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Digital Literacies and Video-Sharing Platforms in Early Childhood: A Scoping Review

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Abstract: *An increasing number of young children are accessing the Internet daily, with this practice often debated and uncomfortable for parents/carers and early years practitioners. Often absent from such debates is how the digital literacies of young children may be supported in the face of the increasing ubiquity of Video-Sharing Platforms such as YouTube and TikTok. To provide an overview of evidence concerning the digital literacies of children below 6 years old as experienced through interactions with Video-Sharing Platforms a scoping review was undertaken. Searches identified 234 potentially relevant publications, with four meeting inclusion criteria. Current understandings of the digital literacies of children below 6 years old in the context of Video-Sharing Platforms were analysed, as were how these digital literacies were experienced by supporting adults. This review contributes to the ongoing discourse on early childhood education and technology. By offering insights into the evolving landscape of digital literacies for young children, it highlights knowledge gaps and sets an important research agenda.*

Keywords*: Digital Literacies; Early Years Education; Scoping Review; Young Children, YouTube Kids; Video-Sharing Platforms*

Introduction

Supporting young children, aged 0-6 years old, to acquire the literacies needed to begin to play, learn, participate and socialize, and to do so in an increasingly autonomous manner, are important challenges towards becoming active citizens in a postdigital world (Nascimbeni and Vosloo, 2019, Jandrić and Knox, 2022, Knox, 2019). The development of digital literacies therefore often starts in early childhood and is increasingly important in a postdigital world in which the 'increasing entanglement' of digital technology pervades all areas of education (Knox, 2019 p.368). Critically, this involves more than just the child. However, the engagement of young children with Internet connective technologies is still emotionally charged, with excessive screentime discourses still finding traction in academic and public forums (Muppalla et al., 2023, McGowan et al., 2016).

Supporting contexts such as home and educational settings to scaffold young children's natural propensity for meaning making by facilitating and expanding their questioning of Internet connective technologies (Rogow, 2014), and nurturing their drive for answers may be a more fruitful way to proceed than issuing guidelines devoid of context (WHO, 2019).

Young children are increasingly experiencing Internet connective technologies at younger ages (Radesky et al., 2022). Despite this, digital literacies are frequently missing from many early years curriculum (Scott and Marsh, 2018). Research suggests facilitating digital inclusion and fostering digital literacies from a young age, whilst being aware of the various cultures and dynamics of Internet based-platforms, can help children develop skills and knowledge (Livingstone et al., 2017, Davis, 2023). However, knowledge of how the digital literacies of young children may be facilitated are embryonic (Mannell et al., 2024, Flewitt et al., 2024, Green et al., 2024).

Video-Sharing Platforms (VSP) such as YouTube and YouTube Kids, are the most popular Internet activity for young children (Radesky et al., 2022). Globally, YouTube Kids alone draws over 35 million weekly views (Ofcom, 2023, Mohan, 2021). VSP such as YouTube kids therefore present as an ideal landscape for exploring the digital literacies of young children. Yet little is known about how young children, their home and educational contexts respond to and/or support/inhibit young children's digital literacies when young children use VSP.

In this paper we begin to address this gap by synthesising existing peer-reviewed research focusing on VSP as a landscape through which to explore the digital literacies of young children and how those supporting this group experience these phenomena. By mapping this area, this paper will synthesize existing findings, clarify knowledge gaps, and develop a future research agenda. We acknowledge the concept of digital literacies is contested, hence for clarity, in this paper we view digital literacies as a: "…set of knowledge, skills, attitudes and values that enable children to

confidently and autonomously play, learn, socialize, prepare for work and participate in civic action in digital environments" (Nascimbeni & Vosloo, 2019: p.32).

Young children and Video-Sharing Platforms: moving beyond moral panics towards supporting critical thinking

Advances in technologies are often made sense of in the same ways over time (Orben, 2020). From a critical perspective, examining patterns in discourse allows taken for granted versions of reality, in this case tropes/concepts such as 'screentime' to be questioned. The works of Cohen (2011), and more latterly Orben (2020), enable deeper understandings of the ways in which sense making about technologies set up certain versions of reality. For example, existing systematic review evidence has been used to create advice for adults working with young children and their families (Mantilla and Edwards, 2019). However, the advice of Mantilla and Edwards (2019) echoes moral panic tropes.

Moral panic is a term used to illustrate how exaggerated perceptions that exceed threats facing society find traction in mainstream public discourse (Cohen, 2011). As Orben (2020) highlights, public panics in response to 'new' technologies are often repeated. For example, following the introduction expansion of radios into people's homes, 1930s media and institutions were concerned that listening to the radio was causing harm to children's health (Orben, 2020).

Many of the same tropes are present in coverage of VSP and other digital media, with 'screentime', obscuring context and content (Mannell et al., 2024). When viewed in retrospect, the fallacy of moral panic discourses can be examined. In the context of young children's digital literacies, advise such as that published by Mantilla and Edwards (2019) position protectionism as the foundation *and* the ceiling of young children's connective experiences. Such work 'rules in' restriction and

'rules out' other versions of reality. For instance, the need to support all to become active citizens in a postdigital world (Nascimbeni and Vosloo, 2019, Jandrić and Knox, 2022), the role of learning how to recognise, manage and recover from risky connective experiences (Hammond et al., 2023c) and VSP as landscapes in which young children are enacting (or not) digital literacies. At present, the 'folk devils' in this morality play are young children using VSP and those parents/caregivers allowing them to access it (Cohen, 2011). A more critical and nuanced argument is required.

Such a discussion should begin with an examination of existing empirical knowledge to clarify key concepts and/or perspectives, identify knowledge gaps, examine emerging evidence and make recommendations for future research. This is not to say empirical literature is immune to moral panic tropes, but that certain forms of 'grey' literature may lack peer-review processes, vary hugely in terms of quality, and seek to amplify attention of its readership above robustness. In summary, VSP are a location where there is currently a gap in relation to how the digital literacies of young children are experienced.

Aim

This scoping review aimed to examine and map the range of peer-reviewed empirical evidence available in relation to the digital literacies of young children (aged <6 years) using Video-Sharing Platforms (VSP) and inform future research directions by identifying and analysing knowledge gaps.

Materials and methods

Design

Scoping reviews are used to examine a wide range of research from a variety of sources, to inform the types of evidence available in a particular field (Levac et al., 2010). Scoping reviews are useful for clarifying definitions, key concepts, and terminology, and identifying gaps in available evidence

(Arksey and O'Malley, 2005). We followed JBI (2015) comprehensive guidance to conduct this scoping review, and drew upon guidance described by Levac et al. (2010). We report the findings of this review in line with the PRISMA statement extension for scoping reviews (Tricco et al., 2018) (see Supplementary file 1 for PRISMA Checklist). The review team were trained in reviewing, and each reviewer piloted the eligibility criteria using the draft 'study inclusion form' on 25 studies. We discussed discrepancies as a team, during this piloting stage, refined the eligibility criteria and ensured consistency amongst reviewers prior to title and abstract screening.

This scoping review involved five stages. Firstly, as a team, and with input from key stakeholders, we clarified the research questions, key terms for the search strategy and our inclusion and exclusion criteria. We pre-registered the final full protocol with the Open Science Framework (OSF) to ensure transparency of our approach (OSF, 2011-2023) (Hammond et al., 2023b). Secondly, we iteratively developed a comprehensive search strategy, using principles from the PRESS Checklist (McGowan et al., 2016) and had these reviewed by an academic librarian. We searched for potentially relevant studies via seven pertinent online databases. Thirdly, we reviewed studies for inclusion using a double-blinded approach and discussed any discrepancies of screening of reviewers, with an independent reviewer. Fourthly, we charted the data using a numerical summary and drawing on a thematically informed qualitative approach (Braun and Clarke, 2006) we collated, summarised, and reported the results.

The research questions utilised in this review were:

1. What is the extent of current evidence available on the digital literacies of young children aged below 6 years old on Video-Sharing Platforms?
2. How are Video-Sharing Platforms experienced by young children below 6 years old, parents/guardians and others involved with children below 6 years old?

Search strategy

The final search strategy was developed through an iterative process, to maximise sensitivity and precision, ensuring that we retrieved key publications in the field. We ran the initial search on ERIC (EBSCO) which included a combination of free text and MeSH terms (see Supplementary file 2 for EBSCOhost search results). We adapted the search strategy for each online database and searched APA PsycINFO (EBSCO), ERIC (EBSCO), Child Development and Adolescent Studies (EBSCO), Web of Science Core Collection, Google scholar, Proquest Dissertations & Theses Global from inception until 25th November 2024. We searched Social Care Online (SCIE) from inception until 9th July 2023 but were unable to updates these searchers in 2024 due to host institution no longer having access to this database. We did not restrict literature by publication status. Due to resource restrictions, we only included studies published in English. We manually citation searched reference lists for any eligible additional studies.

