



Intersecting Knowledge on Young People's Well-Being and Use of Digital Technology Across Contexts: A Scoping Review Synthesis

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Introduction

Young people's use of digital technology has been expanding rapidly, and while self-reports indicate that their mental health is deteriorating, the past decade's research on their well-being when coupled with the use of digital technology has been extensive (Livingstone et al., 2021; McCrory et al., 2020; Odgers & Jensen, 2020). However, over the years, this effort has elicited minor, ambiguous and correlational evidence overall (Odgers & Jensen, 2020; Orben & Przybylski, 2019a, b). This leaves the relationship between well-being and use of digital technology open, and an eventual causal direction between these concepts remains unclear.

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More research is needed that goes beyond the technological determinism implicit in studies that repeatedly find small correlations between online activity and adolescent well-being. One alternative is to aim for a better understanding of what digital technology represents to young people's navigation, negotiation and struggle with the usual pitfalls of life (Baym, 2010; Gibbons, 2015). The present study reviews the literature on how young people's agency involving digital technology may help them overcome obstacles to well-being, understood as multiple modes of vulnerabilities, activated in everyday life situations. The aim is to demonstrate how digital technology's harmful or beneficial aspects may change character as its usage is viewed across different social settings. Thus, this chapter addresses the following research question: What novel aspects of the relationship between young people's well-being and digital technology can be revealed from existing research across different contexts of their everyday lives?

Conceptualisations of Well-being in the Use of Digital Technology

Overall, the concept of *well-being* often is defined vaguely in the empirical literature, in which it is used to encompass several discursive themes, including physical health, social and emotional self-management, the individual's capacity to lead a life in accordance with their own values and sustainability linked to the notion of social justice (Spratt, 2017). This vagueness is also characteristic of the literature on young people's use of digital technology (McCrory et al., 2020; Orben & Przybylski, 2019a).

In the literature on young people's digital technology use, *excessive* Internet use regularly has been termed an indicator of negative well-being and mental health problems (McCrory et al., 2020; Orben & Przybylski, 2019b). Spending a lot of time on the Internet is perceived as detrimental to face-to-face social contact, dedication to schoolwork and healthy habits, including regular physical activity and sleep (Manwell et al., 2022; Mikuska et al., 2020). Overall, time spent on online gaming has been viewed as an indicator of addictive behaviour in adolescents (Pawlowska

et al., 2018). Online activities also may increase exposure to online bullying and unfavourable social comparisons with idealised images on social media (Martinez et al., 2019; Twigg et al., 2020).

However, the amount of time spent online may cover very different phenomena and outcomes. Helsper and Smahel (2020) compare the clinical-psychological and digital literacy perspectives to exemplify this difference. Whereas the clinical-psychological perspective regularly labels young people's time spent on the Internet as an indicator of psychological and emotional problems, the digital literacy perspective focusses on the relationship between online activities and digital skills. In the latter perspective, digital skills not only may support self-fulfilment and autonomy, but also may protect against online risk and harm (Livingstone et al., 2021). Nevertheless, the techno-optimism implicit in the digital literacy perspective is nuanced by Livingstone et al. (2021), who find that even if greater digital skills are associated with increased online opportunities and information benefits, some aspects of digital skills also are linked indirectly to greater exposure to online risks.

Helsper and Smahel (2020) and Livingstone et al. (2021) asserted that young people's digital engagement should be understood as critical and complex when viewed from both the clinical-psychological and digital literacy perspectives. First, from both perspectives, individual and structural inequalities affect outcomes from digital engagement. As well-known digital divides, individual inequalities refer to gender, age and disability, while structural characteristics comprise socioeconomic status and ethnic minority background (Talaee & Noroozi, 2019). In short, young people from disadvantaged backgrounds may be more susceptible to psychological problems, rendering them more vulnerable when online (Helsper & Smahel, 2020). Regarding young people's digital skills, not only may a deprived background be detrimental to having such skills, but disadvantaged young people also may be less able to translate their digital skills into outcomes that may further their chances in life (Livingstone et al., 2021; Odgers & Jensen, 2020).

Second, Helsper and Smahel (2020) use their data to question the order of variables, in which they suggest that whether digital engagement is related to negative outcomes depends on the individual's psychological

characteristics before they go online, i.e., adolescents' online risk may mirror offline vulnerabilities. Odgers and Jensen (2020) back this argument when differentiating between psychologically vulnerable and non-vulnerable users, suggesting that adolescents with depressive symptoms may use social media more or otherwise differently compared with peers without such symptoms. Mikuska et al. (2020) move the discussion further when they ask whether digital engagement can be a coping strategy for young people experiencing problems. Adding to this discourse, the present study's argument is that what may be viewed as excessive use of digital technology in one context or social setting of a young person's life may increase this person's well-being in another social setting that is equally important to the individual.

Conceptualising Well-being as Human Agency to Overcome Vulnerability

A conceptual framework that defines *vulnerability* and positions this concept in relation to *resilience* as passive protection and *autonomy* as active, agentic protection (Lotz, 2016) relates to the well-being discourses presented in the previous section, but offers alternative working definitions for what to look for when assessing existing research. This framework's main strength is that it facilitates dynamic interpretations of what enables or harms young people in their interactions with digital devices and with each other on the Internet.

