



Children Online:
Research and Evidence

Theories and Concepts for Understanding Children’s Digital Lives: An Annotated Bibliography

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This annotated bibliography provides a roadmap for understanding nine key areas of children’s digital lives. It has been designed for researchers and research users and provides essential and supplementary texts on each of the areas.

Citation: Livingstone, S. and Stoilova, M. (2021). Theories and Concepts for Children’s Digital Lives: An Annotated Bibliography. CO:RE – Children Online: Research and Evidence.

Acknowledgements: We thank Miriam Rahali for her assistance in developing this bibliography and the many colleagues who contributed sources and insights.

Key areas of children’s digital lives

Children and young people The child, children, young people Development and evolving capacity Structures and cultures of childhood Diversity and difference	Digital environment Technology and affordances Uses, users and domestication Normative values in design Innovation, datafication and AI	Access Place and time of access In/equality and in/exclusion Fixed, mobile and wearable Transcending on/offline
Opportunities and benefits Internet engagement Engagement and participation Information and exploration Play, creativity, fun	Skills and literacies Learning and information skills Digital skills and competencies Data literacy and e-Safety Civic and other literacies	Risk and harm Content, contact, conduct, contract Familiar and emerging risks Cross-cutting risks including privacy Relation between risk and harm
Health and wellbeing Digital wellbeing and health Mental ill health and anxiety Resilience and coping Vulnerability	Social support Parental mediation Socialisation, family and school Sociality and peer support Professional help services	Policy and regulation Children’s rights in the digital age Law, policy and regulation Agency, voice and activism Responses to emerging challenges



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This project has received funding from the European Union’s Horizon 2020

Grant Agreement ID 871018

SKILLS AND LITERACIES

The concepts of skills, literacies and competences as they relate to children online is complex and somewhat contested. Contrasting approaches – more instrumental or cultural, more individual or societal, more focused on the digital or more inclusive of all forms of communication – have long been debated. A host of terms are in use, from the very specific and new (for example, data literacy or gaming literacy) to the most inclusive and long-established (for example, media literacy or critical literacy).

In different languages and theoretical traditions, different approaches are taken, often focusing on the concept of competence or competencies or, more recently, capabilities. There are also debates over the relation between digital literacies and all that such literacies enable – creativity, participation, communication, safety and so forth. A range of approaches is illustrated in the sources in this section.

Aesaert, K., Voogt, J., Kuiper, E. & van Braak, J. (2017). [Accuracy and bias of ICT self-efficacy: An empirical study into students' over- and underestimation of their ICT competences.](#) *Computers in Human Behavior*, 75, 92–102.

This study recognizes that ICT self-efficacy is not an efficient measure of children's actual digital skills, but instead focuses on how actual ICT competencies relate to children's ICT self-efficacy.

 **Alvarez, M. (2019).** [\(Digital\) media as critical pedagogy.](#) *Media Theory*, 3(1), 73–102.

This article discusses how to develop critical pedagogy in the age of digital media. Technology-enhanced learning involves relocating the learning process in the open relationship between the learner and the mediated environment.

 **boyd, d. (2018).** [You think you want media Literacy ... do you?](#) SXSWedu keynote, 9 March. Points: Data & Society blog. [See also: [boyd's response](#) to major criticisms of the talk.]

boyd offers a critique of media literacy and argues for better recognition of how information can be weaponised in new ways in an information economy.

Buckingham, D. (2007). [Digital media literacies: Rethinking media education in the age of the internet.](#) *Research in Comparative and International Education*, 2(1), 43–55.

Updating his account of media literacy from the age of mass communication (primarily television) to the age of the internet and digital media, Buckingham critiques narrow, functional or instrumental accounts of digital skills and literacy. He draws on a broadly cultural studies approach (encompassing the socio-cultural theory of learning and semiotic theory of media) to advocate for a four-dimensional account of digital literacy as encompassing an understanding of representation, language, production and audience.

 Cappello, G., Felini, D. & Hobbs, R. (2013). [Reflections on global developments in media literacy education: Bridging theory and practice.](#) *Journal of Media Literacy Education*, 3(2).

This article is useful for a bibliography of work of 20th-century educational scholars (primarily European) and the emergence of a shared theoretical framework to understand the practice of cultivating critical thinking among audiences about their everyday exposure to mass media, news and popular culture.

 Carmi, E. & Yates, S.J. (2020). [What do digital inclusion and data literacy mean today?](#) *Internet Policy Review*, 9(2), 1–14.

This is an editorial introduction to a Special Issue discussing digital inequalities as an important part of broader social equity and justice focusing on the most prominent debates around digital inclusion, highlighting what is still relevant and what needs to be re-evaluated.