We reported the full search strategy in our pre-registered protocol, in line with the PRISMA-Search extension guidance (Rethlefsen et al., 2021), which can also be found in Supplementary file 1.

Eligibility criteria

We exported all citations retrieved from our searches of all relevant databases, into EndNote reference management software. In EndNote, we recorded and removed any duplicate records. We then uploaded all 239 citations from EndNote into Rayyan systematic review software (Rayyan, 2024). Two reviewers used the eligibility criteria (See Table 1: Inclusion and exclusion criteria) to independently complete blinded title and abstract screening for all records. If there was no consensus between the two reviewers about a study's eligibility, the reviewers discussed this disagreement. A third independent arbitrator was available to make a judgement about a study's inclusion, but this was not necessary.

We then sourced the full-texts of the 53 included titles and abstracts, in preparation for full-text review, and uploaded these into Rayyan (Rayyan, 2024). We were unable to retrieve the full-text of one study as this was embargoed (Wright, 2023). Two reviewers independently assessed the full-texts of 52 records, in duplicate. A third separate arbitrator made the final judgement about inclusions following discussions. We recorded reasons and details of any study excluded at full-text review stage. We developed a PRISMA flow diagram (Page et al., 2021) to illustrate the study selection process, providing figures of all duplicates, and included and excluded studies (see Table 2 'Included studies' and Supplementary file 3 for Table of excluded studies).

We included four eligible studies within this scoping review, which reported on the digital literacy experiences of children aged less than 6 years in relation to their engagement with Video Sharing Platforms (VSP), and the experiences of parents/guardians and others involved with children aged less than 6 years in relation to this population's digital literacies and played out in relation to their engagement with VSPs.

Table 1. Inclusion and exclusion criteria

Inclusion	Exclusion
Children aged <6 years AND/OR Caregivers and anyone involved with children aged <6 years.	Children aged ≥6 years AND/OR Caregivers and anyone involved with children aged ≥6 years.
Digital literacies (UNESCO definition)	Digital literacies not meeting the UNESCO definition.
Video-Sharing Platforms (VSPs)	Digital literacies relating to anything other than VSPs (e.g. videos being analyzed for

	their content (the child's digital literacy and experience is central to this scoping review)
Peer-reviewed paper, unpublished paper, or Dissertation/thesis	Books or book chapters, text, opinion, or review papers, conference abstracts (where the full text cannot be retrieved).
Where age of children cannot be ascertained from the paper	Where the participant sample includes ages ≥6 years (e.g., Focus Groups with parents of 4–8-year-olds where it is not clear the age of child being referred to).
English language	No full-text English language can be found
Systematic reviews should be tagged and included (to allow for citation searching)	

Data extraction

We modified JBI's data extraction form (see protocol available on OSF (Hammond et al., 2023b)) to ensure the form was relevant for the data we required in this review. The review team were trained in using the data extraction form. Two reviewers extracted all relevant data independently, in duplicate. A third independent reviewer then reviewed the duplicated extractions to check for consensus. We did not critically appraise included studies because our review only sought to map the extent of the evidence. A summary of key findings is shown in Table 2 Included studies. Drawing on a thematically informed approach (Braun and Clarke, 2006), we analysed the data, reported and interpreted these results.

Table 2. Included studies

Author & Location (inc Year)	Sample size & population(s)	Methodology	Setting(s)	Outcomes/key findings
Ahn (2019) USA	*Study 1:* 35 parents of children between 4 and 6 years old) (22 mothers 13 fathers) *Study 2:* 198 parents (indeterminate genders)	*Study 1:* Qualitative techniques framed within grounded theory, 1-1 in-depth, semi-structured interviews of up to 60 minutes with 35 parents. Audio recorded or recorded via note-taking. *Study 2:* Quantitative statistical methods, Between subjects'	*Study 1:* Participants' homes *Study 2:* Online	Parents with higher media literacy more likely to interact and monitor child's advertising content. Parents discussed mediation strategies, such as discussing the purpose, source, target audience, techniques, and messages regarding the videos, which are the primary domains of media literacy. Parents play an important role in helping children become media literate and navigate the complex world of advertising and media content. Parents' education level was positively related to all three types of mediation (active, restrictive, and co-viewing)

		experimental design - online experimental survey with 198 parents		depending on which characters and advertainment type are presented.
Marsh (2016) England, UK	1 child, Gareth (male) aged 4 years 7 months 1 parent (mother)	Qualitative case study, Child observations filmed by parent, Parent-authored, written child observation, Parent interview, Parent-authored reflective diary	Participants' home and child participant's school	Young children's lives are increasingly played out in online as well as offline spaces, with YouTube being the most popular. Transmedia play worlds require more nuanced post-digital examinations.
Marsh et al. (2017) England, UK	4 children aged 2-4 years – 2 males, 2 females 8 parents – 4 mothers, 4 fathers	Qualitative case study, Child observations, written and filmed by parents, Parent-authored reflective diary, Parent interviews	Participants' homes	Young children are competent users of technologies. Parents felt that their children developed a wide range of skills, knowledge, and understanding through their use of technology, and that such competences were essential for the digital age.

Vanwesenbeeck et al. (2020) Belgium	62 children – 53% boys, 47% girls	Mixed methods Between-subject single factor experimental design (Each child was exposed to one condition to examine how the children respond to the same video advertisement on TV screen or tablet in the YouTube app).	Participants' schools	Young children can distinguish advertising from regular media content, and most can correctly identify advertising. Preschool children's media consumption has heavily shifted from traditional TV viewing to digital media use, and watching YouTube videos has become an important leisure activity. Preschool children scored low on attitudinal advertising literacy, as most of them scored high on advertising liking and low on advertising annoyance.

