The Impact of Technology on the Development of Self-Concepts in Children, including Possible Selves and Feared Selves: A Narrative Review on Qualitative Studies

Katy Tempel

Department of Psychology, Simon Fraser University

Correspondence: katytempel@icloud.com

Abstract

The impact of technology on the brain has been researched extensively in a myriad of psychological domains. The development of self-concepts in childhood is influenced by technology, such as phones, computers, and social media. Self-concepts, meaning self-perceptions in various life contexts, include possible selves (future perceptions of the self), and feared selves (future perceptions of the self that are undesirable). In America, children as young as 8 years old are using social media, with a 17% increase in social media usage for 8–12-year-olds from 4.75 hours to 5.5 hours in 2020-2022, higher than the previous four years. Considering these statistics, it is imperative to reflect on the effect of this time spent using technology on how children think about themselves. Lastly, interventions for strong self-concept and possible self-development for children will be explored. Future directions could expand on the impact of technology on children's self-concepts based on different cultures and races, and types of technology interaction, including consuming, creating, playing and writing. As youth become increasingly enraptured by new technological advances, such as artificial intelligence, their benefits and effects constantly shape their attitudes and behaviours, which will their present and future self.

Keywords: *child development, social cognition, social media.*

Introduction

Defining the Self-Concept

According to Cordeiro and colleagues (2021), self-concepts are related to how individuals perceive their daily lives, including negative and positive moments. They are prone to changing over time, based on an individual's experiences, and the attention they spend remembering these experiences. They can be elevated, more positive, or decreased, more negative. Four life components where an individual evaluates themselves encompass the self-concept: personal, familial, social, and academic (Cordeiro et al., 2021).

While personal self-concept is simply a general self-perception (Cordeiro et al., 2021),

familial self-concept refers to a self-perception constructed by familial roles, environments, and relationships (Cordeiro et al., 2021). Family seems to be the ultimate genesis of any self-concept, as family members have the primary influence on a child's self-esteem and evaluation (Resett et al., 2016). After the initial bond between the child and the parent is formed, it will serve as a foundational structure for relationships outside of the family, impacting how a child perceives familial bonds for the rest of their life (Resett et al., 2016).

Social self-concept is defined as a self-perception of social interactive abilities, which is impacted by interpersonal relationships (American Psychological Association, 2023). This can either represent a self-perception of social status or a place in a social hierarchy, as well as social skills (American Psychological Association, 2023). For example, a self-perception of high status in a professional field, like believing a certain executive position is prestigious, can lead to a higher self-concept. To elaborate, membership in meaningful communities, such as religious groups or sports teams, can result in higher mental health (Michalski et al., 2020) and self-esteem (Krause, 2019), contributing to a more positive self-concept. Additionally, academic self-concept is a self-perception of academic abilities (Shavelson et al., 1976), which can include performance on tests, homework or cumulative grade average. Future self-evaluations can also occur, creating possible selves for each type of self-concept (Cordeiro et al., 2021).

In addition to perception and memory influencing the self-concept, physical context impacts how individuals view themselves (Jones, 2005; Prince, 2013; Reay & Lucey, 2000). For example, the idea of "place identity" describes how special or everyday places in people's lives can contribute to them developing their sense of self (Prince, 2013). Even geographical research has now begun to consider how various regions, whether "experienced, remembered, [or] imagined" (Prince, 2013, p. 2), can impact the developing self-concept of a youth (Jones, 2005, as cited in Prince, 2013; Reay & Lucey, 2000).

Furthermore, an experiment by Leyshon and Bull (2011) has demonstrated how youth from rural areas have developed an understanding of themselves through interactions with everyday environments. The sense of self may be entwined with the mind's remembrance and emotional connections with physical environments, though only with significant places. Specifically, the self-concept is created through the connection of the emotional, social, and narrative experiences within an individual's physical environment (Leyshon & Bull, 2011).