Overall, vulnerability is related to understandings of risk and harm; therefore, it is detrimental to the idea of well-being (Rogers et al., 2012). However, Lotz (2016, p. 46) takes as a starting point that 'vulnerability is an ontological condition of humanity'; therefore, it cannot be avoided. She then distinguishes between three types of vulnerability: inherent, situational and pathogenic.

Inherent (or intrinsic) vulnerability implies that all humans are vulnerable, more precisely through our dependency on others. In this sense, all children and other young people are vulnerable, as are adults and the elderly, although intrinsic vulnerability manifests itself in different ways

during the life course. For children and other young people, their need for care and support from parents is vital, while simultaneously, their mental development requires that the relationship with their parents must change as childhood transforms into adolescence and young adulthood (Lotz, 2016).

The second source of vulnerability that Lotz (2016) described is situational vulnerability, which is context-specific, i.e., it does not affect all human beings throughout the life course. However, when situational vulnerability occurs, it can be temporary or enduring, and depends on personal, social, economic and environmental conditions. In this study, situational vulnerability connects to individual and structural inequalities representing digital divides (Talaee & Noroozi, 2019).

The third source of vulnerability that Lotz (2016) described is pathogenic vulnerability, which arises from the compounding of existing and poorly managed vulnerabilities, including dysfunctional personal relationships characterised by disrespect, oppression and injustice. Here we find that harassment, discrimination and bullying also may relate to individual and structural inequalities (Talaee & Noroozi, 2019). However, instead of representing digital divides, these inequalities, as pathogenic vulnerabilities, are related to the clinical-psychological perspective on digital well-being (Helsper & Smahel, 2020). Therefore, pathogenic vulnerability 'undermines agency or exacerbates the sense of powerlessness engendered by vulnerability in general' (Lotz, 2016, p. 47).

Lotz (2016) positions the three sources of vulnerability against the protective personal characteristics of resilience and autonomy. Resilience commonly has been understood as the capacity to cope with and overcome adversities, challenges and setbacks through skills, abilities or achievements, but does not presume an active response from the individual. Therefore, Lotz (2016) views both vulnerability and resilience as passive states, contrary to autonomy, which she defines as '[a] suite of rational, affective, deliberative and self-interpretative skills and (competencies) that enable a person to make choices and act in line with their reflectively endorsed beliefs, values, goals, wants and self-identity' (p. 53). These internal competencies link the state of autonomy to human agency, viewed reflexively as 'individuals' ability to act upon and transform the

world in which they act' (Fonseca, 2019, p. 354). This interpretation of autonomy further requires favourable social conditions, relationships and institutions combined with access to relevant options and resources (Lotz, 2016).

Agency Involving Digital Technology Across Social Contexts

Studies on how digital technology is used and how this use relates to indicators of well-being are well-suited to Bronfenbrenner's classic model of the ecology of human development. Bronfenbrenner (1977) described the individual child as being positioned in several parallel *microsystems*, i.e., physical environments in which the child engages in well-defined roles, performing activities suited to that role, e.g., daughter, student or friend. The neighbourhood environment and societal institutions that indirectly affect the child represent what Bronfenbrenner called the *exosystem*. Outside the exosystem is the *macrosystem* of wider cultural and societal ideas, norms and beliefs, influencing the exosystem and microsystem levels of human development.

A key point in Bronfenbrenner's ecological systems theory are the social relationships that form within and between the model's various spheres. When people connect across a child's microsystems, they form what Bronfenbrenner (1977) described as *mesosystemic interaction*. In a later contribution, Bronfenbrenner (1986) wrote of mesosystemic interaction:

Although the family is the principal context in which human development takes place, it is but one of several settings in which developmental processes can and do occur. Moreover, the processes operating in different settings are not independent of each other. (...) Events at home can affect the child's progress at school, and vice versa. (p. 723)

The research interest guiding the present study derives from Bronfenbrenner's (1977, 1986) idea of mesosystemic interaction, notably in which the young individual's agency bridges two or more

microsystems. Consequently, this study examines the literature on young people's use of digital technologies across four social contexts—family, school, leisure time and a digital space for democratic participation—to determine:

- How the studies relate to well-being as viewed within the clinical-psychological and digital literacy perspectives on young people's online activity.
- How young people work to overcome inherent, situational or pathogenic vulnerabilities that they experience in one social context by connecting to another involving digital technology.

Data and Method

Grant and Booth defined *to review* (2009, p. 92) as 'to view, inspect or examine a second time or again'. This study re-examines the sample of an already-completed scoping review on studies published between 2011 and 2021 to determine what conditions contribute to negative or positive impacts on children and other young people from using digital technology in different domains of their everyday lives (Seland et al., 2022a, b).

