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Through Dooyeweerd's Lens: Evaluating Screen Time's Impact on Children's Wellbeing and Mental Health

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Executive Summary

This study delves into the growing concern of screen addiction in children, presenting a multi-dimensional exploration of its implications through the lens of Dutch philosopher Herman Dooyeweerd's aspects of everyday life. As digital technologies become more integrated into children's daily lives, the ramifications stretch beyond physiological impacts, influencing socio-emotional, cognitive, and moral domains. Dooyeweerd's Theory of Aspects elucidates 15 modal aspects of everyday functioning, offering a nuanced understanding of screen-related concerns and their intricate interrelations. The principle of Shalom, emphasising balance and the simultaneous realization of norms, is pivotal, guiding the analysis towards understanding both the potential benefits and detriments of screen usage. The study underscores gaps in existing literature, particularly the broader societal implications of prolonged screen exposure. For holistic interventions, the interdependence of aspects must be acknowledged, ensuring that strategies do not disproportionately focus on one facet at the expense of others. In harnessing Dooyeweerd's philosophy, this research illuminates the profound potential in understanding screen-related challenges and paves the way for future balanced and cohesive interventions.

Introduction, Background and Context

In today's digital age, digital tools play an unprecedented role in shaping self-expression, ingenuity, and exploration. The digital domain, which encompasses the internet and social media, acts as an extensive library and an informative reservoir, endowing children with a wealth of knowledge and a broader perspective of the global environment.

The myriad benefits of this digital realm manifest in various aspects of children's lives. It offers platforms to connect with family, such as grandparents, as well as peers and educators. Research shows that even children under 2 years can effectively engage with family members via video chats, a medium that supports early learning (McClure, et al. 2018; Tarasuik, et al. 2011; Myers, et al. 2017). Additionally, for specific demographics, like the LGBTQ+ youth, the digital space provides a refuge to discover and join supportive communities. Notably, platforms such as Sesame Street have been influential, guiding toddlers in understanding racial harmony, cooperation, kindness, arithmetic, and the alphabet. These platforms also bolster reading and overall learning skills (Wright and Huston, 1995; Fisch and Truglio, 2014).

However, juxtaposed with these positives are growing concerns. The dominant discourse emphasizes the potential negative repercussions of unrestricted screen exposure, especially among the younger population. Several studies highlight that excessive digital engagement can compromise

children's well-being, leading to anxiety, depression, and diminished empathy (Children's society, 2018).

Further complicating matters, the intrinsic design of digital platforms, particularly social media, is formulated to captivate users. Over-engagement has been linked to patterns akin to addiction. The ramifications of excessive screen time include postural issues (Salter, 1983), obesity, social skill deficits, addictive behaviours (Canadian Paediatric Society, 2002), and more severe mental health concerns such as depression (Lin, et al. 2016), anxiety (Dhir, et al. 2018), and reduced self-esteem (Woods and Scott, 2016). Moreover, other research has identified associations between high screen time and tendencies for self-harm, suicidal ideation (Arendt, et al. 2019), feeling threatened, intimidation, exclusion (Yoo and Smetana, 2019), and even a decline in face-to-face interactions crucial for social communication (Westby, 2021).

Observationally, children are frequently seen engrossed in screens, whether at parks, dining places, or social events. A report by UK's communication regulator, Ofcom (2019), spotlighted that platforms like YouTube and TikTok were immensely popular among children aged 3 to 17. Astonishingly, 89% of children aged 3 to 4 engage with these platforms, with 72% accessing subscription video services like Netflix, Amazon Prime Video, and Disney+. In response to this digital immersion, the World Health Organization, in 2019, set guidelines: children below 2 years should avoid screen time, and those aged 2 to 5 should restrict it to a maximum of one hour daily. This was to protect young minds that are yet to fully develop discernment abilities. This sentiment was echoed in the HM Government's Online Harms White Paper (2019), the UK Chief Medical Officers (Davies et al., 2019), and the House of Commons Science and Technology Committee (2019). Alarmingly, the 2022 Ofcom report indicated that only 40% of parents with children aged 3 to 17 were informed about age requirements for most social media platforms.

Despite regulations such as the Children's Online Privacy Protection Act (1998) mandating users to be 13 years or older, startlingly, 60% of children aged 8 to 11 and 33% of parents with children aged 5 to 7 reported their child having a personal profile on at least one social media platform. Additionally, ownership of smartphones is increasing, with 23% of 9-year-olds, 50% of 10-year-olds, and 94% of 15-year-olds possessing one (Ofcom, 2019).

While children's active engagement with social media is well-documented, comprehensive research into screen addiction in this demographic is still in its nascent stages (Li, Luo, and He, 2022). This paper aims to sift through the discourses on screen addiction in children, presenting an indicative list of concerns, and interpreting them through the lens of everyday life philosophy introduced by Dutch philosopher Herman Dooyeweerd.