Defining the Possible Self and the Feared Self

A possible self is a self that could be realized in the future, according to how an individual perceives their current environment (Prince, 2013). It is the connection between an individual's current self-concept and their thoughts, and beliefs, positive and negative, about their future self (Prince, 2013; Stoddard et al., 2016). This would also include a feared self: a negative form of a possible self that represents the traits an individual would want to avoid in the future (Aardema & Wong, 2019). Feared traits include being bad, immoral, ugly, poor, violent, guilty, shameful, or corrupted. It is important to note that these traits only relate to the feared self if they are traits the individual is afraid to be socially perceived as having. These traits will not represent undesirable traits for a feared self if the individual currently has them or is nonchalant about developing them. Moreover, these traits could rise in response to social or cultural norms (Aardema & Wong, 2019). In addition to the components of a feared self, Aardema and Wong (2019) explain the notion of fearing the representation of a feared self or being ashamed that it exists. This uneasy state can describe someone being afraid of a feared self that can potentially ruin their current self, and others' opinions of that prospect (Aardema & Wong, 2019).

Additionally, possible selves are entwined with "naïve theory" (Higgins, 1998; Schwarz & Bless, 1992; Schwarz & Clore, 2007). This theory describes how among the possible selves that an individual imagines, ones that are more difficult to imagine are less probable to be realized (Higgins, 1998; Schwarz & Bless, 1992; Schwarz & Clore, 2007). To elaborate, the difficulty experienced when imagining a possible self can illuminate whether it is "worth pursuing." If it aligns more with an individual's

'true' self, it can be easier to pursue, as the individual can easily imagine that prospect for themselves (Oyserman et al., 2006). Possible selves that are more aligned with present goals of the individual would motivate a certain course of action and feared selves exemplify circumstances that should be avoided (Stoddard et al., 2016). Past research indicates that situations an individual chooses to pursue depend on their positive or negative visualization of themself in the present, as well as the future (Chick & Meleis, 1986).

Development of Self-Concepts, Possible Selves, and Feared Selves in Childhood and Adolescence

Gabel and colleagues (2025) examine how self-concepts differ in their development between the sexes by the responses of 6–15-year-old boys and girls to adjectives on the 'Self-Referent Encoding Task.' The findings suggest that both sexes perceive themselves differently, according to age and socialization differences. This could also apply to possible selves, as both sexes would imagine themselves differently in the future based on age and socialization. Overall, when given 12 positive and 11 negative adjectives, the young participants showed no difference in chosen words, implying that both boys and girls had similar positive and negative ideas about themselves throughout their childhood and adolescence (Gabel et al., 2025). These findings would suggest that the development of self-concepts rarely fluctuates based on gender, even with the consideration of age and socialization differences.

Furthermore, a study conducted by Cordeiro and colleagues (2021) had children 5–11 years old complete the 'Piers-Harris Self-Concept Scale for Children' (Piers & Piers, 1969). The results demonstrated how girls had marginally elevated self-concepts compared to boys. They also found that self-concept usually decreases with age for both sexes (Cordeiro et al., 2021), potentially occurring because of the numerous transitions that children experience as they grow.

In addition to sex differences, transitions can affect self-concept and possible self-development (Gabel et al., 2025; Stoddard et al., 2016). From the ages 9–12, a child's self-concept becomes increasingly negative, and from the ages 12–15, it decreases dramatically, indicating that self-concepts become particularly negative throughout early adolescence (Gabel et al., 2025). Stoddard and colleagues (2016) explain potential reasons for this occurrence; the effect of transitions throughout development leads children to adapt their self-concept to the environment. As a child moves from middle to high school, their self-concept changes, resulting in their view of the future changing. This crucial, challenging period of transition involves children being bombarded with new stimuli that influence their self-perception, including people, places, ideas, and experiences. For example, even the atmosphere of the new classroom when moving grade levels can elicit changes in the student's behaviour.

This seismic shift influences academic structure for the student, as they need to acclimate to new students, demands and contexts (Stoddard et al., 2016). The classroom atmosphere is the main place where learning occurs; therefore, it has a substantial influence on the student's self-concept, including their perception of their academic abilities. If a student is presented with positive stimuli and welcoming behaviour from teachers when walking into class, their self-concept can be altered positively, and they can feel better about starting a new chapter. This can be translated to them displaying more outgoing behaviour, like initiating conversation with new peers. However, if they are not welcomed, they can feel worse about themselves and their motivation for the school year ahead (Ryan & Patrick, 2001). They can feel discouraged about becoming involved at school, and shy away from joining clubs or participating in class.