The scoping review falls under the multi-faceted family of techniques for systematically searching for and assessing literature within a research field (Colquhoun et al., 2014; Peters et al., 2015). Munn et al. (2018) describe the scoping review as a technique for mapping available evidence, identifying knowledge gaps and clarifying definitions or concepts, as well as investigating research conduct. Therefore, the present review is conducted to produce a novel thematic synthesis from existing research evidence, from which research gaps can be identified and recommendations for future research can be made.

Identification of Keywords

In the scoping review preceding this study (Seland et al., 2022a), four search strings for investigating children and other young people's use of digital technology in the microsystems (1) family, (2) leisure, (3) school and (4) democratic participation were constructed using keywords extracted from preliminary state-of-the-art reviews (Ayllón et al., 2020; Lorenz & Kapella, 2020). In Table 1, the keywords were grouped based on established Patient, Intervention, Comparison and Outcome (PICO) criteria (Eriksen & Frandsen, 2018) to determine target group (P), types or modes of digital technology (I), indicators of individual and structural inequalities (C) and outcome (O), denoting indicators of agency to overcome multiple vulnerability modes.

Search String Applied Across Databases

The search string constructed from these keywords, still using the democratic-participation example from Table 1, is presented in Table 2. The final combination of keywords used for searches of study titles and abstracts was determined using initial trial-and-error attempts in the

Table 1 Grouping of keywords following the PICO criteria for a database search on young people's use of digital technology. Example: democratic participation

(P) Target group	Children; young people; adolescents; teenagers; students
(I) Types or modes of digital technology	ICT; digital; Internet; online; web; social media; new media
(C) Individual and structural characteristics	Age; gender; socioeconomic differences; migrant background; unemployment; divorced or single parent; disability; LGBT+; urban or rural
(O) Outcome	Citizenship: civic-, democratic- or political participation or engagement; efficacy; activism; protesting; debate; volunteer

Table 2 Search string for a database search on young people’s use of digital technology, including Boolean operators. Example: democratic participation

	Title	(citizen* or civic* or democra* or politic*) AND (ICT* or digital* or Internet* or online* or web* or (social or new) W1 media)
AND	Abstract	(child* or young* or youth* or adolesc* or teen* or student*) AND (particip* or engage* or efficacy* or active* or protest* or debate* or volun*) AND (age* or gender* or boy* or girl* or sociodem* or socioec* or migrant* or immigrant* or ethnic* or minority* or unemploy* or (high or low) W1 income or inequal* or single W1 parent or cultur* or risk* or vulnerab* or marginalise* or disab* or disadvant* or special W1 (needs or education) or LGBT* or heterosex* or homosex* or urban* or rural*)

EBSCOhost databases (please see below) to determine which order of keywords elicited the most relevant results while documenting changes made in the search strings.

The search then was completed with four parallel search strings (for the microsystems ‘family’; ‘leisure’; ‘school’ and ‘democratic participation’) in the following databases, limiting the search between 2011 and 2021:

EBSCOhost:

- Academic Search Ultimate
- Education Source
- ERIC
- SocINDEX

Web of Science Core Collection:

- Science Citation Index Expanded (SCI-EXPANDED)
- Social Sciences Citation Index (SSCI)
- Arts & Humanities Citation Index (A&HCI)
- Emerging Sources Citation (ESCI) (only 2015–present)

ProQuest:

- Applied Social Sciences Index & Abstracts (ASSIA)

Study Selection: The Four Microsystems

The search across the databases yielded a total of 6296 results, from which 2695 duplicates were removed. Two researchers screened the remaining 3601 studies' titles and abstracts using the web-based tool Rayyan (www.rayyan.ai), in which two (or more) researchers can label studies as 'include' or 'exclude' in parallel blind mode before viewing and discussing the categorisations that collaborators made. At this stage, the researchers

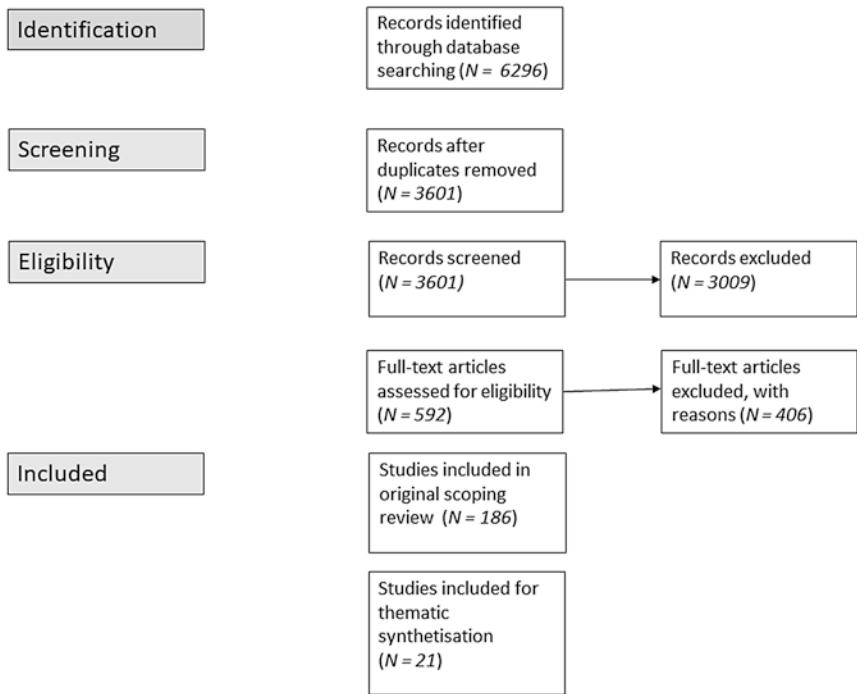


Fig. 1 Number of studies assessed for the review at different stages of the inclusion process (derived from Seland et al., 2022b)