Results

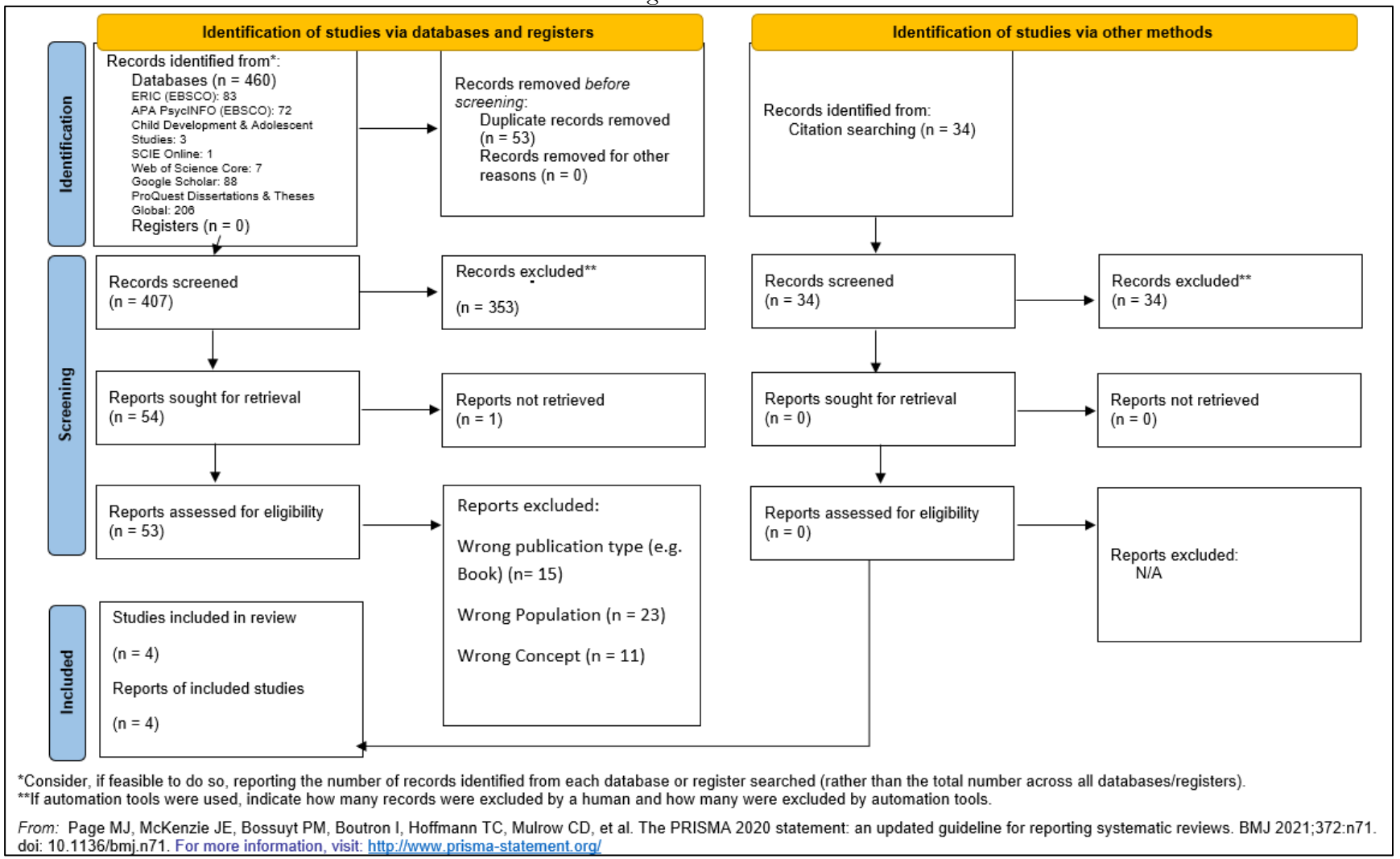
Flow of literature through the review

The details of the study identification, screening and selection process are shown in the PRISMA flow chart (Rethlefsen et al., 2021) (figure 1). The databases searched retrieved a total of 205 citations after duplicates and books were removed. A further 34 were identified via manual citation searching. Altogether 52 articles were assessed for eligibility, with four articles included in this review. Articles were excluded for reasons such as being the wrong population, wrong concept or publication type or were review papers (see Supplementary file 3 Table of excluded studies for more information).

General characteristics of included studies

Two of the four included studies were conducted in the UK. The two UK-based studies featured the same lead author (Marsh et al., 2017, Marsh, 2016), the remaining two studies were conducted in the United States (Ahn, 2019) and Belgium (Vanwesenbeeck et al., 2020) respectively. All four focused on young children's and parents' experiences with the VSP YouTube in some manner. It is also important to highlight that all four studies are from the global North. The earliest study was published in 2016 and the most recent in 2020. Given the prominence of VSP pre and post COVID-19 enforced lock-downs, and the significant increase in YouTube usage during this period (Auxier and Anderson, 2021), the lack of work post-2020, even accounting for time-lag in the academic publication process, is surprising. This may also be reflective of how exploring young children's use of VSP as a place for examining digital literacies is perhaps emergent, hence works focused on this area specifically may be limited.

Figure 1 PRISMA Flow chart



Three of the four articles were published in peer-reviewed journals (Vanwesenbeeck et al., 2020, Marsh et al., 2017, Marsh, 2016), with Ahn (2019) being a doctoral thesis. Two studies (Marsh et al., 2017, Marsh, 2016) involved a qualitative methodology, drawing on case-studies of one 4-year-old and four 2-4-year-olds, respectively. Ahn's (2019) doctoral research involved two separate studies brought together in this discussion. The first was a qualitative study framed within a grounded theory approach. This study utilised 1-1 in-depth, semi-structured interviews with 35 parents. The second study adopted quantitative statistical methods, utilising a between subjects' experimental design with an online experimental survey including 198 parents. In the final study, Vanwesenbeeck et al. (2020) recruited 62 children under 6-years-old and used a positivist informed experimental quantitative approach to measure how children discerned commercial content and advertising content on television versus YouTube.

Drawing on a thematically informed approach (Braun and Clarke, 2006), in our analysis we drew out key findings from the research. We present three overarching themes: (1) Knowing (and not knowing) about what young children know; (2) Young children demonstrating VSP-related skills: developmental deficits or underappreciated voyagers? (3) Perspectives on VSP and young children.

Data analysis

Theme 1: Knowing (and not knowing) about what young children know

All four studies indicate that young children's knowledge of VSP content relates to what they enjoy. This includes watching videos on YouTube that are related to films or television programmes they like. Across included papers, in particular the study conducted by Marsh (2016), there is evidence of parents experiencing young children's knowledge of VSP content as explicit because young child participants were shown as able to communicate the features of VSP they enjoyed to adults. All included studies also show that young children know about a variety of content. This indicates that content emerges not just in online spaces, but in what Marsh (2016)

refers to as a transmedia play world, a postdigital perspective in which broader skills and literacies, beyond solely the digital, are enacted by young children. Whilst Marsh et al. (2017) and Ahn (2019) also touch upon, to differing levels, a similar postdigital perspective, the work of Vanwesenbeeck et al. (2020) rooted in a positivist perspective focuses on more traditional literacies linked to understanding different content.

A presumed knowledge imbalance between young children and their parents is present in what Ahn (2019: p.20) refers to as children's "limited ability". This operated in the form of subtle and sometimes overt notions of adult knowledge being superior. Vanwesenbeeck et al. (2020) echo this, proposing that preschool children lack critical knowledge to be able to evaluate adverts. They suggest that this is evidenced by young children liking watching adverts, in contrast to the view of many adults who experience annoyance at adverts interrupting main content. When coupled with the study's suggestion that young children lack the critical knowledge to identify the persuasive intent of adverts leading them to be more susceptible to their influence (Vanwesenbeeck et al., 2020), a possible connection between young children's lack of criticality and their enjoyment of adverts is implied. Notably the work of Ahn (2019) and Vanwesenbeeck et al. (2020) emphasise an adult view that young children may become exposed to inappropriate content or advertising because they lack knowledge. This finding may be useful in providing supporting adults with ways to assist children in developing digital literacies in such areas based on knowledge gaps.

Given the algorithmic nature of VSP and charged nature of this topic area, this line of argument whilst consistent with in the broader literature on young children's digital literacies, (for example, OECD (2023) states that children's potential encounters with inappropriate content is a key concern for adults), may obscure three key points.

Firstly, young children may indeed 'lack adult knowledge' but conversely adults may, by the same virtue, lack young children's knowledge. Secondly, are adults helping young children begin to think algorithmically? Thirdly, a lack of acknowledgment about the wider narrative of young children's internet use and moral panic.

In returning to the first point, work with pre-teens (8-12 years old) indicates this older age group can identify and become annoyed at adverts interrupting content viewing (Hammond et al., 2023c). Thus, the suggestion from Vanwesenbeeck et al (2020) and Ahn (2019) that young children's enjoyment of adverts rests on a lack of critical evaluation skills may overlook child-centric perspectives. The work of Ahn (2019) for example is routed in stage related understandings of child development and suggests that young children have limited ability to decode media messages when compared with later developmental stages. This infers an important knowledge claim, that adults can fully decode pieces of content in ways young children cannot, due to age-and-stage related maturation. This is a problematic assertion given such stage related developmental theories assume universality of experiences and overlook experiential or tacit knowledge (Agbenyega, 2009).

Returning to the second point, research from distinct but related work in early childhood studies reminds us of the value in recognising young children and adults' world views as different as opposed to the latter being superior. More specifically, reflecting that exploratory activities help children learn quickly, particularly in situations where the environment is complex and there are costs and risks (Liquin and Gopnik, 2022). Given that VSP are driven by algorithms, the adult role appears to be helping young children to begin to develop notions of their algorithmic imaginary self, that is ways young children begin to think about what algorithms are, how they want them to look and function (Bucher, 2018).

Ahn (2019) does begin to move beyond concentrating solely on young children's lack of criticality, offering alternative reasons for young children's positive attitudes towards VSP adverts. Ahn (2019) highlights children's enjoyment of the entertainment value of 'advertainment' content, content that blends advertising and entertainment. However, this in and of itself highlights current understandings of young children's critical capacities, in the context of VSP, as conceptually embryonic, especially given the paucity of research in this review.

In contrast, the work of both Marsh (2016) and Marsh et al. (2017) offers a different understanding of young children's knowledge in this space. For example Marsh (2016) highlights the importance of acknowledging young children's aesthetic experience of viewing a video and the emotional responses it produces. Marsh (2016) and Marsh et al (2017) suggest that recognising aesthetic and emotional connection as potential driving forces for what young children know, and how they participate in and enjoy VSP advertising, may be useful instead of attributing this enjoyment to a lack of knowledge. Such an approach treats young children's perspectives and interpretation as those derived from human beings instead of human becomings (Qvortrup, 2009). This requires a focus on young children's present state as opposed to their future one and asks for a shift from analysing what is lacking (e.g., critical knowledge) towards what they possess. This competencies-based approach may begin to mitigate privileging certain forms of knowledge or moral panics, instead focusing on finding a space for young children's voices and thoughts about VSP, a feature not seen in this review and a challenge to existing ingrained, authoritative discourses in the Early Childhood Education and Care field, may evolve.