Furthermore, it is crucial understand that adolescents are increasingly self-conscious and insecure as they are transitioning to adulthood. These feelings occur because of "age-dependent sensitivity of brain systems critical to socioaffective processes" (Somerville et al., 2013, p. 1). Fundamentally, the brain reacts more intensely to situations involving strong feelings, like going to a new school for the first time, and new socialisation opportunities, such as talking to different cliques in high school. This can alter their overall self-perception,

making it negative even if they are welcomed, as they might not feel like they are (Somerville et al., 2013). After their self-concept becomes negatively or positively affected by this new shift in the environment, they can also imagine themselves more or less confident in the future (Stoddard et al., 2016). It is evident that expected environmental changes, such as grade level changes, can affect a student's self-concept. However, ever-changing technology in this generation has now generated a myriad of new reactions that could exacerbate or mitigate these changes in youth's lives. Whether the impact of technology is positive or negative, it will unequivocally have a powerful effect.

Conversely, according to Prince (2013), young individuals are prone to developing one of two types of self-concepts, expansive or blunted, which both represent a different outlook on life. An expansive self-concept refers to when an individual has a clear or even excited perspective of future experiences, involving visualizations of places relating to that excitement. For youth, these places can be the buildings where recreational programs that promote creative self-expression and self-exploration are run. It is important to note that the experiences youth have at these places can influence their thoughts about their future selves. Their thoughts are founded on current experiences that positively or negatively contribute to their sense of self, leading them to feel either hopeless or hopeful about the future (Prince, 2013).

Secondly, a blunted self-concept refers to when a young individual cannot ascertain the future, therefore living only in the present (Prince, 2013). This can occur when youth are reminded that the future cannot be predicted and have limited visualizations of future possibilities. For example, if a youth is walking to school, and is faced with indications that their school is unsafe (i.e., being welcomed by unfriendly faces or having to walk through metal detectors before entering), they are likely to connect those experiences with their self-concept. Places that evoke imagery of a time when things are uncertain lead to the idea becoming readily available in the mind (Prince, 2013).

Technology and Self-Concepts, Possible Selves, and Feared Selves in Childhood and Adolescence

Children's immersion in technology is ubiquitous, constantly influencing how they connect with others, as well as express themselves (Norman et al. 2015). Of American teens 13–17 years old, 97% of girls and 93% of boys had access to a smartphone at home (Pew Research Center, 2024a). Moreover, from this sample, 92% of teens aged 13–14 and 97% of teens aged 15–17 had access to smartphones at home (Pew Research Center, 2024a). These results could explain why 47% of girls and 45% of boys said they use the internet "almost constantly" (Pew Research Center, 2024a). In general, these findings demonstrate how children have become more independent because of technology, and its impact on their daily lives as they become more familiar with it (Neumann et al., 2022). One study explored the effects of technology use on 500 youth, who averaged 12 years old (Jackson et al., 2010). They found that using different types of technology had different effects. Specifically, video games had negative effects, and internet use had a positive influence on self-concept. However, for each gender, it depended on the type of technology, as each type of use affected their self-concepts differently.

For example, a particular finding indicated that boys play more video games than girls. This was correlated with them having a more negative behavioural self-concept and lower self-esteem (Jackson et al., 2010). However, adolescent boys can also experience increased negative effects on their social self-concepts if they become addicted to playing (Haidt, 2024), blurring the line between real-world friendships and online ones. In addition to social self-concept, males' sexual and behavioural self-concept can be affected by excessive exposure to pornography. This can impact their real-life romantic relationships, causing them to find their partners less attractive after watching (Haidt, 2024). Nevertheless, adolescent males do not have a strong negative perception of technology (Cai et al., 2017).

For girls, a negative attitude toward technology was more prevalent than for boys (Cai et al., 2017). A reason could be is their personal self-concepts are more negatively

affected by social media usage (Twenge et al., 2022), as they generally spend more time on it than boys do (Pew Research Center, 2024b). Particularly, the social media apps associated with posting images or videos of yourself or your face, like Instagram, Snapchat and TikTok (Pew Research Center, 2024b). An experiment found that when adolescent girls were exposed to original or more attractive Instagram images, they felt lower body image after viewing the modified images (Kleemans et al., 2016).

Young girls' social self-concepts have also been influenced by the way social media apps are organized. Their perceptions of how relationships work have been altered, especially related to attachment (Levine & Stekel, 2016). Social media facilitates how girls communicate with and respond to each other. The most common behaviours to keep in touch would be following friends' accounts, making sure to always be reachable, and exploring new content and connections. Moreover, a study found evidence that technology, especially social media apps, is not always used negatively or corruptively by girls. It can be used to create genuine relationships or retain close friendships for a long time.