included only studies published in English on children ages 0–18 from European countries, with OECD countries as a secondary geographical area if the studies proved particularly interesting. Grey literature was included. This process yielded 592 studies, which were assessed in full-text to chart (in four Excel spreadsheets, one for each microsystem) author(s), year of publication, journal, country, research question, population, sample size, methodology, duration, digital technology used, representations of digital divides, outcome and key findings. This charting stage reduced the sample to 186 studies across the four microsystems on which the original scoping review (Seland et al., 2022a) was conducted (Fig. 1).

Study Selection: Mesosystemic Interaction

The present study's sample comprises 21 studies between 2011 and 2021 based on a re-examination of the original sample of 186 articles in which all three of the following additional inclusion criteria are met:

- Young people's agency involving digital technology must explicitly serve to connect two or more of the four microsystems: (1) family; (2) leisure; (3) school or (4) a digital space for democratic participation.
- The young people examined must *be subject* to one or more of the following vulnerabilities: inherent, situational and/or pathogenic (Lotz, 2016).
- The young people examined must display *strategies to overcome* one or more of the following vulnerabilities: inherent, situational and/or pathogenic (Lotz, 2016).

It is evident that the present study's sample is very small compared with the sample originally identified by using the four search strings (e.g., see Table 2). Furthermore, these search strings do not include any keywords facilitating the study of 'mesosystemic interaction' other than through basic comparison, i.e., the present study cannot claim to have identified all studies thematising young people's well-being and use of digital technology across all microsystems. Also, in the present study, as

well as in the original scoping review, no additional hand search of literature lists of included studies was conducted. It is possible that alterations to these strategies for identifying and incorporating literature could have yielded a richer sample for the present study.

Analysis

In the final sample of studies resulting from the process described above, five mesosystemic interactions were identified: (1) family and leisure; (2) family and school; (3) school and leisure; (4) leisure and democratic participation; and (5) school, leisure and democratic participation. These are analysed below.

Family and Leisure Intersection

It has been established that parental mediation and family support in general may influence young people's use of digital technology (Appel et al., 2012; Symons et al., 2020). However, only one study in the present review's sample investigates children's disclosure of online activity vis-à-vis parents as concrete actions undertaken by children (Table 3).

Romera et al. (2021) analysed self-reports from a survey on 866 children ages 10–13 in Spain on their involvement in cybergossip (i.e., sharing positive, neutral or negative comments about a person who is not present), cyberaggression/cyberbullying, problematic Internet use and child disclosure vis-à-vis parents about what they experience on social

Table 3 Studies examining digital technology at the intersection of family and leisure

Intersecting microsystems	Author	Country	Perspective	Vulnerability
Family, Leisure	Romera et al. (2021)	Spain	Clinical-psychological	Inherent; pathogenic

media. Romera et al. (2021) confirm through their analysis that child disclosure protects against cyberbullying, and that this protection is mediated by the child’s eventual problematic Internet use and involvement in cybergossip.

Even though the evidence is correlational and cannot confirm an eventual causal direction between child disclosure and protection against cyberbullying, the study is interesting because it reveals an embedded aspect of inherent and/or pathogenic vulnerability from participating in cybergossip measured as children’s score on the statement ‘It makes me feel closer to my group of friends’. Engaging in cybergossip to overcome individually experienced inherent and pathogenic vulnerability may be a valid strategy for the child, even though Romera et al. (2021) found that taking part in cybergossip is related to being involved in cyberaggression because posting messages about others may normalise hurtful behaviour. Therefore, cybergossip may entail inflicting or increasing vulnerability in others.

Family and School Intersection

Digitalisation in schools has been expected to boost students’ motivation and potential for learning, thereby affecting their school achievement (Falck et al., 2018). Two studies in the present review sample report formal education added value from using digital technology for homework. Both studies address how using the Internet while doing homework may help students overcome digital divides viewed as situational

Table 4 Studies examining digital technology at the intersection of family and school

Intersecting microsystems	Authors	Country	Perspective	Vulnerability
Family, School	Daoud et al. (2021)	20% of studies from European countries	Digital literacy	Situational (SES)
	Frutos et al. (2017)	Spain	Digital literacy	Situational (minority background)

vulnerabilities, provided that the students' online activities are directed towards learning and not general or recreational use (Table 4).

