This course, which is framed as an MIL initiative, was developed in partnership with Mediawise, which is part of the Poynter Institute, a non-profit journalism school, as well as with researchers from the Stanford History Education Group. The initial video in the series has over 525,000 views suggesting the series has been relatively popular. There are many other examples available that may serve as templates for how 'in-platform' MIL interventions can be made engaging for frequent YouTube users.

6. Conclusions

We recognise that the quantitative survey findings outlined in this article provide just one way to inform the design and delivery of MIL interventions for adults who use YouTube to inform their decision making. Nonetheless, the data reveal significant and important insights about the needs and practices of adults who use YouTube to inform their decision making, being highly significant given that they result from a robust and large sample of the Australian adult population. Future research should examine MIL initiatives more systematically on YouTube. This research should consider the pitfalls, challenges, and benefits of implementing MIL initiatives on commercial social media platforms in partnership with influencers and other actors who already have a large following of engaged users. In addition, qualitative research can extend the findings by understanding how adults use YouTube to make decisions including how they critically analyse information that is embedded within video and how they combine this with other data and knowledge sources.

The survey findings presented in this paper show that YouTube is used widely by adult Australians to seek information and to inform decision making, especially among younger, well-educated, and male adults. While the survey suggests that these YouTube users are more likely to have a stronger disposition toward critical thinking and be more active online, they are not more likely to be confident in their own media abilities than people who used YouTube but not to inform their decision making. To be relevant, effective, and meaningful, MIL education efforts need to be informed by people's actual information seeking and media use. Regardless of where information comes from, or what form it takes, people need to be able to carry out critical analysis and to make timely and reasoned judgements about whether the information is reliable and trustworthy.

We suggest that MIL efforts need to be both context and technology specific. This is essential because the shift from "spontaneous" to "scientific" knowledge necessary for MIL to be developed (Buckingham & Sefton-Green, 1994), requires specificity and contextual nuance. In addition, the places and spaces where MIL learning takes place are highly relevant and important. Formal and informal MIL Initiatives available on YouTube suggest that efforts are more likely to be successful when they address specific audiences in ways that are familiar and accessible and which are embedded in community cultural norms and practices. This requires careful and well-designed interventions that ring-true to different groups or categories of users.

Authors' Contribution

Idea, T.N., M.D., S.C., S.P. Literature review (state of the art), T.N., M.D., S.P. Methodology, S.C., S.P. Data analysis, S.C., S.P. Results, T.N., S.C., S.P. Discussion and conclusions, T.N., M.D. Writing (original draft), T.N., M.D., S.C., S.P. Final revisions, T.N., M.D., S.C. Project design and sponsorship, T.N., M.D., S.P.

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