However, with the ability to make attachments easily, there is a possibility of unwanted connections, as some of the participants did remark how they experienced cyberbullying (Levine & Stekel, 2016). In addition to social self-concepts, the familial concept in girls was also affected by social media usage. Some participants remarked how they would consult their parents for help to navigate social challenges online, strengthening their parental bond (Levine & Stekel, 2016).

In general, social media has monopolized the attention of most of today's youth. In 2023, 59% of teens aged 13–17 years used Instagram, while 63% of them used TikTok (Pew Research Center, 2024b). While an adolescent's use of a certain social media app is beneficial to analyze, it is also important to examine how many times they are on them. From this sample, 71% used YouTube daily, and 58% used TikTok daily, the most frequently used social media apps. However, 22% of girls and 12% of boys reported using TikTok "almost constantly," while 15% of girls and 18% of boys reported using YouTube "almost constantly" (Pew Research Center, 2024b). Considering the excessive amount of time spent on these apps, it is necessary to review the actual content they are seeing.

Within 2.6 minutes of being on TikTok, children are exposed to eating disorder or self-harm content (Perry, 2025b). The development of their possible selves (Prince, 2013) could become distorted based on their perception of normal beauty ideals. Additionally, their feared selves (Aardema & Wong, 2019) could become representations of perfectly normal body types, leading them to consider alternative paths to achieving their desired body type. According to a survey sent out by the YMCA for BeReal, a national campaign promoting body confidence in youth, 36% of teens stated that they would do "whatever it took to look good," and 10% of them had thought about doing cosmetic surgery (YMCA, 2017, p. 5). This demonstrates that the worldview of social media is unrealistic and can ultimately corrupt a child's sense of self-understanding (Perry, 2025a).

In addition to the distortion of beauty ideals, increased internet use by children is associated with significant decreases in language skills and attention (Ricci et al., 2023), as well as memory (Dong & Potenza, 2015). Children are then at risk for developing a decreased or blunted self-concept (Prince, 2013), as well as inadequate possible selves (Aardema & Wong, 2019). Low-achieving students often have low self-concepts and consequently have a higher probability of developing negative possible selves (Hannafin, 2017).

One online activity youths can be impacted by is the Blue Whale Challenge, which targets youth to complete harmful tasks, both physical and psychological (Mukhra et al., 2017). Throughout the tasks, users become increasingly disconnected from reality; the tasks become increasingly associated with suicide (Mukhra et al., 2017). A suicidal mindset contributes to youth having less faith in their future, leading them to not visualize any possible selves (Prince, 2013) or being less inclined to. Their social self-concept also becomes increasingly negative or non-existent as their entire world exists online, isolating them, leaving a smaller probability to develop real-world connections (Jackson, 2008). The last challenge prompts participants to take their own

life (Mukhra et al., 2017). It is evident that the existence of this despicable phenomenon poses a threat to children everywhere.

Aside from the negative effects of technology use, there are also several benefits (Cordeiro et al., 2021; Perry, 2025c; Prince, 2013; Seymour et al., 1987). Academic self-concept is increased after playing video games, as it augments levels of working memory and response inhibition (Kovess-Masfety et al., 2016; Sampalo et al., 2023). Playing video games can increase socialization and social skills, though only if children play with their friends (Perry, 2025c). Moreover, simply spending time online with friends has been found to strengthen a child's social connections (Ricci et al., 2023), contributing to higher positive self-concepts (Cordeiro et al., 2021).

Other positive effects of technology can be increasing social and familial self-concept. It can contribute to stronger connectivity with significant people in an individual's life, such as family members or close friends (Conway, 2025). Whether communicating with a single family member or many friends in a chat, cohesive networks facilitate youth getting emotional and psychological support, as well as simple socialization (Conway, 2025). Additionally, social self-concept can be increasingly developed by youth strengthening and expanding their social circles online. Technology can serve to strengthen current social ties (Jackson, 2008). According to an experiment by Jackson and colleagues (2010), children who were 12 years old who used cell phones for longer periods had more positive social self-concept than those who used them for shorter periods. Moreover, for youth struggling with their social skills, there are many opportunities to strengthen those skills. They can become more comfortable by practicing conversing online before trying in person (Weir, 2023).

