# Digital Inclusion of Low-Literate Adults: Challenging the Sequential Underpinnings of the Digital Divide

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# DIGITAL INCLUSION OF LOW-LITERATE ADULTS

## CHALLENGING THE SEQUENTIAL UNDERPINNINGS OF THE DIGITAL DIVIDE

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## ABSTRACT

Contemporary models of digital inclusion and the digital divide assume that developing the digital literacy that enables individuals to participate in society is a sequential and linear process that is more or less similar for all individuals in all contexts and requires basic linguistic skills. This paper challenges these understandings, arguing that such a technical, normative perspective excludes marginalized and disadvantaged publics, such as low-(digital) literate citizens. Based on a longitudinal ethnographic study of low-literate Dutch adults, we show that the often-described causal relation between (digital) literacies, (digital) participation, and (digital) inclusion is not as evident as it seems and neglects the important socio-cultural contexts through which (digital) literacies are often gained and enacted in everyday practice. Consequently, we argue that current conceptualizations of (digital) inclusion and (digital) participation need to be rethought in terms of the limitations, potential, and capabilities of low-literate people.

# 1 INTRODUCTION

As more and more aspects of society become digitized, citizens are increasingly expected to participate digitally, a process that increases digital inequalities. It is often thought that (digital) literacies facilitate participation and that, hence, (digital) literacies should be understood as the gateway towards fostering (digital) inclusion (Hargittai and Hinnant, 2008; van Dijk, 2020). However, the relation between digital (low-)literacy and digital inclusion is complex and remains understudied, especially in light of marginalized publics (Ragnedda, 2016; Selwyn, 2004). Most current models of the digital divide employ a rather linear, sequential, and instrumental rationale regarding the use of digital technologies (Van Deursen, Helsper, and Eynon, 2016; van Dijk, 2020). Van Deursen et al. (2016), for example, formulated the concept of *sequential digital exclusion*, thereby distinguishing between several sequential levels of inequality where a lack of digital literacies prevents digital participation (e.g., access, skills, usage, motivation, etcetera). Such studies understand digital inclusion in a technical sense and presuppose that basic linguistic skills are necessary to participate digitally. Yet, this is problematic, as it implies a normative understanding of (digital) participation, where an individual is only able to participate if they possess the necessary basic (digital) literacy skills to make use of digital media. Hence, this understanding is intrinsically exclusionary for marginalized publics, such as low-literate adults.

This group's use of information and communications technologies (ICTs) largely differs from that of more generic publics that have higher levels of traditional and digital literacy (Grotlüschen et al., 2019; Tsatsou, 2021). For example, low-literate adults may rely upon third-party actors such as literacy supporters (Grotlüschen et al., 2019), or digital care workers (Kaun and Forsman, 2022) to use ICTs. Additionally, current understandings of (digital) participation and the digital divide largely neglect the situated socio-cultural contexts through which disadvantaged publics participate—for example, how they make use of digital media in more affective and social ways (Buddeberg, 2016; Yilmaz, 2016). As such, dominant understandings of digital inclusion/exclusion and the digital divide must be scrutinized and reconsidered in light of a more inclusive conception that focuses on the potential capabilities of low-literate adults, and the limitations they are confronted with in their everyday lives. Hence, this article problematizes current understandings of participation, digital inclusion, and the digital divide in light of low-literate Dutch adults, a subgroup that is heavily understudied and runs the risk of falling behind in an ever-increasing digitalization of society.

Building upon an ethnographic study consisting of participant observations and in-depth interviews with low-literate Dutch adults (N=73), this paper presents an analysis of the sequential and hierarchical underpinnings of contemporary models of digital inclusion and the digital divide. We

challenge three assumptions that underly current understandings of digital literacies and the digital divide. First, we argue that sequential models of the digital divide are problematic when applied to the situated (digital) practices of low-literate Dutch adults. Second, current understandings of literacy mostly draw upon autonomous models of literacy education (Street, 2003), which ignores the social contexts through which (digital) literacies are often gained and enacted. We argue that this becomes problematic when translated to the everyday practices of low-literate individuals, as studies show that such adults often make use of their social network to be able to participate in society at large (Grotlüschen et al., 2019; Kaun and Forsman, 2022). However, such social actors are not considered in models of the digital divide and/or digital inclusion (van Deursen et al., 2014; van Dijk, 2020). Third, we scrutinize the prioritization of digital literacies over traditional literacy and the neglect of socio-cultural contexts when learning about and enacting digital literacies in practice.