 Carmi, E., Yates, S.J., Lockley, E. & Pawluczuk, A. (2020). [Data citizenship: Rethinking data literacy in the age of disinformation, misinformation, and malinformation.](#) *Internet Policy Review*, 9(2).

This article discusses the meaning of literacy in times of misinformation. It provides an overview of different definitions of literacy (written, media, information, digital and data literacy) and their intersection with dis-/mis-/malinformation and ‘fake news’, and these literacies and variations in social context. It highlights three main gaps in current data literacy frameworks.

 Carretero, S., Vuorikari, R. & Punie, Y. (2017). [The Digital Competence Framework for Citizens with Eight Proficiency Levels and Examples of Use.](#) European Union.

While instrumental in its approach, the DigComp framework is influential and needs to be taken on board in the discourse on digital literacy and skills. There is a large literature on this, but this is a useful outline of the framework.

 Claes, A. & Philippette, T. (2020). [Defining a critical data literacy for recommender systems: A media-grounded approach.](#) *Journal of Media Literacy Education*, 12(3), 17–29.

This article outlines current critical data literacies approaches and uses key concepts to develop a framework defining the competences needed to assess technologies for inclusion in the digital ecosystem.

 Cortesi, S., Hasse, A., Lombana, A., Kim, S. & Gasser, U. (2020). [Youth and Digital Citizenship+ \(Plus\): Understanding Skills for a Digital World.](#) Berkman Klein Center Research Publication No 2020-2.

This report explores the concept of digital citizenship, providing an overview of the current visions, identifying gaps and unexplored areas through a systematic mapping exercise. This is a good addition to the literature on the digital citizenship.

 Cortoni, I., Lo Presti, V. & Cervelli, P. (2015). [Digital competence assessment: A proposal for operationalizing the critical dimension.](#) *Journal of Media Literacy Education*, 7(1), 46–57.

Beginning from the European framework, the authors offer a theoretical definition of critical competencies and provide an operational definition from semiotic and linguistic patterns in the scholarly literature.

 Davis, K., Katz, S.L., Santo, R. & James, C. (2013). Fostering cross-generational dialogues about the ethics of online life. *Journal of Media Literacy Education*, 2(2).

This article is useful for its consideration of the ethical dimensions of online life.

Ess, C. (2014). Digital Media Ethics (2nd edn). Digital Media and Society Series. Polity Press.

This is a very useful introduction to the field of digital media ethics and a valuable alternative perspective on civic literacies. Although questions of ethics may seem separate from questions of skills and literacies, they are, in fact, closely intertwined, including in relation to citizen journalism and digital citizenship.

 Friesem, Y. (2017). Beyond accessibility: How media literacy education addresses issues of disabilities. *Journal of Media Literacy Education*, 9(2), 1–16.

By connecting the practice of critical media literacy with disability theory, this article offers a theoretical and practical framework for media literacy educators.

 Gibbons, D. (2013). Developing an ethics of youth media production using media literacy, identity, and modality. *Journal of Media Literacy Education*, 4(3), 256–265.

This critical, theoretical article conceptualizes what determines an ethics for youth media production.

 Gong, Z. & Holiday, S. (2021). A lot like the other: Parents' consumer responses to brand-modified product placements in children's programming. *Journal of Media Literacy Education*, 13(1), 41–55.

This article could be useful for innovating methodological design. The researchers use a combination of concepts to apply a 2 (brand reference: modified vs. direct) x 2 (educational value: high vs. low) x 2 (active mediation intention: high vs. low) mixed-measures experimental design.

 Graber, D. & Mendoza, K. (2013). New Media Literacy Education (NMLE): A developmental approach. *Journal of Media Literacy Education*, 4(1), 82–92.

This article provides an overview of a cognitive-developmental approach to ethical thinking.

 Hartmann, M. (2010). Media Literacy/Competence, Participation and Youth. Conceptual Reflections 2.0. In T. Olsson & P. Dahlgren (eds) *Young People, ICTs and Democracy*. Nordicom, 141-158.

Hartmann explores the concept of media competence (which includes media criticism, media knowledge, media design and media use) in relation to digital participation.

 Jenkins, H. (2009). Confronting the Challenges of Participatory Culture: Media Education for the 21st Century. The MIT Press.

Jenkins is an influential advocate of the idea that digital literacy, like literacy more generally, is a complex and critical means of acting on the world. He conceives of young people drawing on digital literacy to empower them as agents and citizens working in collaboration to create, participate and express themselves, including to bring about political change.

 Kafai, Y.B. (1995). [*Minds in Play: Computer Game Design as a Context for Children's Learning*](#). Lawrence Erlbaum.

Kafai is often cited as one of the first authors who promoted learning by creating computer games. She also argued that gender stereotypes are manifested in computer games for children.

Markham, A.N. (2019). [*Critical pedagogy as a response to datafication*](#). *Qualitative Inquiry*, 25(8), 754–760.