Theme 2: Young children demonstrating VSP-related skills: developmental deficits or underappreciated voyagers?

Included studies highlight the nature of young children's interactions with VSP and their competencies. Marsh (2016) examines 4-year-old Gareth's engagement with YouTube, including

'unboxing' videos (video clips where viewers see a product being taken out of a box and used for the first time) reporting how Gareth curated his own digital collections via YouTube. Addressing digital literacies directly, Marsh (2016) noted Gareth would navigate on-screen commands despite being unable to decode relevant written text. Here the work of Marsh (2016) indicates Gareth was developing independence in his use of VSP, particularly in the context of viewing unboxing videos. Marsh (2016) goes on to suggest that Gareth's interactions with VSPs, such as watching videos featuring other children, reflect his agency and autonomy.

Marsh et al. (2017) describes the ways in which young children can move expertly across multimodal domains, bringing their focused digital interests from VSP into their non-digital play. They found that many young children are competent users of digital technologies from an early age and that parents felt their children developed a wide range of skills, knowledge, and understanding in this use (Marsh et al., 2017). Marsh et al (2017) suggest that these skills include using touchscreens, navigating digital interfaces, and accessing and using a range of digital media, such as videos, games, and apps. Young children's engagement with multimodal, multimedia texts and practices in home contexts including interacting with digital artifacts and engaging in joint practices with family were reported across Marsh (2016) and Marsh et al. (2017).

As more recent research has highlighted (Davis, 2023), such skills are applicable and experienced similarly across multiple platforms when they share affordances and design features. Importantly, all four studies focused on YouTube as opposed to other VSP as well. Whilst the prominence of YouTube at the time of the included studies is noted, as are the assertions of Davis (2023), understanding if, why and how young children's digital skills mirror their expertise in moving across multimodal domains warrants further empirical exploration. As Marsh et al. (2017) illustrates, a breadth of digital literacies is increasingly important. Hence, researchers should consider how the connective contexts in which young children's literacies are enacted impacts their

expression and how these come to be experienced by the young children themselves and their supporting adults.

For instance, Loose et al. (2022) suggests that any lack of digital literacies young children display may not be solely down to a deficit and may relate to a host of other factors including restrictive parental mediation. This contests the position of Ahn (2019) and Vanwesenbeeck et al. (2020) that young children's inability to evaluate online sources and failure to understand the persuasive intent of adverts are the result of developmental deficiencies. Furthermore, although Marsh (2016) and Marsh et al. (2017) offer ideas about the potential impact of young children's limited experience on their burgeoning digital literacies, they foreground young children as interested, curious and capable, akin to the Malaguzzian Reggio Emilia perspective. This approach recognises and values the myriad ways that young children communicate their skills and competencies and, thus, affords them a certain agency over the curriculum (Edwards et al., 2011). The emphasis, here, on children's capabilities highlights the potential merits of children having more time to develop digital literacies through self-mediated digital experiences, rather than relying solely on heavily adult-directed mediation practices. Epistemological stance of included studies appears to map onto deficit discourses in this review. However, the sparsity of studies included in this review demonstrates the need for more research.

Drawing on evidence in other populations considered as vulnerable, for example children with disabilities (Hammond et al., 2024, Hammond et al., 2023a), the Internet, and by extension VSP, are best learnt via experience. Hence, we suggest that future research should encapsulate Rogow's (2014) emphasis on the positive aspects of young children's engagement in connected spaces in addition to the potential role of developmental factors. Addressing this gap by exploring the skills young children have and the constructive influences that their engagement with VSP offers provides an important avenue for future studies.

In the context of young children, this review highlights the need to consider the impact of contexts in a manner that extends beyond thinking about the false dichotomy of digital and non-digital environments in which young children are acquiring and enacting digital literacies. In so doing, it maps the legacies of how current literature conceptualises young children's competencies.

Theme 3: Perspectives on VSP and young children

When synthesising messages from the studies included in this review, our analysis constructed the '*Perspectives on VSP and young children*' theme as containing three subthemes the voices of parents', young children's and early years practitioners.

Subtheme 3.1: Perspectives on VSP and young children: Parents' voice

Ahn (2019), Marsh et al. (2017), Marsh (2016) all report on parental perspectives on young children's use of VSP. Given the focus of these articles, the majority of these comments related to digital literacies as a way to mitigate or show awareness in relation to consumerist practices within VSP. Ahn (2019) reports that parents' views of young children's interactions with VSP tend to be influenced by a lack of understanding over how online information is distributed and funded by advertisers. Ahn (2019) also suggests that parental digital literacies impact mediation strategies. All studies suggest that adults may be able to have a positive impact in this regard, because intergenerational literacy practices, which have been previously considered in relation to print literacy, also play a crucial role in shaping young children's digital literacies. Given the growing range of VSP, broadening range of approaches to advertising, such as sponsored content (De Jans et al., 2020), influencers and influencer-aspirant toys (Ruiz-Gomez et al., 2022), there is a need to continue exploring the links between advertising, content, and intergenerational literacy practices within VSP beyond YouTube. There is also the need to equip parents and practitioners supporting

young children with ways to embed opportunities to allow young children to develop their digital literacies.

Subtheme 3.2: Perspectives on VSP and young children: Children's voice

Marsh (2016) and Marsh et al. (2017) explore young children's digital literacies in ways which begin to recognise their breadth . Whilst it should be noted that the work of Marsh et al. (2017) does refer to YouTube as a feature of their study, there is little exploration of young children's use of VSP explicitly, it is instead considered a wider part of digital literacies. Closer attention is given to children's perspectives regarding VSP in Marsh (2016). In this work, Marsh (2016) suggests young children appear to be attracted to unboxing videos, due to the mystery involved in the process, as well as the structural elements common to popular media genres, such as mystery fiction. Marsh (2016) suggests that while the viewing of unboxing videos may appear to be a straightforward consumerist practice, she also notes that Gareth was attracted to videos featuring other children and that he would often talk about the toys and products that were being unboxed in the videos. Marsh (2016) posits that navigating to such content could also be viewed as empowering, arguing that this practice may enable young children to engage in a culture that they might not otherwise have access to. A line of argument that links to the idea that such practices can allow children to inhabit affective and technical affinity spaces, allowing children to create connections between brands, publics, and identities (Lange, 2014).

Subtheme 3.3: Perspectives on VSP and young children: Practitioners' voice

There is a lack of early years practitioner perspectives about how young children's digital literacies may or may not become expressed in the landscape of VSP in this review. Given that globally countries are increasingly investing in developing better early years provision so that parents can re-enter the workforce and the growing evidence of the benefits of high-quality early years

provision for both social and educational development (OECD, 2020) and an awareness of the 'increasing entanglement' of digital technology in all areas of education (Knox, 2019 p.368), the urgent need for evidence from this group is clear. Thus, the need to undertake research which includes the voices and unique perspectives of early year practitioners in this space is a vital and key finding of this review.

Discussion

Mapping current conceptualisations

Included studies emphasise how differing epistemological perspectives and methods position young children as either capable and curious or as operating from deficits and how this framing influences research questions and the interpretation of findings. Sefton-Green et al. (2017) reflects this and highlights the importance of adopting a holistic view of young children's digital literacies. This view should recognise the potential of young children whilst acknowledging the need for support when navigating VSP. To achieve this aim there is a need to prioritise the inclusion of young children's perspectives in studies of their digital literacy experiences with VSP. In agreement with prior work, we found that the experiences and insights of young children were often overlooked (Third et al., 2017) and/or underappreciated (Sundin et al., 2025).

Identifying evidence gaps

The review also found a complete lack of early years practitioners from the global North and young children, parents, early years practitioners and adults supporting young children in the global South regarding their experiences of young children's digital literacy experiences on VSP. In the global North, the amount of time children spend in their home environments prior to formal education beginning is noted. However, so too is evidence regarding the importance of early years provision (OECD, 2020), hence early years practitioner experiences warrants urgent attention.

In terms of the global South, data collection in resource-constrained environments can be challenging – though not impossible as Dixon et al. (2024) illustrate. Researchers may look to use research approaches that are not appropriate when using data from the social and cultural contexts in the global South (Brown et al., 2023). This is a challenge beyond this topic area, yet it should be reflected upon within it.