Drawing from these three points, this article shows how and why current sequential understandings misinterpret the participatory practices of low-literate adults, which entail various digital literacies and (linguistic) limitations that low-literate adults experience in their daily lives. We argue that the often-described causal relation between (digital) literacies and (digital) inclusion is not as evident as it seems and needs to be rethought in terms of the limitations, potential, and capabilities of low-literate citizens.

# 2 CHALLENGING THREE UNDERPINNINGS OF THE DIGITAL DIVIDE

## 1.1 SEQUENTIALITY OF THE DIGITAL DIVIDE

Current work on digital inequalities identifies three digital divides at distinct levels, relating to: (1) the access and frequency of use, (2) successive kinds of access, users' skills and diversity of use, and finally, (3) the benefits and potential outcomes of media use (Helsper, 2012; van Dijk, 2020). The first-level digital divide refers to inequalities in access to digital technologies related to different (economic) backgrounds, often divided in a binary manner of haves and have nots (e.g., Hargittai, 1999). The second-level digital divide relates to differences in digital skills and diversity of use in regard of four successive kinds of access: (1) motivational, (2) material, (3) skills, and (4) usage access (Van Dijk 2005, 2020). The third-level digital gap shifts the focus to the different outcomes achieved after using digital technologies (e.g., Helsper 2012; Van Deursen et al. 2017). Additionally, current (quantitative) research primarily offers selective insights into these three levels of the digital divide, and often engages with more 'visible' parts of the populace (Goedhart, Verdenk & Dedding, 2022; Helsper & Reisdorf, 2017; van Deursen & van Dijk, 2015). Most contemporary studies focus on the second and/or third level and/or the transition from the second towards the third level, because

in most instances a divide in the first level of access is closed when someone acquires a digital device (Hargittai, Piper and Morris, 2018; Helsper 2012; Scheerder, van Deursen, van Dijk, 2019). Thus, it is often argued that when the first level is addressed, users can move on to the second level and then to the third level. For example, when a citizen buys a laptop or a smartphone, this allows him/her to develop digital skills by trial-and-error, which then may lead to being able to gain tangible outcomes from such digital tasks (see Figure 1). This is a somewhat oversimplified illustration of how the digital divide is conceptualized. However, policy and education often presuppose this sequential model of the digital divide in the context of digital inequality (Mariën et al., 2016). Additionally, reports on the digital divide are also often constructed on similar normative underpinnings that digital media usage will—almost naturally—result in positive development, engrained in a techno-solutionist narrative (Helsper, 2012; 2021).