Another benefit of technology use for children's self-concepts includes motivation (Seymour et al., 1987). Fifth and sixth-grade students who were given the option of doing their work on a computer, compared to on paper, were more motivated to complete the task. Their feelings contribute to their perspective of their academic ability, which affects their academic self-concept (Seymour et al., 1987) and academic possible selves. Additionally, resources online that can help youth with coding or building websites and apps can enhance creativity and productivity (UBC Extended Learning, 2024). Participants aged 16–24 in an experimental coding program called 'go_girl code + create' felt greater academic self-concepts because they were able to create and interact with technology instead of passively consuming information online (Denton-Calabrese et al., 2021).

Furthermore, their personal self-concept can be elevated by using self-growth and learning resources online, which can contribute to higher confidence and self-esteem (Conway, 2025). Mental health resources, including counselling and emotional support services like 7 Cups, Kids Help Phone, and OneStopTalk, can be accessed online through the quick help of a Google search. Kids Help Phone is an electronic confidential mental health phone service that helps youth with any issue, while 7 Cups and One Stop Talk are free therapy counselling services, the latter being specifically for youth aged under 18 years old (7 Cups, n.d.; Kids Help Phone, 2025; One Stop Talk, 2023). If a youth is struggling with poor mental health, they can benefit from therapy (Centers for Disease Control and Prevention, 2024), as well as emotional support provided by talk or text.

While self-growth and mental health materials primarily benefit the personal self-concept, it is correlated with academic self-concept, which affects a youth's perception of their academic skills (Conway, 2025). If their mental health is poor, they could be prone to feeling worse about underperforming, like getting a lower grade on a test.

Potential Interventions

Potential interventions for increasing self-concepts and possible selves could be directed toward improving aspects that contribute to their degree of positivity like happiness and motivation (Stoddard et al., 2016). For this to work, there needs to be congruence between understanding the individual's context and their self-perception, otherwise the intervention will not be effective (Stoddard et al., 2016). Several factors can be considered when determining how to elevate self-concepts in children while

their technology use increases (Gentile et al., 2012; Moyer, 2022; Thariq, 2018).

Primarily, emotional or physical support from the caregiver strongly affects whether the self-concept becomes elevated or reduced throughout physical and psychological development (Thariq, 2018; see also Cordeiro et al., 2021; Gabel et al., 2025; Prince, 2013). This support can be given in the form of statements that parents say to their children regarding mutual respect and care for family relationships (Thariq, 2018). If there is strong familial support, the child's self-concept will most likely be high. Moreover, their possible selves will most likely reflect their current state, leading them to think more positively about the future (Prince, 2013).

While screen time limits can be effective (Ponti et al., 2017), it is imperative to understand that children will be captivated by screens indefinitely and that children will most likely continue to use them even more in the future, based on significant increases in usage in the last few years (Moyers, 2022). In addition to strong familial relationships, parental monitoring of online content has been shown to reduce children's exposure to violent media (Gentile et al., 2012). It is paramount to have children be cognizant of the content they are watching and become skilled at discerning between harmful and helpful content.

Conclusion

To conclude, technology usage has shown negative and positive effects on self-concepts, possible selves, and feared selves in childhood. Negative effects are distorted perceptions of reality, including self-perception (Mukhra et al., 2017; Perry, 2025a), exposure to harmful content (Perry, 2025b), decrease in language skills and attention (Ricci et al., 2023), lower self-concepts (Prince, 2013), inadequate possible selves (Aardema & Wong, 2019), and higher probability of feared selves (Aardema & Wong, 2019). Conversely, positive effects are increased communication skills (Perry, 2025c), higher self-esteem and motivation (Seymour et al., 1987), strengthened social connections (Ricci et al., 2023), higher positive self-concepts (Cordeiro et al., 2021; Prince, 2013), and a higher hope about possible selves (Prince, 2013).

Future research should explore the impact of technology use on self-concepts of adolescents in distinct cultures and races. Self-concepts, particularly familial, and social are represented differently in each culture, so the influence of technology could be different. Cultural attitudes and behaviours toward technology vary as well, so adolescents may have a different opinion based on their cultural identity.

Moreover, the study of how self-concepts and possible selves develop based on types of technology interaction would be beneficial, including consuming, creating, developing, writing, and playing. This would further illuminate which technological interactions lead to more negative or positive self-concepts, providing insight into how boys and girls influence their self-concepts based on their preferred uses of technology.

Any findings could help both genders develop each type of self-concept, as well as their possible selves that are relevant to who they are as individuals. It is imperative to learn more about what impacts adolescent self-concept development, as these concepts will ultimately shape who they are in adulthood.