Future research agenda

By identifying gaps in current knowledge, this scoping review also functions to inform future research agendas. In terms of addressing the gaps identified above, employing innovative research methods such as polyphonic video observations (White, 2016) and being attentive to the significant difference between *child* perspectives and *children's* perspectives (Sommer et al., 2012) that enable researchers to foreground young children's voices are essential for gaining a comprehensive understanding of their experiences with, and deployment of digital literacies in relation to VSP. Future research should include such approaches which, coupled with more longitudinal approaches, can provide valuable insights into how young children's digital literacies are enacted or restricted in relation to the platforms and/or people they engage with and through overtime. Funding bodies need to support these endeavours across the global North *and* South.

How VSP were experienced by parents/guardians and others involved with children below 6 years old were informed by moral panic tropes, suggesting the need for more critical thinking (Mantilla and Edwards, 2019). However, there is a dearth of evidence-informed guidance making the VSP practices of young children a challenging and emotive landscape to navigate. Increasing our understanding of how young children engage with VSP, and the roles of adults in this context, is crucial for providing more nuanced thinking and evidence-informed ways to support the

development of digital literacies across childhood. A postdigital perspective able to disrupt adultcentrism may provide fruitful ways forward.

The review found a noticeable lack of work beyond YouTube. Given the growth in VSP, including platforms both designed for young children and those not intended for young children which they may use nonetheless, it is important to understand how platforms impact young children's digital literacies beyond YouTube. This is especially crucial given research that suggests that the design of platforms and the ways people engage with design features can vary from platform-to-platform, shaping the sorts of cultures that emerge from and through similar features across different media design ecosystems (Davis, 2023). This is a clear area for future research to address and one which may benefit from using the algorithmic nature of VSP to facilitate data collection.

Limitations

The body of available evidence and included studies is a clear weakness of this review. Certain forms of 'grey' literature were excluded with the decision taken to focus on reviewing highest quality peer-reviewed evidence available. However, the number of studies is likely a weakness of the available literature as opposed to the review itself. Reviews containing no studies (known as an empty review) or in the case of this paper, a limited number of studies, can highlight major research gaps and indicate the state of evidence at a particular point in time (Yaffe et al., 2012). Reviews of this nature can also be because of restrictive inclusion and exclusion criteria. However, given the importance of early years and piloting of inclusion criteria with input from key stakeholders, the criteria employed in this review were broad yet focused as opposed to overly restrictive. The studies included were initially screened by title and abstract. Hence, it is possible that some studies may have been missed where abstracts were not representative of full-texts.

The primary strength of this scoping review is that it is the first of its nature in this field. The review forms the first step in addressing the dearth of evidence available. It does so by examining and mapping a small body of existing evidence, which whilst limited, does illustrate important knowledge gaps and key questions of academic, practice and policy significance and by critically examining how young children's digital literacies are conceptualised across available literature. To ensure repeatability, we pre-registered the final full protocol with the Open Science Framework (Hammond et al., 2023b) and make this available alongside our excluded study decisions (see Supplementary file 3 Table of excluded studies for more information).

Conclusion

This scoping review has provided an overview of the current evidence on young children's digital literacies on VSP. It highlights the importance of supporting children in acquiring the knowledge and skills to navigate postdigital worlds, emphasising the need for a comprehensive understanding of digital literacies as material *and* immaterial. The identified knowledge gaps and research directions outlined in this review offer valuable guidance for future studies. Such work needs to empower supporting adults to let young children know what they can do, not simply focus on what they do not want them to do.

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Declaration of interest statement

Dr Simon P Hammond is a member of the UKCIS Digital Resilience and Vulnerable Users Working Groups, Internet Matters Expert Advisory Panel and Ofcom's Research Working Group. Dr Harry T Dyer is an Editor-in-Chief of the Digital Culture and Education journal. The remaining authors have no interests to declare.

References

AGBENYEGA, J. 2009. The Australian Early Development Index, who does it measure: Piaget or Vygotsky's child? *Australasian Journal of Early Childhood,* 34**,** 31-38.

AHN, R. J. 2019. *Exploration of parental media literacy and parental mediation strategies for advertainment content featuring popular media characters.* PhD, University of Illinois at Urbana-Champaign.

ARKSEY, H. & O'MALLEY, L. 2005. Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology,* 8**,** 19-32.

AUXIER, B. & ANDERSON, M. 2021. Social Media Use in 2021. Pew Research Center.

BRAUN, V. & CLARKE, V. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology,* 3**,** 77-101.

BROWN, S., SAXENA, D. & WALL, P. J. 2023. Data collection in the global south: practical, methodological, and philosophical considerations. *Information Technology for Development***,** 1-21.

BUCHER, T. 2018. The algorithmic imaginary: exploring the ordinary affects of Facebook algorithms. *In:* BEER, D. (ed.) *The Social Power of Algorithms.* 1st Edition ed. New Yrok: Routledge.

COHEN, S. 2011. *Folk devils and moral panics*, Routledge.

DAVIS, K. 2023. *Technology's Child: Digital media's role in the ages and stage of growing up*, The MIT Press.

DE JANS, S., VAN DE SOMPEL, D., DE VEIRMAN, M. & HUDDERS, L. 2020. #Sponsored! How the recognition of sponsoring on Instagram posts affects adolescents' brand evaluations through source evaluations. *Computers in Human Behavior,* 109.

DIXON, K., MURRIS, K., PEERS, J., GIORZA, T. & LAWRENCE, C. 2024. *Postdigital Play and Global Education: Reconfiguring Research,* London, Routledge.

EDWARDS, C. P., GANDINI, L. & FORMAN, G. E. 2011. *The hundred languages of children : the Reggio Emilia experience in transformation*, ABC-CLIO.

FLEWITT, R., EL GEMAYEL, S., ARNOTT, L., , , GILLEN, J., GOODALL, J., WINTER, K., DALZIELL, A., LIU, M., SAVADOVA, S. & TIMMINS, S. 2024. Toddlers, Tech and Talk: summary report. Manchester: Manchester Metropolitan University.

GREEN, L., HADDON, L., LIVINGSTONE, S., O'NEILL, B., STEVENSON, K. J. & HOLLOWAY, D. 2024. *Digital Media Use in Early Childhood: Birth to Six,* London, Bloomsbury Publishing.

HAMMOND, S. P., D'ARCY, J., MINOTT, M. & KRASNIQI, E. 2024. A discursive psychological examination of educators' experiences of children with disabilities accessing the Internet: a role for digital resilience. *Information, Communication & Society,* 27**,** 161-181.

HAMMOND, S. P., D'ARCY, J. & POLIZZI, G. 2023a. Connection Brokers: How educators work within and between social networks to cultivate community digital resilience to support children with disabilities using the Internet. *New Media & Society,* 0**,** 14614448231157330.

HAMMOND, S. P., PARKINSON, E., HILL, P. & DYER, H. T. 2023b. The digital literacies of children aged less than 6 years on video-sharing platforms: a scoping review. *Open Science Framework***,** 20.

HAMMOND, S. P., POLIZZI, G. & BARTHOLOMEW, K. J. 2023c. Using a socio-ecological framework to understand how 8–12-year-olds build and show digital resilience: A multi-perspective and multimethod qualitative study. *Education and Information Technologies,* 28**,** 3681-3709.

JANDRIĆ, P. & KNOX, J. 2022. The postdigital turn: Philosophy, education, research. *Policy Futures in Education,* 20**,** 780-795.

KNOX, J. 2019. What Does the 'Postdigital' Mean for Education? Three Critical Perspectives on the Digital, with Implications for Educational Research and Practice. *Postdigital Science and Education,* 1**,** 357-370.

LANGE, P. G. 2014. Kids on YouTube.

LEVAC, D., COLQUHOUN, H. & O'BRIEN, K. K. 2010. Scoping studies: advancing the methodology. *Implementation Science,* 5**,** 69.

LIQUIN, E. G. & GOPNIK, A. 2022. Children are more exploratory and learn more than adults in an approach-avoid task. *Cognition,* 218**,** 104940.

LIVINGSTONE, S., LAFSSON, K., HELSPER, E. J., LUPIEZ-VILLANUEVA, F., VELTRI, G. A. & FOLKVORD, F. 2017. Maximizing Opportunities and Minimizing Risks for Children Online: The Role of Digital Skills in Emerging Strategies of Parental Mediation. Great Britain: John Wiley & Sons Ltd.