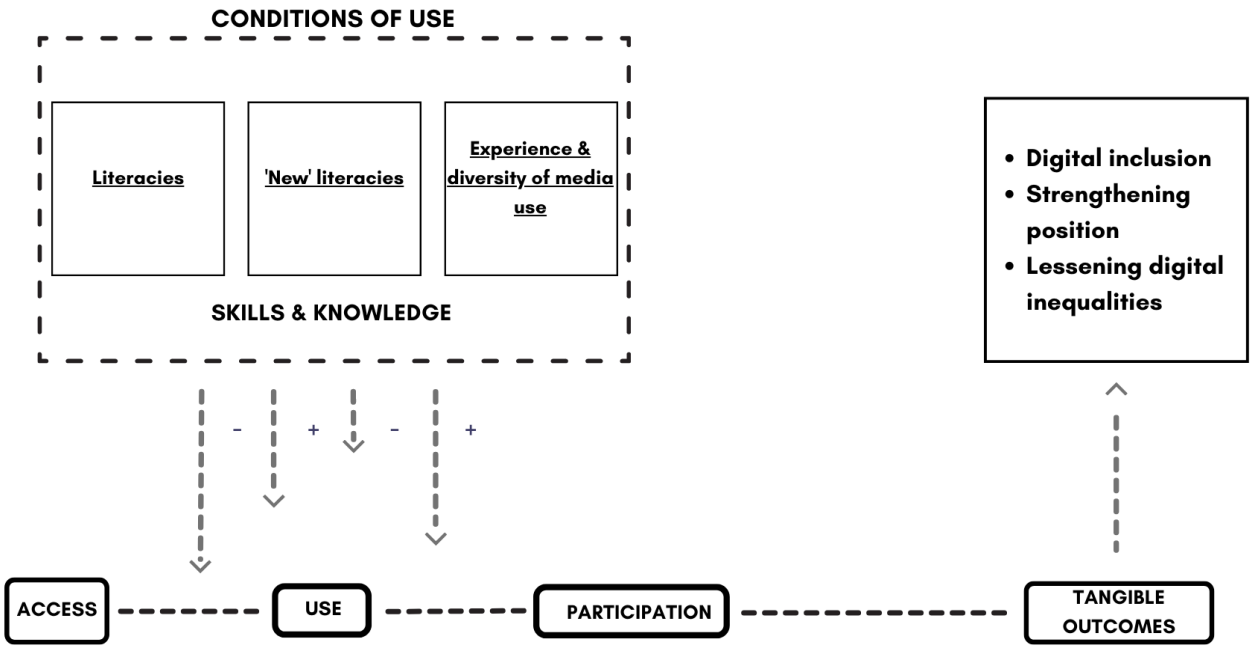


**Figure 1: Sequential model of the digital divide**

This sequential way of thinking about the digital divide implies a hierarchical order of exclusion, where citizens are excluded in the order of the three levels of the digital divide (Helsper, 2012). Furthermore, this way of thinking about the digital divide is often understood in terms of the transition from one level to another and not in relation to differences within the levels themselves. The latter would be relevant, for example, when comparing someone acquiring a smartphone and learning to use it with someone acquiring a laptop or PC, which has entirely different hardware and software and prebuilt norms. A sequential understanding is implicitly incorporated within this level-to-level progression: Poor technical skills, for example, mean that an individual will not even have the

opportunity to perform other informational skills and tasks (Friemel et al., 2021). Finally, these models assume that this hierarchy is largely equal for all individuals across contexts, while people's situated position in interrelated structures of power is often negated (Zheng & Walshman, 2021). For example, when members of the general public gain access to digital media and want to develop digital skills—i.e., when buying a laptop or smartphone—they may read the manual accompanying the device if something is unclear or search the internet for additional guidelines on how to make use of the device and educate themselves.

However, when this process is applied to the context of a low-literate user, with the associated limitations and capabilities, this becomes far more complex, as that individual cannot simply educate themselves because of literacy limitations. According to the sequential model, this means that there is no way for these low-literate individuals to advance to the second and third level of the digital divide. Yet, our observations show that even when they lack access, low-literate adults can develop skills or achieve outcomes not deemed possible by current models of the digital divide (Van Dijk, 2020). For example, when low-literate individuals make use of *literacy supporters* (Grotlüschen et al., 2019) or *digital care workers* (Kaun and Forsman, 2022), they do not have direct access to ICTs; however, they are still able to participate with the help of third parties. Thus, the process of developing (digital) literacies that facilitate digital inclusion is not necessarily hierarchical or linear; the order between these levels may differ depending on users' personal, technological, socio-cultural, economic, and political contexts. As such, the sequence of action is not primarily hierarchical or linear; rather, it is recursive and fluid.