Daoud et al. (2021) conducted a systematic review on 67 studies on students in primary and secondary school to assess the value of home Internet use with three education functions: formal qualifications; socialisation and individualisation, as conceptualised by Biesta (2009). Regarding formal qualifications, Daoud et al. (2021) found positive correlations between using the Internet at home and school results, but primarily with students who have better-educated parents. However, regarding socialisation, children from lower socioeconomic status (SES) households were found to use the Internet at home to communicate with peers online while feeling integrated into their school communities' social fabric and developing social and collaborative skills. As for individualisation, which includes developing individual agency and autonomy, studies that Daoud et al. (2021) reviewed indicated that children from lower socioeconomic status households benefit from researching topics on the Internet through self-directed independent learning.

Frutos et al. (2017) used questionnaires and standardised language and mathematics tests on 117 secondary school students with immigrant backgrounds in one school district in Spain. They yielded no significant results regarding students' learning based on the language they used at home, but significant differences in the academic performance of students who used digital technology while doing homework. Frutos et al. (2017) attribute these differences to the possibilities of finding information, as well as communication and interaction activities that students conducted using digital technology for learning from home.

School and Leisure Intersection

Young people may learn informally from using technology (Tuukkanen & Wilska, 2015), e.g., children can improve their command of a second language (i.e., English) from online gaming (Wernholm, 2018). Overall, the use of digital technology for social purposes correlates with measures of young people's computer and information literacy (Alkan & Meinck, 2016). Two studies in the present review address learning outcomes from

digital game play, while one study discusses the development of digital literacy across the contexts of leisure and school. Furthermore, one study investigates students’ use of social media and the consequences from this use on socialising at school (Table 5).

Bjørgen and Erstad (2015) studied 37 primary schoolchildren in Norway ages 9–13, observing and interviewing them on how their learning from digital technologies crossed the boundaries between school and leisure. They found that (a) children’s unofficial digital literacies may become visible as official literacy practices in the classroom; (b) children are introduced to new software and digital practices at school, which they then apply to creative leisure activities; and (c) new digital practices learned in school may serve to change the children’s status as experts within the family. The porous boundaries between the learning environments in school and leisure reveal that acquiring and developing digital literacy is about not only learning, but also nurturing young children’s identity and agency, thereby nuancing the traditional understanding of the relationship between adults and children regarding technology use (Bjørgen & Erstad, 2015).

Table 5 Studies examining the use of digital technology at the intersection of school and leisure

Intersecting microsystems	Authors	Country	Perspective	Vulnerability
School, Leisure	Bjørgen and Erstad (2015)	Norway	Digital literacy	Situational (age)
	Gomez-Baya et al. (2019)	Spain	Clinical-psychological	Inherent; situational (gender); pathogenic
	Stančín et al. (2020)	40% of studies from European countries	Digital literacy	Situational (disability)
	Vasalou et al. (2017)	United Kingdom	Digital literacy	Situational (learning disorder; age)

Two studies in the present review sample address education outcomes from using games (a leisure-related activity) in formal learning situations. First, Stančin et al. (2020) conducted a systematic literature review on how game-based learning (GBL) may impact education and the mastery of specific skills among students with intellectual disabilities due to a neurodevelopmental disorder that affects reasoning, problem solving, planning and abstract thinking, hindering the individual's ability to meet sociocultural standards. GBL integrates problem-based learning into a game (develop a skill, learn a language, acquire concept knowledge). The reviewed studies were from 2010–2019 and included participants ages 3–22. The results indicated that the most common subjects taught using GBL were mathematics, science and reading. The most common skills taught using GBL were logical skills, followed by motor skills, perception, cognition and visual processing. Out of the 21 total studies, 15 contained a formal test/evaluation indicating a positive impact from GBL on students' functional skills.

Second, from a literacy perspective, Vasalou et al. (2017) report from an intervention on eight children ages 11–12 with dyslexia who engaged in GBL, targeting children's word decoding, spelling and fluency. Children were allowed to take tablets home to continue playing after school. The researchers analysed game talk between participants, which focussed on children's construction of identity, successful learning or breakdowns in learning. Small breakdowns could be solved through peer instruction, whereas more serious breakdowns were met with mixed teacher responses, which muddled the children's learning results. Also, competition between children could hinder successful peer learning. Vasalou et al. (2017) conclude that social interaction shapes game play and propose that this interaction should guide research on why and how games may foster learning in school contexts.

Within the clinical-psychological perspective, Gomez-Baya et al. (2019) analysed data from a two-wave survey among 882 Spanish adolescents ages 13–16 on the relationship between online communication with peers and social ostracism at school and/or bullying (online and offline). They found that leisurely online communication, i.e., text messaging, was associated negatively with school ostracism and bullying, and associated positively with greater ease in making friends and resisting peer

pressure. Girls were found to use online communication more frequently than boys. Gomez-Baya et al. (2019) suggest that online communication enhances development of self-esteem and perceived social support through self-presentation and self-revelation, which benefit the development of personal identity and social capital. Furthermore, longitudinal data indicated that more frequent text messaging was related to greater ease in making friends and less bullying among adolescents with more pronounced initial difficulties.