LOOSE, F., HUDDERS, L., DE JANS, S. & VANWESENBEECK, I. 2022. A qualitative approach to unravel young children's advertising literacy for YouTube advertising: in-depth interviews with children and their parents. *Young Consumers,* 24**,** 74-94.
MANNELL, K., BLOUL, S., SEFTON-GREEN, J. & WILLCOX, M. 2024. Digital media and technology use by families with infants, toddlers, and young children: A scoping review and call for forward momentum. *Journal of Children and Media,* 18**,** 605-628.
MANTILLA, A. & EDWARDS, S. 2019. Digital technology use by and with young children: A systematic review for the Statement on Young Children and Digital Technologies. *Australasian Journal of Early Childhood,* 44**,** 182-195-195.
MARSH, J. 2016. 'Unboxing' videos: co-construction of the child as cyberflâneur. *Discourse: Studies in the Cultural Politics of Education,* 37**,** 369-380.
MARSH, J., HANNON, P., LEWIS, M. & RITCHIE, L. 2017. Young children's initiation into family literacy practices in the digital age. *Journal of Early Childhood Research,* 15**,** 47-60-60.
MCGOWAN, J., SAMPSON, M., SALZWEDEL, D. M., COGO, E., FOERSTER, V. & LEFEBVRE, C. 2016. PRESS Peer Review of Electronic Search Strategies: 2015 Guideline Statement. *Journal of Clinical Epidemiology,* 75**,** 40-46.
MOHAN, N. 2021. Investing to empower the YouTube experience for the next generation of video. *YouTube Official Blog* [Online]. Available from: https://blog.youtube/inside-youtube/neal-innovation-series/ [Accessed 01.08.23 2021].
MUPPALLA, S. K., VUPPALAPATI, S., REDDY PULLIAHGARU, A. & SREENIVASULU, H. 2023. Effects of Excessive Screen Time on Child Development: An Updated Review and Strategies for Management. *Cureus,* 15**,** e40608.
NASCIMBENI, F. & VOSLOO, S. 2019. Digital literacy for children: exploring definitions and frameworks. New York, NY: UNICEF Office of Global Insight and Policy.
OECD 2020. Early Learning and child well-being: A study of five year olds in England, Estonia and the United States. OECD.
OECD 2023. *Empowering Young Children in the Digital Age*.
OFCOM 2023. Children and parents: Media use and attitudes. London: Ofcom.
ORBEN, A. 2020. The Sisyphean Cycle of Technology Panics. *Perspectives on Psychological Science,* 15**,** 1143-1157.
PAGE, M. J., MCKENZIE, J. E., BOSSUYT, P. M., BOUTRON, I., HOFFMANN, T. C., MULROW, C. D., SHAMSEER, L., TETZLAFF, J. M., AKL, E. A., BRENNAN, S. E., CHOU, R., GLANVILLE, J., GRIMSHAW, J. M., HRÓBJARTSSON, A., LALU, M. M., LI, T., LODER, E. W., MAYO-WILSON, E., MCDONALD, S., MCGUINNESS, L. A., STEWART, L. A., THOMAS, J., TRICCO, A. C., WELCH, V. A., WHITING, P. & MOHER, D. 2021. The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *PLOS Medicine,* 18**,** e1003583.
QVORTRUP, J. 2009. Are Children Human Beings or Human Becomings? A Critical Assessment of Outcome Thinking. *Rivista Internazionale di Scienze Sociali,* 117**,** 631-654.
RADESKY, J., MCLAREN, C., AKGUN, E., SCHALLER, A., HINIKER, A., WEEKS, H. M., CAMPBELL, S. & GEARHARDT, A. N. 2022. Prevalence and Characteristics of Manipulative Design in Mobile Applications Used by Children. *JAMA Network Open,* 5**,** E2217641.
RAYYAN. 2024. *Rayyan systematic review software* [Online]. Doha, Qatar. Available: https://www.rayyan.ai/ [Accessed 26.02.2024].
RETHLEFSEN, M. L., KIRTLEY, S., WAFFENSCHMIDT, S., AYALA, A. P., MOHER, D., PAGE, M. J., KOFFEL, J. B., BLUNT, H., BRIGHAM, T., CHANG, S., CLARK, J., CONWAY, A., COUBAN, R., DE KOCK, S., FARRAH, K., FEHRMANN, P., FOSTER, M., FOWLER, S. A., GLANVILLE, J., HARRIS, E., HOFFECKER, L., ISOJARVI, J., KAUNELIS, D., KET, H., LEVAY, P., LYON, J., MCGOWAN, J., MURAD, M. H., NICHOLSON, J., PANNABECKER, V., PAYNTER, R., PINOTTI, R., ROSS-WHITE, A., SAMPSON, M., SHIELDS, T., STEVENS, A., SUTTON, A., WEINFURTER, E., WRIGHT, K. & YOUNG, S. 2021. PRISMA-S: an extension to the PRISMA Statement for Reporting Literature Searches in Systematic Reviews. *Systematic Reviews,* 10.
ROGOW, F. 2014. Media Literacy in Early Childhood Education: Inquiry-Based Technology Integration. *In:* DONOHUE, C. (ed.) *Technology and digital media in early years: Tools for teaching and learning.* 1st ed. London: Routledge.

RUIZ-GOMEZ, A., LEAVER, T. & ABIDIN, C. 2022. Playing YouTube: How the Nancy YouTuber doll and app position children as aspiring YouTube influencers. *International Journal of Cultural Studies,* 25**,** 121-140.

SCOTT, F. & MARSH, J. 2018. Digital Literacies in Early Childhood. Oxford University Press.

SEFTON-GREEN, J., MARSH, J., ERSTAD, O. & FLEWITT, R. 2017. *Establishing a Research Agenda for the Digital Literacy Practices of Young Children: A White Paper for COST Action IS1410*.

SOMMER, D., PRAMLING SAMUELSSON, I. & HUNDEIDE, K. 2012. *Child Perspectives and Children's Perspectives in Theory and Practice*, Springer.

SUNDIN, E., SANDBERG, H. & SJÖBERG, U. 2025. Digital literacies among infants and toddlers: Everyday engagement of digital media in the home environment. *Journal of Early Childhood Literacy,* 0**,** 14687984251350491.

THIRD, A., BELLEROSE, D., DINIZ DE OLIVERIA, J., LALA, G. & THEAKSTONE, G. 2017. Young and online: Children's perspectives on life in the digital age. *In:* UNICEF (ed.).

TRICCO, A. C., LILLIE, E., ZARIN, W., O'BRIEN, K. K., COLQUHOUN, H., LEVAC, D., MOHER, D., PETERS, M. D. J., HORSLEY, T., WEEKS, L., HEMPEL, S., AKL, E. A., CHANG, C., MCGOWAN, J., STEWART, L., HARTLING, L., ALDCROFT, A., WILSON, M. G., GARRITTY, C., LEWIN, S., GODFREY, C. M., MACDONALD, M. T., LANGLOIS, E. V., SOARES-WEISER, K., MORIARTY, J., CLIFFORD, T., TUNCALP, O. & STRAUS, S. E. 2018. PRISMA Extension for Scoping Reviews (PRISMA-ScR): Checklist and Explanation. *Ann Intern Med,* 169**,** 467-473.

VANWESENBEECK, I., HUDDERS, L. & PONNET, K. 2020. Understanding the YouTube Generation: How Preschoolers Process Television and YouTube Advertising. *Cyberpsychology, Behavior, and Social Networking,* 23**,** 426-432-432.

WHITE, E. J. 2016. More than meets the "I": A polyphonic approach to video as dialogic meaning-making. *Video Journal of Education and Pedagogy,* 1**,** 6.

WHO 2019. Guidelines on physcal activity, sedentary behaviour and sleep: for Children under 5 years of age. Geneva: World Health Organization.

WRIGHT, W. T. 2023. *Participation in the Age of the Algorithm: A Study of Remix, YouTube, and ELA Teacher Education.* PhD, University of Georgia.

YAFFE, J., MONTGOMERY, P., HOPEWELL, S. & SHEPARD, L. D. 2012. Empty Reviews: A Description and Consideration of Cochrane Systematic Reviews with No Included Studies. *PLOS ONE,* 7**,** e36626.