To our knowledge, only a few studies have taken this nonsequential relationship between the dimensions of digital inequalities into account and have explored how it relates to disadvantaged publics (Buddeberg, 2016; Friemel et al. 2021; Kaun and Forsman, 2022; Tirado-Morueta et al. 2017; Wei et al. 2011). One reason might be because some of the basic inequalities (e.g., concerning access) have been considered solved among most publics. However, they are still very relevant within the context of low-literate adults. Such publics typically do not possess the same economic resources to attain media devices as the more general publics and do not have the basic literacy skills to gain knowledge from and through such digital devices to make effective use of them. As such, more work is needed focusing on this first level, while simultaneously relating it to the second and third levels within personal, technological, socio-cultural, economic, and political dimensions.

## 1.2 FORGETTING THE SOCIAL CONTEXT

Digital literacies are understood as an important aspect of being able to participate digitally; however, the social context through which digital literacies are learned, practiced, and appropriated should

not be forgotten (Ananiadou & Claro 2009). Prior work on digital inequalities assumes that digital literacies are neutral and technical concepts that can be used by drawing upon a monolithic set of skills (Gee, 1991). This goes back to what Brian Street calls the "autonomous" model of literacy education (Street, 1985). Street posits that two dominant forms of literacy exist: the "autonomous model" and the "ideological model." He hence distinguishes between literacy events and practices (Street, 1985, p. 77). He describes the autonomous model as:

> Introducing literacy to poor, "illiterate" people, villages, urban youth etc. will have the effect of enhancing their cognitive skills, improving their economic prospects, making them better citizens, regardless of the social and economic conditions that accounted for their "illiteracy" in the first place. I refer to this as an "autonomous" model of literacy. The model, I suggest, disguises the cultural and ideological assumptions that underpin it so that it can then be presented as though they are neutral and universal and that literacy as such will have these benign effects (Street, 2003, p. 77).

This autonomous approach thus imposes western conceptions of literacy on to other cultures, or within countries with different socio-economic classes (Street, 2003). This perspective has been challenged in recent decades, as studies showed that in practice literacy has different effects depending on the context through which it is enacted (Gee, 1991) and differs depending on the socio-cultural arrangements it draws upon (Street, 2003).

Scholars have therefore increasingly adopted the ideological model of literacy, which constructs a more situated and "culturally sensitive view of literacy practices as they vary from one context to another" (Street, 2003, p. 78). As such, this understanding relates more to the livelihoods and societal positions of low-literate citizens, as these marginalized groups face very different issues regarding participation in society depending on differences in their ethnicity, age, disability, gender, educational level, and socio-economic position. The ideological model draws on the understanding that literacy is first and foremost a social practice and not a purely neutral and/or technical tool to understand and make use of (digital) texts. As Street notes: "the ways in which people address reading and writing are themselves rooted in conceptions of knowledge, identity, and being (Street, 2003, p. 78). This underpins the contextual and situational nature of literacies, which is often neglected when we explore how such traditional literacies translate into digital ones that foreground a solely technical and neutral understanding of literacy.

While digital literacies indeed help to make use of digital media, this undermines all of the other dimensions that collectively shape how users of digital media understand and enact the digital world (Friemel et al. 2021). For example, while autonomous models of literacy put cognitive skills at their core and presuppose that reading and writing abilities are necessary for digital participation, this

does not take into account the personal, technological, socio-cultural, economic, and political contexts through which they are translated into everyday (digital) practices. Additionally, actors providing social support to low-literate individuals in navigating the digital society are very important in this process, as they act as third parties who take them by the hand and show them how digital infrastructures work (Grotlüschen et al., 2019; Kaun and Forsman, 2022). Such third-party actors are largely forgotten in current understandings of participation, digital inclusion, and the enactment of digital literacies, but they are highly influential in how ICTs are used in everyday life (Grotlüschen et al., 2019; Kaun and Forsman, 2022).

In addition, our research shows that the affective dimension of human-technology relations is very influential in the context of low-literate adults, as they fill their gaps in cognitive skills regarding the digital with more tacit modes of knowing, that is, gut-feeling, fear, doubt, etcetera. This is another factor largely neglected in current models of the digital divide, yet it seems to be of great importance when talking with low-literate adults about their usage of ICTs. In this sense, the ideological model is more applicable to the multi-dimensionality of digital literacies in the context of its publics and how they enact digital literacies in situated daily practices, originating from their socio-economic conditions. This gives a more contextualized understanding of why and how digital (il)literacy affects inequality and what role (digital) literacies play in diminishing such inequalities in an increasingly digital society where more and more citizens run the risk of being left behind.