References

7 Cups. (n.d.). 7 Cups. https://www.7cups.com

Aardema, F., & Wong, S. F. (2019). Feared possible selves in cognitive-behavioral theory: An analysis of its historical and empirical context, and introduction of a working model. *Journal of Obsessive-Compulsive and Related Disorders, 24*. https://doi.org/10.1016/j.jocrd.2019.100479

American Psychological Association. (2023, November 15). *Social self. In APA Dictionary of Psychology.* Retrieved from https://dictionary.apa.org/social-self

Cai, Z., Fan, X., & Du, J. (2017). Gender and attitudes toward technology use: A meta-analysis. *Computers & Education, 105*(1), 1–13. https://doi.org/10.1016/j.compedu.2016.11.003

CDC. (2024, September 28). *Treating children's mental health with therapy.* CDC: Children's Mental Health. https://www.cdc.gov/children-mental-health/treatment/index.html

Chick, N., & Meleis, A. I. (1986). Transitions: A nursing concern. *School of Nursing Departmental Papers,* 237–257. University of Pennsylvania.

Conway, B. (2025, March 1). *Technology & self-confidence: Digital influence on mental health.* Greater Boston Behavioral Health. https://greaterbostonbehavioralhealth.com/rehab-blog/technology-and-self-confidence-mental-health/

Cordeiro, T., Botelho, J., & Mendonça, C. (2021). Relationship between the self-concept of children and their ability to recognize emotions in others. *Frontiers in Psychology, 12*, Article 672919. https://doi.org/10.3389/fpsyg.2021.672919

Denton-Calabrese, T., Mustain, P., Geniets, A., Hakimi, L., & Winters, N. (2021). Empowerment beyond skills: Computing and the enhancement of self-concept in the go_girl code+create program. *Computers & Education, 175,* 104321. https://doi.org/10.1016/j.compedu.2021.104321

Donelle, L., Facca, D., Burke, S., Hiebert, B., Bender, E., & Ling, S. (2021). Exploring Canadian children's social media use, digital literacy, and quality of life: Pilot cross-sectional survey study. *JMIR Formative Research, 5*(5). https://doi.org/10.2196/18771

Dong, G., & Potenza, M. N. (2015). Behavioural and brain responses related to internet search and memory. *European Journal of Neuroscience, 42*(8), 2546–2554. https://doi.org/10.1111/ejn.13039

Gabel, L., Olino, T., Stanton, K., Goldstein, B., Klein, D., & Hayden, E. (2025). Assessing childhood and adolescent development of self-concepts via a self-referent encoding task psychological assessment. *Psychological Assessment, 37*(3), 100–113. https://doi.org/10.1037/pas0001363

Gentile, D. A., Nathanson, A. I., Rasmussen, E. E., Reimer, R. A., & Walsh, D. A. (2012a). Do you see what I see? Parent and child reports of parental monitoring of media. *Family Relations, 61*(3), 470–487. https://doi.org/10.1111/j.1741-3729.2012.00709.x

Haidt, J. (2024). *The anxious generation: How the great rewiring of childhood is causing an epidemic of mental illness*. Penguin Press.

Hannafin, R. (2017). Using technology to promote expression and self-concept. *Electronic Journal for the Integration of Technology in Education, 7,* 22–34. https://www.researchgate.net/publication/267998541_Using_Technology_to_Promote_Expression_and_Self-Concept

Higgins, E. T. (1998). The aboutness principle: A pervasive influence on human inference. *Social Cognition, 16*(1), 173–198. https://doi.org/10.1521/soco.1998.16.1.173

Jackson, L. A., von Eye, A., Fitzgerald, H. E., Zhao, Y., & Witt, E. A. (2010). Self-concept, self-esteem, gender, race and information technology use. *Computers in Human Behavior, 26*(3), 323–328. https://doi.org/10.1016/j.chb.2009.11.001

Jones, O. (2005). *An ecology of emotion, memory, self and landscape*. In J. Davidson, L. Bondi, & M. Smith (Eds.), Emotional Geographies (pp. 205–218). Ashgate.