Supplementary file 1 PRISMA Checklist

Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR) Checklist

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
TITLE			
Title	1	Identify the report as a scoping review.	1
ABSTRACT			
Structured summary	2	Provide a structured summary that includes (as applicable): background, objectives, eligibility criteria, sources of evidence, charting methods, results, and conclusions that relate to the review questions and objectives.	1
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known. Explain why the review questions/objectives lend themselves to a scoping review approach.	2-4
Objectives	4	Provide an explicit statement of the questions and objectives being addressed with reference to their key elements (e.g., population or participants, concepts, and context) or other relevant key elements used to conceptualize the review questions and/or objectives.	4-5
METHODS			
Protocol and registration	5	Indicate whether a review protocol exists; state if and where it can be accessed (e.g., a Web address); and if available, provide registration information, including the registration number.	5
Eligibility criteria	6	Specify characteristics of the sources of evidence used as eligibility criteria (e.g., years considered, language, and publication status), and provide a rationale.	6
Information sources*	7	Describe all information sources in the search (e.g., databases with dates of coverage and contact with authors to identify additional sources), as well as the date the most recent search was executed.	5-6
Search	8	Present the full electronic search strategy for at least 1 database, including any limits used, such that it could be repeated.	6
Selection of sources of evidence†	9	State the process for selecting sources of evidence (i.e., screening and eligibility) included in the scoping review.	6=7
Data charting process‡	10	Describe the methods of charting data from the included sources of evidence (e.g., calibrated forms or forms that have been tested by the team before their use, and whether data charting was done independently or in duplicate) and any processes for obtaining and confirming data from investigators.	7
Data items	11	List and define all variables for which data were sought and any assumptions and simplifications made.	5
Critical appraisal of individual sources of evidence§	12	If done, provide a rationale for conducting a critical appraisal of included sources of evidence; describe the methods used and how this information was used in any data synthesis (if appropriate).	7
Synthesis of results	13	Describe the methods of handling and summarizing the data that were charted.	7
RESULTS			
Selection of sources of evidence	14	Give numbers of sources of evidence screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally using a flow diagram.	6-8
Characteristics of	15	For each source of evidence, present characteristics for	7

SECTION	ITEM	PRISMA-ScR CHECKLIST ITEM	REPORTED ON PAGE #
sources of evidence		which data were charted and provide the citations.	
Critical appraisal within sources of evidence	16	If done, present data on critical appraisal of included sources of evidence (see item 12).	NA
Results of individual sources of evidence	17	For each included source of evidence, present the relevant data that were charted that relate to the review questions and objectives.	7
Synthesis of results	18	Summarize and/or present the charting results as they relate to the review questions and objectives.	8-9
DISCUSSION			
Summary of evidence	19	Summarize the main results (including an overview of concepts, themes, and types of evidence available), link to the review questions and objectives, and consider the relevance to key groups.	16
Limitations	20	Discuss the limitations of the scoping review process.	19-20
Conclusions	21	Provide a general interpretation of the results with respect to the review questions and objectives, as well as potential implications and/or next steps.	20-21
FUNDING			
Funding	22	Describe sources of funding for the included sources of evidence, as well as sources of funding for the scoping review. Describe the role of the funders of the scoping review.	21

JBI = Joanna Briggs Institute; PRISMA-ScR = Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews.
* Where *sources of evidence* (see second footnote) are compiled from, such as bibliographic databases, social media platforms, and Web sites.
† A more inclusive/heterogeneous term used to account for the different types of evidence or data sources (e.g., quantitative and/or qualitative research, expert opinion, and policy documents) that may be eligible in a scoping review as opposed to only studies. This is not to be confused with *information sources* (see first footnote).
‡ The frameworks by Arksey and O'Malley (6) and Levac and colleagues (7) and the JBI guidance (4, 5) refer to the process of data extraction in a scoping review as data charting.
§ The process of systematically examining research evidence to assess its validity, results, and relevance before using it to inform a decision. This term is used for items 12 and 19 instead of "risk of bias" (which is more applicable to systematic reviews of interventions) to include and acknowledge the various sources of evidence that may be used in a scoping review (e.g., quantitative and/or qualitative research, expert opinion, and policy document).

From: Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA Extension for Scoping Reviews (PRISMAScR): Checklist and Explanation. Ann Intern Med. 2018;169:467–473. doi: 10.7326/M18-0850.

Supplementary file 2 – EBSCOhost search results

EBSCOhost

Mon, November 25, 2024 08:48:23 pm

#	Query	Last Run Via	Results
S26	S22 AND S23 AND S24	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	99
S25	S22 AND S23 AND S24	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	99
S24	S16 OR S17 OR S18 OR S19 OR S20	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	1,168
S23	S1 OR S2 OR S3 OR S4 OR S5 OR S6 OR S7 OR S8 OR S9	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	985,850
S22	(S10 OR S11 OR S12 OR S13 OR S14 OR S15 OR S21)	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	66,094
S21	TI literac* OR AB literac*	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	66,094
S20	TI Youtube OR AB Youtube	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	1,022
S19	TI "video* platform*" OR AB "video* platform*"	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	74
S18	TI "video sharing platform" OR AB "video sharing platform"	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	9
S17	TI "video* shar*" OR AB "video* shar*"	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	116
S16	TI "video* sharin* platform*" OR AB "video* sharin* platform*"	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	11
S15	TI "mobil* literac*" OR AB "mobil* literac*"	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	19

S14	TI "internet* literac*" OR AB "internet* literac*"	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	44
S13	TI "media* literac*" OR AB "media* literac*"	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	1,579
S12	TI "computer* literac*" OR AB "computer* literac*"	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	2,230
S11	TI "technolog* literac*" OR AB "technolog* literac*"	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	1,210
S10	TI "digital literac*" OR AB "digital literac*"	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	1,907
S9	TI "pediatric*" OR AB "pediatric*"	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	2,797
S8	TI infant* OR AB infant*	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	14,906
S7	TI student* OR AB student*	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	757,353
S6	TI preschool* OR AB preschool*	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	29,424
S5	TI Kindergarten* OR AB Kindergarten*	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	20,974
S4	TI girl* OR AB girl*	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	24,210
S3	TI boy* OR AB boy*	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	22,772
S2	TI kid* OR AB kid*	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	7,306
S1	TI child* OR AB child*	Interface - EBSCOhost Research Databases Search Screen - Advanced Search Database - ERIC	286,560

Supplementary file 3: Details of excluded studies

Author(s)	Reason for exclusion
Abdul-Jabbar (2017)	Wrong population
Alroqi et al. (2022)	Wrong concept
Apps (2015)	Wrong population
Barton et al. (2004)	Wrong concept
Bolaños et al. (2023)	Wrong publication type
Cun (2022)	Wrong population
de Caux et al. (2022)	Wrong publication type
De Veirman et al. (2019)	Wrong concept
Filipenko (2003)	Wrong concept
Fukukawa (2020)	Wrong population
Gretter (2017)	Wrong population
Gruszczynska et al. (2013)	Wrong concept
Gruszczynska and Pountney (2013)	Wrong concept
Jackson and Wallin (2009)	Wrong publication type
Kafai and Burke (2013)	Wrong population
Kargin (2016)	Wrong population
La Rose and Detlor (2021)	Wrong population
Lim and Toh (2020)	Wrong population
Lindquist (2009)	Wrong publication type
Lisec and Dezuanni (2018)	Wrong publication type
Livingstone and Helsper (2007)	Wrong population
Maloy et al. (2022)	Wrong population

Martzoukou et al. (2023)	Wrong population
Moruf (2020)	Wrong concept
Muhingi et al. (2021)	Wrong population
Nielsen (2011)	Wrong publication type
Ohler (2009)	Wrong publication type
Olmstead (2015)	Wrong population
Ortega (2008)	Wrong population
Ozturk and Ohi (2018)	Wrong population
Pascopella and Richardson (2009)	Wrong publication type
Pedreira et al. (2022)	Wrong concept
Pettersen and Ehret (2024)	Wrong population
Pratolo et al. (2022)	Wrong population
Reyna et al. (2018)	Wrong concept
Sairanen et al. (2022)	Wrong publication type
Schwartz et al. (2020)	Wrong publication type
Singer and Alexander (2017)	Wrong publication type
Sofkova Hashemi and Cederlund (2017)	Wrong population
Stuart and Thurlow (2000)	Wrong concept
Tan (2013)	Wrong population
Trust (2020)	Wrong concept
Van De Bogart (2014)	Wrong population
Washington et al. (2021)	Wrong publication type

Wennås Brante and Walldén (2023)	Wrong population
Willett et al. (2009)	Wrong publication type
Wohlwend (2017)	Wrong population
Wright (2023)	Wrong publication type
Yu et al. (2022)	Wrong publication type

ABDUL-JABBAR, W. K. 2017. Teaching the blog: Using digital literacy to dismantle stereotypes. *Review of Education, Pedagogy, and Cultural Studies,* 39**,** 220-233.