Democratic Participation and Leisure Intersection

Frequent points of departure in the literature on young people's use of online spaces for democratic activity are: (a) the absence of voting rights for people below age 18 and (b) a generalised, reduced tendency among young people to be part of institutionalised democratic procedures (Stornaiuolo & Thomas, 2017). Empirically, this literature investigates a wide range of participation modes, challenging the view of young people's low democratic engagement (Boulianne et al., 2020; Xenos et al., 2014) (Table 6).

A principal point identified in the studies on digital technology use at the intersection of leisure and democratic participation concerns the relationship between online and offline democratic engagement. Overall, these activities are found to be correlated (Hirzalla & van Zoonen, 2011; Siongers et al., 2019). Using an online survey from Norway, Enjolras et al.'s (2012) results indicated that mainly adolescents and young adults (above 16) and those with lower socioeconomic status were mobilised through social media for offline demonstrations. From a longitudinal two-wave survey among two groups of young Swedes ages 16 and 22, Kim et al. (2017) found that for the 16-year-olds, initial online participation fosters later offline participation.

Fonseca (2019) reports on a survey among students ages 15–21 in Portugal that the more students engaged informally in civic activities online (posting or sharing civically relevant material), the more they took part in formal civic activities online and offline. Siongers et al. (2019), using a survey on Flemish youths ages 14–30, conclude that Internet use

Table 6 Studies examining the use of digital technology at the intersection of leisure and democratic participation

Intersecting microsystems	Authors	Country	Perspective	Vulnerability
Leisure, Democratic participation	Burton (2019)	Brazil, Canada, England, India, Poland, Scotland, United States	Digital literacy	Situational (age; sexual identity)
	Enjolras et al. (2012)	Norway	Digital literacy	Situational (age; socioeconomic status)
	Fonseca (2019)	Portugal	Digital literacy	Situational (age)
	Hirzalla and van Zoonen (2011)	The Netherlands	Digital literacy	Situational (age)
	Jugert et al. (2013)	Germany	Digital literacy	Situational (age; socioeconomic status; minority background)
	Keller (2019)	Canada, United Kingdom, United States	Digital literacy; clinical-psychological	Inherent; situational (age; gender); pathogenic
	Kim et al. (2017)	Sweden	Digital literacy	Situational (age)
	Mascheroni (2013)	Italy	Digital literacy	Situational (age; socioeconomic status)
	Mascheroni (2017)	Italy, United Kingdom	Digital literacy	Situational (age; socioeconomic status)
	Siongers et al. (2019)	Flanders (Belgium)	Digital literacy	Situational (age)
	Spaiser (2012)	Germany	Digital literacy; clinical-psychological	Situational (age; socioeconomic status; minority background)
	Sveningsson (2014)	Sweden	Digital literacy; clinical-psychological	Inherent; pathogenic
	Vázquez-Barrio et al. (2020)	Spain	Digital literacy; clinical-psychological	Inherent; situational (gender); pathogenic

for entertainment and pleasure is related positively to alternative political participation, i.e., different forms of activism, but does not affect the respondents' intention to vote. These contributions imply that no unified type of online activity exists that will create equally unified offline political engagement.

An interview study by Mascheroni (2017) may serve as clarification. In her sample of 40 British and Italian adolescents ages 14–15, Mascheroni (2017) identifies five different modes of citizenship based on the teenagers' (1) citizenship orientation (understanding, knowledge, self-positioning), (2) citizenship practices and (3) digital engagement. Mascheroni (2017) stated that each mode of citizenship 'is produced by different kinds of resources and experiences, [which] in turn shape how young people participate online and offline' (p. 4630). This implies that young people, being a diversified group, will participate democratically online and offline in equally diverse ways.

Furthermore, evaluations of young people's political activity on the Internet include a culturalist/maximalist approach on youth citizenship being expressed through popular culture and 'hanging out' practices (Stornaiuolo & Thomas, 2017). Based on a smaller interview sample (eight Italian teenagers), Mascheroni (2013) argues that citizenship cannot be isolated from what she labels potentially pre-political, everyday activities, e.g., consumption, popular culture and entertainment. Similarly, Burton (2019), after conducting ethnographic fieldwork and interviewing bloggers (ages 13–21) on the social network site Tumblr, argues that the production and sharing of memes and creative fandom activity help form political identities through cultural resistance, shaping online communities with overtly political discussions, e.g., for queer youth.

However, online political engagement does not necessarily entail support for just and moral causes, and intolerance has been found to be a strong motivating factor for young people engaging politically online (Bosi et al., 2021). Obviously, this intolerance can deter moderate young people from sharing political content online, as Sveningsson (2014) discovered in an interview study among Swedish 17- and 18-year-olds. Vázquez-Barrio et al. (2020), in examining online participation using a

sample of 20 adolescents in Madrid, found that this problem mainly affects young girls. In these two studies, young people's awareness and experiences as seen from a clinical-psychological perspective on well-being complement their digital literacy, i.e., they choose to stay safe by not engaging politically online. However, Keller (2019) investigates young girls in London engaging with feminist issues online, despite being harassed. These girls (ages 14–15) share personal experiences online with a keen understanding and strategic use of privacy settings and mobilise their social network to confront misogyny through feminist critiques and by raising awareness (Keller, 2019). Contrary to Sveningsson (2014) and Vázquez-Barrio et al.'s (2020) findings, the girls in Keller's study harness their sophisticated digital literacy to reduce online harassment's impact, thereby continuing their political engagement.