Kids Help Phone. (2025). *Kids help phone.* https://kidshelpphone.ca/

Kleemans, M., Daalmans, S., Carbaat, I., & Anschütz, D. (2016). Picture perfect: The direct effect of manipulated Instagram photos on body image in adolescent girls. *Media Psychology, 21*(1), 93–110. https://doi.org/10.1080/15213269.2016.1257392

Kovess-Masfety, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., Koç, C., Kuijpers, R., Lesinskiene, S., Mihova, Z., Otten, R., Fermanian, C., & Pez, O. (2016). Is time spent playing video games associated with mental health, cognitive and social skills in young children? *Social Psychiatry and Psychiatric Epidemiology, 51*(3), 349–357. https://doi.org/10.1007/s00127-016-1179-6

Krause, N. (2019, December 3). *Church-based social relationships and change in self-esteem over time.* Wiley. https://onlinelibrary.wiley.com/doi/10.1111/j.1468-5906.2009.01477.x

Levine, D. T., & Stekel, D. J. (2016). So why have you added me? Adolescent girls' technology-mediated attachments and relationships.

Computers in Human Behavior, 63, 25–34. https://doi.org/10.1016/j.chb.2016.05.011

Michalski, C. A., Diemert, L. M., Helliwell, J. F., Goel, V., & Rosella, L. C. (2020). Relationship between sense of community belonging and self-rated health across life stages. *SSM - Population Health, 12*(12), 100676. https://doi.org/10.1016/j.ssmph.2020.100676

Moyer, M. (2022, March 24). *Kids as young as 8 are using social media more than ever, study finds.* The New York Times. https://www.nytimes.com/2022/03/24/well/family/child-social-media-use.html

Mukhra, R., Baryah, N., Krishan, K., & Kanchan, T. (2017). "Blue whale challenge": A game or crime? *Science and Engineering Ethics, 25*(1), 285–291. https://doi.org/10.1007/s11948-017-0004-2

Neumann, M. M., Park, E., Soong, H., Nichols, S., & Selim, N. (2022). Exploring the social media networks of primary school children. Education 3-13: *International Journal of Primary, Elementary and Early Years Education, 52*(8), 1252–1266. https://doi.org/10.1080/03004279.2022.214440

Norman, H., Nordin, N., Din, R., Ally, M., & Dogan, H. (2015). Exploring the roles of social participation in mobile social media learning: A social network analysis. *The International Review of Research in Open and Distributed Learning, 16*(4). https://doi.org/10.19173/irrodl.v16i4.2124

One Stop Talk. (2023, July 24). *One stop talk.* https://onestoptalk.ca

Oyserman, D., Bybee, D., & Terry, K. (2006). Possible selves and academic outcomes: How and when possible selves impel action. *Journal of Personality and Social Psychology, 91*(1), 188–204. https://doi.org/10.1037/0022-3514.91.1.188

Perry, K. (2025a, January 29). *Social media, mental health, and adolescent social dynamics with Mitch Prinstein.* Spotify. https://open.spotify.com/episode/53ZolEFk9ZOyIjQFsBgbZK

Perry, K. (2025b, February 19). *Video gaming effects on children's behavior and health with Douglas Gentile, PhD.* Spotify. https://open.spotify.com/episode/30Zkk8dZRUIBCI3lUH4VjC

Perry, K. (2025c, March 12). *Harmful social media algorithms and children with Imran Ahmed.* Spotify. https://open.spotify.com/episode/2O8sKuVy6gAPIlviYb3PrB?go=1&sp_cid=ccaf23792b925d8d4d889cb1da9256dd&utm_source=embed_player_p&utm_medium=desktop&nd=1&dlsi=cee3f734674f4fff

Pew Research Center. (2024a, January 5). *Teens and internet, device access fact sheet.* Pew Research Center. https://www.pewresearch.org/internet/fact-sheet/teens-and-internet-device-access-fact-sheet/

Pew Research Center. (2024b, January 5). *Teens and social media fact sheet.* Pew Research Center. https://www.pewresearch.org/internet/fact-sheet/teens-and-social-media-fact-sheet/

Piers, E. V., & Piers, D. B. (1969). *The Piers-Harris Children's Self-Concept Scale* (The way I feel about myself). Western Psychological Services.