ALROQI, H., SERRATRICE, L. & CAMERON-FAULKNER, T. 2022. The home literacy and media environment of Saudi toddlers. *Journal of Children and Media,* 16**,** 95-106.

APPS, T. L. 2015. *ICT literacy and the digital divide: Understanding primary students' ICT practices and possibilities* PhD, University of Wollongong,.

BARTON, A. C., DRAKE, C., PEREZ, J. G., ST. LOUIS, K. & GEORGE, M. 2004. Ecologies of Parental Engagement in Urban Education. *Educational Researcher,* 33**,** 3-12.

BOLAÑOS, F., SALINAS, Á. & PILEROT, O. 2023. Instructional techniques and tools reported as being used by teachers within empirical research focusing on in-class digital ability development: a literature review. *Journal of Computers in Education,* 10**,** 57-81.

CUN, A. 2022. Digital literacy practices and identities of two children with refugee backgrounds. *Bilingual Research Journal,* 45**,** 205-221.

DE CAUX, B. C., PRETORIUS, L. & MACAULAY 2022. *Research and Teaching in a Pandemic World: The Challenges of Establishing Academic Identities During Times of Crisis,* Singapore, Springer.

DE VEIRMAN, M., HUDDERS, L. & NELSON, M. R. 2019. What Is Influencer Marketing and How Does It Target Children? A Review and Direction for Future Research. *Front Psychol,* 10**,** 2685.

FILIPENKO, M. J. 2003. *Constructing word/world knowledge together: Young children's emerging understandings of/with informational texts.* The University of British Columbia (Canada).

FUKUKAWA, M. 2020. The practices of digital literacy in childhood and the perspectives of mothers in the cases of Spanish-Japanese children. *Edmetic,* 9**,** 52-79.

GRETTER, S. A. Y., AMAN AND GLEASON, BENJAMIN 2017. Walking the Line between Reality and Fiction in Online Spaces: Understanding the Effects of Narrative Transportation. *Journal of Media Literacy Education,* 9**,** 1-21.

GRUSZCZYNSKA, A., MERCHANT, G. & POUNTNEY, R. 2013. "Digital futures in teacher education": Exploring open approaches towards digital literacy. *Electronic Journal of e-Learning,* 11**,** 193-206.

GRUSZCZYNSKA, A. & POUNTNEY, R. 2013. Developing the Concept of Digital Literacy in the Context of Schools and Teacher Education. *Enhancing Learning in the Social Sciences,* 5**,** 25-36.

JACKSON, B. & WALLIN, J. 2009. Rediscovering the "Back-and-Forthness" of Rhetoric in the Age of YouTube. *College Composition and Communication,* 61**,** W374-W396.

KAFAI, Y. B. & BURKE, Q. 2013. Computer Programming Goes Back to School. *Phi Delta Kappan,* 95**,** 61-65.

KARGIN, T. 2016. *Literacy in a new playground: Young children's literacy practices in commercially designed virtual play worlds.* Doctor of Philosophy, Indiana University.

LA ROSE, T. & DETLOR, B. 2021. Social Work Digital Storytelling Project: Digital Literacy, Digital Storytelling, and the Makerspace. *Research on Social Work Practice,* 31**,** 599-609.

LIM, F. V. & TOH, W. 2020. Children's digital multimodal composing: implications for learning and teaching. *Learning, Media and Technology,* 45**,** 422-432.

LINDQUIST, T. M. 2009. In school and out: a closer look at new literacies.
LISEC, J. & DEZUANNI, M. 2018. Video making to support science investigations. *Teaching Science,* 64**,** 10-14.
LIVINGSTONE, S. & HELSPER, E. 2007. Gradations in digital inclusion: children, young people and the digital divide. *New Media & Society,* 9**,** 671-696.
MALOY, R., BUTLER, A. & GOODMAN, L. 2022. Critical media literacy in teacher education: Discerning truth amidst a crisis of misinformation and disinformation. *Journal of Technology and Teacher Education,* 30**,** 167-176.
MARTZOUKOU, K., PANAYIOTAKIS, I., HERBERT, N., GREY, E. & MACDONALD, N. 2023. 'Maddie is Online': A Creative Learning Path to Digital Literacy for Young People. *Computers in the Schools***,** 1-30.
MORUF, H. 2020. Information Literacy through Library Services: A Key Competency in Knowledge Society. *Lagos Journal of Library and Information Science,* 9**,** 143-152.
MUHINGI, W., MAVOLE, J. & NZAU, M. 2021. Digital Literacy and Online Child Abuse among Primary School Children in Langata Sub-county, Nairobi City County in Kenya.
NIELSEN, G. 2011. Media literacy in the social studies classroom. *Education Digest,* 76**,** 43-45.
OHLER, J. 2009. New-media literacies. *Academe,* 95**,** 30-33.
OLMSTEAD, K. 2015. *21st century family literacy*. Hofstra University.
ORTEGA, L. E. 2008. *Digital practices and literacy identities in English education: From deterministic discourses to a dialectic framework*. Ph.D., The Pennsylvania State University.
OZTURK, G. & OHI, S. 2018. Understanding young children's attitudes towards reading in relation to their digital literacy activities at home. *Journal of Early Childhood Research,* 16**,** 393-406.
PASCOPELLA, A. & RICHARDSON, W. 2009. The new writing pedagogy. *District administration,* 45**,** 44.
PEDREIRA, M., RENÉS, P., CASTILLO-ABDUL, B. & AGUADED, I. 2022. YouTube videos for young children: an exploratory study. *Digital Education Review*.
PETTERSEN, K. & EHRET, C. 2024. Refrains of Friendship in Young Children's Postdigital Play. *Journal of Literacy Research,* 56**,** 27-50.
PRATOLO, B. W., FATIMAH, N. & ZURAINA, A. 2022. Digital Literacy Readiness: Voices of Indonesian Primary and Secondary English Teachers. *English Language Teaching Educational Journal,* 5**,** 129-142.
REYNA, J., HANHAM, J. & MEIER, P. 2018. The Internet explosion, digital media principles and implications to communicate effectively in the digital space. *E-learning and Digital Media,* 15**,** 36-52.
SAIRANEN, H., KUMPULAINEN, K., NORDSTRÖM, A. & KAJAMAA, A. 2022. Young children initiating and negotiating their digital literac y practices in their homes. *Nordic Childhoods in the Digital Age***,** 53.
SCHWARTZ, M., BALI, M., BLOCKSIDGE, K., BROWN, C., CAINES, A., DERMODY, K., GELETTE, C., LEVESQUE, L. & PETERS, J. 2020. Digital Citizenship Toolkit. Toronto Metropolitan University.
SINGER, L. M. & ALEXANDER, P. A. 2017. Reading on paper and digitally: What the past decades of empirical research reveal. *Review of educational research,* 87**,** 1007-1041.
SOFKOVA HASHEMI, S. & CEDERLUND, K. 2017. Making room for the transformation of literacy instruction in the digital classroom. *Journal of early childhood literacy,* 17**,** 221-253.
STUART, C. & THURLOW, D. 2000. Making it their own: Preservice teachers' experiences, beliefs, and classroom practices. *Journal of teacher education,* 51**,** 113-121.
TAN, E. 2013. Informal learning on YouTube: Exploring digital literacy in independent online learning. *Learning, media and technology,* 38**,** 463-477.
TRUST, T. 2020. Teaching with digital tools and apps.
VAN DE BOGART, W. G. 2014. Evaluating digital literacy skills of EFL Thai students' using LINE chat application. *Executive Journal,* 34**,** 166-176.
WASHINGTON, J., WOODARD, A., BECKER, J. D., RHODES, J. A., HARRIS, A., KEYES, O. & NAFF, D. B. 2021. Digital Equity in the Time of COVID: Student Use of Technology for Equitable Outcomes.
WENNÅS BRANTE, E. & WALLDÉN, R. 2023. "Internet? That's an app you can download". First-graders use linguistic resources to describe internet and digital information. *Education Inquiry,* 14**,** 1-21.
WILLETT, R., ROBINSON, M. & MARSH, J. 2009. *Play, creativity and digital cultures*, Routledge.

WOHLWEND, K. E. 2017. Monster High as a virtual dollhouse: Tracking play practices across converging transmedia and social media. *Teachers College Record,* 119**,** 1-20.
WRIGHT, W. T. 2023. *Participation in the Age of the Algorithm: A Study of Remix, YouTube, and ELA Teacher Education.* University of Georgia.
YU, Z., XU, W. & YU, L. 2022. Constructing an online sustainable educational model in COVID-19 pandemic environments. *Sustainability,* 14**,** 3598.