Finally, two studies address online democratic participation by young people with immigrant and/or religious minority backgrounds, contending that a combination of young age, a minority background and low socioeconomic status elicits political passivity. After surveying native Germans, Turkish migrants and the ethnic German diaspora (resettled immigrants from the former Soviet Union) ages 16–26, Jugert et al. (2013) find that Turkish migrant youths participated more often in both online and offline civic activities than did native German youths and those from the German diaspora. In another survey-based study from Germany, Spaier (2012) investigates the Internet-based political participation of native German youths and immigrant youths with Turkish and Arab ethnicity who share minority religious backgrounds, finding that youths with immigrant backgrounds tend to be particularly active both online and offline despite socioeconomic disadvantages. Spaier (2012) attributes this mobilisation to grievances caused by religious discrimination and views this online political engagement as a tool for empowerment in building identity and creating social capital for minority youths.

School, Leisure and Democratic Participation Intersection

Only one study has been identified as focussing on the intersection of school, leisure and democratic participation. One reason for this may be the fundamental change that digital technology represents to the traditional education system hierarchy, not only presenting the student with potential educational content, but also simultaneously making the learner a producer of such content with connections to real-life, possibly controversial issues (Andersson, 2016). Frequently, 'digital citizenship' taught in school refers to online safety and etiquette responsibilities, not digital technology's potentially empowering aspects (Mitchell, 2016) (Table 7).

Clark et al. (2015) led an action research project amongst students ages 16–19 and their teachers in a sixth form college in the United Kingdom, in which the students initially were not allowed to use their personal mobile phones during school hours. Clark et al. (2015) identified what they term 'proto-agency' first in some students' ability to subvert school regulations through the use of personal digital technologies. After a Twitter event in which all students were allowed to use their mobile phones on the school's network to tweet about a predefined subject, with tweets displayed on communal screens, the school initiated a Twitter account to facilitate dialogue between staff and students. Again, Clark et al. (2015) label the ensuing activity 'proto-agency', as the students used the new platform to request resources, ask questions about a news report or spark their own debates, but only on curriculum-derived issues. At the end of the project, staff had gained confidence to enter into dialogues with students using social media and encouraged the use of personal mobile technologies for learning. According to Clark et al. (2015), the 'proto-agency' identified among students in this process 'did

Table 7 Studies examining digital technology at the intersection of school, leisure and democratic participation

Intersecting microsystems	Authors	Country	Perspective	Vulnerability
School, Leisure, Democratic participation	Clark et al. (2015)	United Kingdom	Digital literacy	Situational (age)

not yet achieve explicitly civic dimensions, [but] (there were) signs that new forms of student engagement were beginning to appear' (p. 933).

Discussion

This review has identified literature that analyses young people's well-being in relation to the intersection of digital technology across four different social contexts of their everyday lives, i.e., their use of digital technology within the family, for leisure, in school and in digital spaces as democratic participation. The intersections thematised in the literature are:

- Family/leisure
- Family/school
- School/leisure
- Leisure/democratic participation
- School/leisure/democratic participation

With reference to Bronfenbrenner (1977, 1986), the identified literature presents *mesosystemic interactions* between the four contexts or microsystems, in which the young individual has a clearly defined role as son, daughter, student, friend, etc. When young people's agency bridges two or more microsystems, they affect the processes operating in different microsystems, their predefined roles change and new possibilities for their own development as humans emerge. This role reversal is particularly evident in one of the studies that examined the leisure-school intersection, in which young children's digital literacy acquired in both settings becomes a fluid resource, facilitating new creative activities in their free time and shifting roles as experts/learners in the classroom (Bjørgen & Erstad, 2015). Similar mechanisms are visible in the action research project that Clark et al. (2015) reported, in which teenagers integrated their agency using social media in a leisure and/or civic participation context into the school's formal setting, thereby affecting their learning environment and relationship with the staff.

Helsper and Smahel (2020) identified the discourse on young people's use of digital technology and their well-being as relying on two different perspectives on excessive Internet use, commonly operationalised as time spent online. Whereas the clinical-psychological perspective generalises from online engagement and onto young people's psychological and emotional symptoms, the digital literacy perspective generally views online engagement as beneficial to young people's learning in general and to digital competence in particular.

One main finding from this review is that most of the identified studies (15 out of 21) can be positioned within the digital literacy perspective. Examples include adolescents' use of digital technology for homework, which increases their formal learning results (Daoud et al., 2021; Frutos et al., 2017), and children and adolescents' interest in gaming, which may be used for formal learning in schools (Stančin et al., 2020; Vasalou et al., 2017). Also, at the intersection of leisure and democratic participation, young people's understanding of digital technology for online participation means that they can voice their opinions (Enjolras et al., 2012; Fonseca, 2019; Hirzalla & van Zoonen, 2011; Siongers et al., 2019). In all these studies, it is possible to envision a linear relationship between (more) use of digital technology in the home and for leisure and (more) formal learning and democratic participation. However, it should be noted that none of these studies alleges linear causality, but rather merely indicates correlational relationships between variables. The exception is Kim et al. (2017), who use longitudinal data to examine how adolescents' online democratic participation becomes offline democratic participation as they mature.