This contribution offers theoretical insights for the development of a critical pedagogy curriculum to develop data literacy. Basic components of such a curriculum can be adjusted and adapted as needed to theoretically inform intervention with children as well.

 Mihailidis, P. (2014). [*Media Literacy and the Emerging Citizen: Youth, Engagement and Participation in Digital Culture*](#). Peter Lang.

This book offers a normative approach to a media literate culture and is a good antidote to media panics on this subject.

 Mihailidis, P. (2019). [*Civic Media Literacies, Re-Imagining Human Connection in an Age of Digital Abundance*](#). Routledge.

This book debates the 'civic agency gap' in media literacy, and offers a pedagogical design for civic intentionality. It illustrates the main arguments by discussing practical examples of young citizens' civic engagement online.

 Meyers, E.M., Erickson, I. & Small, R.V. (2013). [*Digital literacy and informal learning environments: An introduction*](#). *Learning, Media and Technology*, 38(4), 355–367.

The authors discuss digital literacy in the context of informal learning contexts. They define informal contexts as those that take place outside school – such as libraries, museums etc. – and they examine how informal contexts contribute to the development of digital literacy.

 Pangrazio, L. (2014). [*Reconceptualising critical digital literacy*](#). *Discourse: Studies in the Cultural Politics of Education*, 37, 1–12.

Pangrazio argues for a new approach to critical digital literacy that is focused less on the reception or consumption of mass-produced digital content and more on how users learn to design, make and produce digital forms and content and, in the process, gain a critical understanding of these processes.

Papert, S. (1980). [*Mindstorms: Children, Computers and Powerful Ideas*](#). Basic Books.

Papert is often cited as one of the most influential individuals in the field of child–computer interaction. He was one of the first to recognise that computers allow children to learn in relation to

their own interests. The theory focuses on how to support children to become authors and creators rather than passive recipients of educational content or other media for children.

 Parola, A. & Ranieri, M. (2013). [The practice of media education: International research on six European countries.](#) *Journal of Media Literacy Education*, 3(2), 90–100.

This article stems from the wide framework carried out within the OnAir European project (<http://www.onair.medmediaeducation.it>).

 Robertson, J. & Tisdall, E.M. (2020). [The importance of consulting children and young people about data literacy.](#) *Journal of Media Literacy Education*, 12(3), 58–74.

This article offers three frames for the way children and young people’s digital literacy has primarily been constituted by adult concerns.

 Sander, I. (2020). [What is critical big data literacy and how can it be Implemented?](#) *Internet Policy Review*, 9(2).

This article argues that data literacy should be conceptualised not merely as skills to use digital media, the internet or big data but as ‘critical big data literacy’ that includes an understanding of the risks and implications of big data practices that enable empowered participation in a digital world. It offers a practical example of how to assess/research critical big data literacy.

 Turner, K., Jolls, T., Hagerman, M., O’Byrne, W., Hicks, T., Eisenstock, B. & Pytash, K. (2017). [Developing digital and media literacies in children and adolescents.](#) *Pediatrics*, 140, 122–126.

This article provides recommendations for research and policy development, for those looking for answers to: what specific competencies must young people acquire? How do these competencies influence pedagogy? How are student knowledge, attitudes and behaviours changed? What are the best ways to assess students’ digital and media literacy?

 van Dijk, J.A.G.M. & van Deursen, A.J.A.M. (2014). [Digital Skills: Unlocking the Information Society.](#) Palgrave Macmillan.

This book encompasses a wide range of theory and evidence from the burgeoning field of research on digital skills, including their relation to digital literacies of all kinds. It offers a framework centred on six digital skills, spanning technology- and content-related skills. The book’s particular strength is its discussion of multiple dimensions of difference within the general public, including attention to age from childhood through to the elderly, and in relation to socio-economic and other factors.

 UNICEF (2019). [Digital Literacy for Children: Exploring Definitions and Frameworks.](#) UNICEF.

This is a concept review as well as a policy ‘think piece’ that acknowledges the debates about the definitions and consequences of digital literacy, and puts the concept in a child rights framework so as to guide policy and practice.

 Vicente, M.R. & Lopez, A. J. (2010). [A multidimensional analysis of the disability digital divide: Some evidence for internet use.](#) *Information Society*, 26(1), 48–64.

Vicente and Lopez propose a framework for discussing digital divides in relation to disability that incorporates multiple internet-related dimensions, such as access, affordability, motivation and attitudes, and skills.

Witte, J.C. & Mannon, S.E. (2009). [*The Internet and Social Inequalities*](#). Routledge.

This book discusses the presence of an enduring digital divide, which starts with access but continues to other areas such as digital skills. Digital stratification runs deeper to produce better outcomes for those who are more able to take advantage of the benefits offered by the internet.