Ponti, M., Belanger, S., Grimes, R., Heard, J., Johnson, M., Moreau, E., Norris, M., Shaw, A., Stanwick, R., Lankvled, J. V., & Williams, R. (2017). Screen time and young children: Promoting health and development in a digital world. *Paediatrics & Child Health, 22*(8), 461–468. https://doi.org/10.1093/pch/pxx123

Prince, D. (2013). What about place? Considering the role of physical environment on youth imagining of future possible selves. *Journal of Youth Studies, 17*(6), 697–716. https://doi.org/10.1080/13676261.2013.836591

Reay, D., & Lucey, H. (2000). "I don't really like it here but I don't want to be anywhere else": *Children and inner city council estates. Antipode, 32*(4), 410-428. https://doi.org/10.1111/1467-8330.00144

Resett, S., Meier, L., García Sánchez, O., & Katz, O. (2016). Predicción del autoconcepto a partir de las emociones maternas en niños de edad escolar y diferencias según sexo. *Psicodebate, 16*(1), 27. https://doi.org/10.18682/pd.v16i1.565

Ricci, R. C., Paulo, A. S. C. de, Freitas, A. K. P. B. de, Ribeiro, I. C., Pires, L. S. A., Facina, M. E. L., Cabral, M. B., Parduci, N. V., Spegiorin, R. C., Bogado, S. S. G., Chociay Junior, S., Carachesti, T. N., & Larroque, M. M. (2023). Impacts of technology on children's health: A systematic review. *Revista Paulista de Pediatria, 41*. https://doi.org/10.1590/1984-0462/2023/41/2020504

Ryan, A. M., & Patrick, H. (2001). The classroom social environment and changes in adolescents' motivation and engagement during middle school. *American Educational Research Journal, 38*(2), 437–460. https://doi.org/10.3102/00028312038002437

Sampalo, M., Lázaro, E., & Luna, P.-M. (2023). Action video gaming and attention in young adults: A systematic review. *Journal of Attention Disorders, 27*(5), 530–538. https://doi.org/10.1177/10870547231153878

Schwarz, N., & Bless, H. (1992). *Constructing reality and its alternatives: An inclusion/ exclusion model of assimilation and contrast effects in social judgment.* In L. Martin & A. Tesser (Eds.), The Construction of Social Judgments (pp. 217–245). Erlbaum.

Schwarz, N., & Clore, G. (2007). *Feelings and phenomenal experiences.* In A. Kruglanski & E. T. Higgins (Eds.), Social psychology. Handbook of Basic Principles (pp. 385–407). Guildford.

Seymour, S. L., Sullivan, H. J., Story, N. O., & Mosley, M. L. (1987). Microcomputers and continuing motivation. *ECTJ, 35*(1), 18–23. https://doi.org/10.1007/bf02769449

Shavelson, R. J., Hubner, J. J., & Stanton, G. C. (1976). Self-concept: Validation of construct interpretations. *Review of Educational Research, 46*(3), 407–441. https://doi.org/10.3102/00346543046003407

Somerville, L. H., Jones, R. M., Ruberry, E. J., Dyke, J. P., Glover, G., & Casey, B. J. (2013). The medial prefrontal cortex and the emergence of self-conscious emotion in adolescence. *Psychological Science, 24*(8), 1554–1562. https://doi.org/10.1177/0956797613475633

Stoddard, S. A., Pierce, J., & Schmidt, C. J. (2016). Grade-level differences in future-oriented self-concept during early adolescence. *The Journal of School Nursing, 32*(6), 390–396. https://doi.org/10.1177/1059840516649236

Thariq, M. (2018). Interpersonal communication role for self-concept of children and families. *Budapest International Research and Critics Institute (BIRCI-Journal): Humanities and Social Sciences, 1*(2), 182–195. https://doi.org/10.33258/birci.v1i2.21

Twenge, J. M., Haidt, J., Lozano, J., & Cummins, K. M. (2022). Specification curve analysis shows that social media use is linked to poor mental health, especially among girls. *Acta Psychologica, 224*(224), 103512. https://doi.org/10.1016/j.actpsy.2022.103512

UBC Extended Learning. (2024, August 8). *7 long-lasting benefits of teens learning tech | University of British Columbia extended learning*. Extendedlearning.ubc.ca. https://circuitstream.extendedlearning.ubc.ca/blog/7-long-lasting-benefits-of-teens-learning-tech

Weir, K. (2023, September 1). *Social media brings benefits and risks to teens. Psychology can help identify a path forward.* American Psychological Association. https://www.apa.org/monitor/2023/09/protecting-teens-on-social-media

YMCA. (2017). *Somebody like me: A report investigating the impact of body image anxiety on young people in the UK*. In BeRealCampaign. YMCA. https://www.berealcampaign.co.uk/wp-content/uploads/2018/02/Somebody_like_me-v1.0.pdf