Two of the reviewed studies are positioned solely within the clinical-psychological perspective on digital technology and well-being, as they both relate to loneliness and bullying. In the first case, pre-teens choose to disclose their activity on the Internet to their parents, which correlates with less victimisation from online bullying, perhaps because they also refrain from spreading information about others online (Romera et al., 2021). In the second study, Gomez-Baya et al. (2019) find that teenagers who use digital technology to connect with peers outside of school hours feel socially included and tend to avoid (offline) bullying during school

hours. Using a two-wave study, Gomez-Baya et al. (2019) found a linear relationship between online socialising and social inclusion at school.

Adding to the dichotomous discourse on well-being between digital literacy benefits and clinical-psychological risk (Helsper & Smahel, 2020), this review identified four studies that span the two perspectives. These studies concern the intersection of leisure and democratic participation, in which the clinical-psychological perspective implies risk of online harassment and discrimination. What makes these studies interesting is that the digital literacy perspective may explain the contrastive outcomes partly. Thus, young people argue from a digital literacy perspective when they avoid expressing their opinions online, keeping their leisure-related digital activity light, social and uncontroversial to stay out of trouble (Sveningsson, 2014; Vázquez-Barrio et al., 2020). However, the young girls in Keller's (2019) study use their advanced digital skills to navigate and harness social network platforms to promote feminist issues while avoiding or confronting harassers.

Vázquez-Barrio et al. (2020) and Keller's (2019) results are not clear concerning their informants' previous experiences with online harassment, but a closer investigation of these experiences may explain their choice of strategies. This observation borrows from Helsper and Smahel (2020), suggesting that whether well-being is related to digital engagement may depend on the user's offline psychological characteristics. The final study spanning the digital literacy and clinical-psychological perspective suggests the order of the variables more clearly: Grievances caused by discrimination strengthen minority youths' propensity to engage politically online (Spaiser, 2012).

Although informal or formal learning, having friends, avoiding bullying and harassment and giving voice to one's opinion may further well-being, this review goes further in determining how young people's agency involving digital technology serves to overcome different sources of vulnerability. Overall, digital technology's connective aspects represent a potential for users to overcome inherent vulnerability, in that all humans depend on social support (Lotz, 2016). More generally, several of the studies reviewed within the digital literacy perspective display how young people benefit from using digital technology despite situational vulnerabilities such as gender, low socioeconomic status, disability, learning

disorders and ethnic minority background. However, as these situational vulnerabilities are also well-known second-order digital divides, the reviewed digital literacy studies do not add anything new to our understanding of these divides as sources of vulnerability. Notably, Fonseca (2019), Hirzalla and van Zoonen (2011), Siongers et al. (2019) and Clark et al. (2015) address age only as a situational vulnerability, which frankly does not provide much nuance to the conclusions seen at the vulnerability-autonomy nexus (Lotz, 2016). It is different with Bjørgen and Erstad (2015), who studied children as young as age 8. In this case, the children's agency clearly works to diminish the obstacle of their young age.

As introduced earlier, studies combining the clinical-psychological and digital literacy perspectives facilitate a deeper understanding of how young people's agency may be used to overcome both inherent and pathogenic sources of vulnerability. However, the strategies that a vulnerable individual applies still may be simple: Pre-teens or older children may choose to confide in parents to get help and support (Romera et al., 2021), or adolescents simply may maintain social relationships during their free time, making socialising at school easier (Gomez-Baya et al., 2019). These actions secure social support and protect against bullying. The complexity increases in previously described findings by Vázquez-Barrio et al. (2020), Keller (2019) and Spaiser (2012), in which both inherent and pathogenic vulnerabilities are confounded by the situational vulnerabilities that the young people embody. However, these individuals negotiate and sometimes overcome gender, socioeconomic status and religious/ethnic minority background or combinations thereof.

Conclusions

This review adds to the existing literature on the relationships between young people's use of digital technology and their well-being by investigating how perceived excessive use of the Internet in one social setting may increase well-being in another social setting. Thus, the study builds on Mikuska et al. (2020), suggesting that digital engagement can be a

coping strategy for young people experiencing problems. Following this line of reasoning, it is possible to imagine a teenage girl looking tired after hours spent in her room engaging in schoolwork on her laptop, socialising with friends online and signing a petition for animal welfare on her mobile phone. Her parents may sense her mood and worry about her apparent obsession with screen time. Rather than blaming screens, perhaps they should ask this girl about school, how she feels about her friends or her concerns about bigger societal issues.

As for future research, attention could be directed more specifically towards the various sources of vulnerability that young people's agency either serves to increase or combat when they engage with digital technology. Particularly with younger children, there seems to be a lack of literature addressing not only what they do when using digital technology to increase their own well-being, but also why they do it and to what ends.

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