## 1.3 THE NEED FOR TRADITIONAL LITERACY IN THE DEVELOPMENT OF DIGITAL LITERACIES

Dominant understandings regarding digital literacies presuppose that basic literacy is a necessary starting point for the development of digital literacies (Friemel et al., 2021; van Dijk, 2020). Most low-literate publics we conversed with acknowledge that possessing basic linguistic skills is a prerequisite for participating as democratic citizens. However, they also note that the more digital literacies they gain, the more they can circumvent their traditional issues with linguistic proficiency and leverage affordances of media and software to enlarge their capabilities with these technologies and strengthen their societal position (Smit, Swart, and Broersma, forthcoming). Thus, the development of digital literacies does not always follow a linear path towards digital participation, digital inclusion and so forth, and can also potentially be leveraged for digital and/or societal non-participation resulting in (digital) exclusion. For example, as we found in our study, migrants and/or refugees may use Google Translate to speak in their native language and let their smartphone translate their native language to another language, bypassing the need to learn the language of the country they currently reside in (Smit, Swart and Broersma, forthcoming). In this way, they consciously exclude themselves from broader society and its cultural codes (language).

This finding aligns with results from studies regarding differences in internet use by diverse publics (Scheerder, van Deursen, van Dijk, 2017; Scheerder, van Deursen, van Dijk, 2019; Van Dijk, 2020), which show that people from different social classes, of different ages, with different genders, and from different ethnic, cultural, and other backgrounds are increasingly using the internet differently. The structural divide observed here is called the usage gap: People with high education levels and social class status use more informational, educational, work, and career enhancing applications, while people with low education levels and social class primarily use apps that offer entertainment, chat or simple communication, and e-shopping (Hargittai and Shafer, 2006; Van Dijk, 2020; Yilmaz, 2016). This partially stems from a difference in skillset, mindset, and affective attitude towards media in general. Affective attitude towards digital media is especially important for low-literate adults, as our results show that low-literate adults prioritize emotions, such as gut-feeling, intuition, and fear in who and what to (dis-)trust—for example, when arranging financial matters through e-banking. Hence, the dominant perspective on digital inclusion and participation as an individualized technical endeavor is not in line with the socially situated everyday practices of low-literate adults. This perspective needs to shift from a top-down prescriptive conceptualization of inclusion and participation towards a bottom-up socially situated perspective. Instead of only talking about how marginalized publics should participate and be included, we argue that we should rather pay attention to what these groups themselves deem important in how participation and inclusion manifest in their everyday life.

# 3 CONCLUSION

Now that economic and social inequalities are rising in large parts of the world, we are confronted with the increasing complexity of closing the digital divide as the digitalization of society progresses. The digital cannot be isolated from the social and vice-versa, so we need to simultaneously fight against digital and social inequality. The socio-economic, cultural, and personal situations of marginalized publics must be centered within policies and pedagogies if we are to simultaneously battle social and digital inequalities in ways that account for what these publics themselves deem important for how to thrive in societies. We should ask whether, for such disadvantaged publics, a digital-by-default society is desirable. It is crucial to explore which skills and attitudes are needed to include marginalized publics into ever-expanding digital societies. In doing so, we can develop better situated and contextualized pedagogies that center the users of digital media from a bottom-up perspective instead of enforcing norms and learning outcomes from a top-down perspective that does not apply to the personal socio-cultural situatedness of these publics. Additionally, more studies are needed to understand the relationships between social and digital inequalities and how they re-enforce

one another. Hence, by centering the potential and possibilities of disadvantaged and/or marginalized publics in how they can participate in situated ways, instead of solely focusing on their limitations, we can develop better suited educational systems, pedagogies, and policies to empower them to participate in ways that are in line with their capabilities and affective dispositions towards digital media.

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