Our article is structured as follows: First, we lay out the current understanding of screens' impact on children. Second, we propose a philosophical approach that could illuminate new insights. Finally, we detail our findings from employing Dooyeweerd's suite of aspects for an aspectual analysis and conclude with recommendations for future research and practice.

Literature Review

This section delves into the prevailing discussions regarding the impact of screens on children. While this review is not exhaustive of all academic and grey literature on the subject, it serves as a foundational overview to introduce a framework for understanding the influence of screens on children.

School teachers have stressed their concerns for increase prevalence of cyberbullying and cybervictimisations (Gaffney and Farrington, 2018). The ownership of mobile phones and internet has not only enabled cyberbullying irrespective of geography, time or face to face contact but has also increased the number of bystanders who view or participate in cyberbullying (Public Health England, 2017). Children in England (79%) and Scotland (74%) reported to have witnessed people being mean or unkind to each other in social media platforms (Ofcom,2022).4 in 10 children between the ages of 8 to 17 had experienced nasty or hurtful comments (quoted as bullying in the report) via communication technology (84% UK average) compared to face to face (61% UK average). 75% children in Northern Ireland are more likely to be bullied via text or messaging apps compared to 64% face-to-face. A higher comparison to UK average (56%). 6 in 10 children in Scotland reported being bullied via social media (61% higher than the UK average of 43%) or via text or messaging apps (also 61%) than being bullied face-to-face (56%). However, children in Wales experienced higher rates of bullying face-to-face (59%) than via social media or text or messaging apps (both 49%). Comparable to the UK average (Ofcom, 2022).

Instances of online harassment or bullying including name-calling and public humiliation have been correlated with elevated incidences of distress, confusion, isolation, depression, anxiety, and even suicidal tendencies (Calancie, et al. 2017; Smith, et al. 2017; O'Reilly, et al. 2018; O'Reilly, 2020). Moreover, unrestricted internet access can render children susceptible to malevolent entities, be they cyberbullies, deceptive schemers, or other individuals with nefarious intentions.

While cyberbullying remains a significant concern, it intertwines with another pressing issue in the digital age: the pressure of idealized images.

Photo sharing platforms instil value in visual content dominated by “perfect” images to garner “likes” symbolising popularity (Popat and Tarrant, 2023). Teenagers tend to place their self-esteem on the number of “likes” as a confirmation of meeting or not meeting specific body ideals rooted in media representation on what is beautiful (Berne, et al. 2014).This significantly amplify feelings of inadequacy, self-hate due to their own body dissatisfaction (Burnette, et al. 2017; O'Reilly, et al. 2018) causing eating disorders such as anorexia or bulimia in striving to lose/gain weight to meet the “ideal body”(Radovic, et al. 2017). Cyberbullying targeting body shape also explains the need to meet the ideal body shape adding to anxiety (Popat and Tarrant, 2023). Studies have found that boys often engage in weight-shaming directed at girls, a behaviour that tends to lower the self-esteem of the victims (Berne, et al. 2014). Still both genders equally felt frequently either scrutinised (girls) or criticised (boys) (Popat and Tarrant, 2023). Some boys’ sexuality had been questioned when they posted ‘selfies’ of themselves in unique clothing, or posting meaningful captions (Berne, et al. 2014). Encountering such idealised depictions can predispose children and young adults to depressive states (Popat and Tarrant, 2023).

While such comparisons can create a distorted self-image, the consequences of screen time do not end there. Social media's dual role in both alleviating and exacerbating feelings of loneliness has been studied extensively.

Some children and teenagers access social media platforms to alleviate social isolation. However, social media platforms could also counterintuitively increase social isolation. Frequent and constant exposure to unrealistic portrayals and highly distilled exposure may give children and teenagers the impression that others are living happier, more connected lives making them feel socially isolated in comparison causing depression and anxiety (Kross, et al. 2013; Chou and Edge, 2012; Lin, et al. 2016; Sagioglou, et al. 2014; Shensa, et al. 2016 Primack, 2017; Huang, 2020; Meshi, et al. 2020; Meshi and Ellithorpe, 2021).

Many practitioners posit that the risks of addiction and resultant social isolation can be mitigated by pairing screen use with ample social interaction, and by imposing session limits, ideally around 10-15 minutes, as suggested by Soysa and Mahmud (2018).

Apart from the mental and emotional effects, the physical implications of prolonged screen exposure are also concerning, particularly regarding inactivity and its consequences.

There is a burgeoning body of evidence underscoring the correlation between sedentary lifestyles and inactive behaviour caused by spending prolonged hours on screen instead of physical activity such as exercising (Zamperoni, 2018) causing weight issues (Stiglic and Viner 2019). Statistics highlight that 39% of parents main concerns for their 11 to 13 year olds were the impact of screens on physical activity (Internet Matters, 2018). Cancer Research UK studied children between the ages 7 and 11 found children who spend prolonged hours online or watching television are more likely to be obese or overweight (79%) as they ask their parents for chocolate, crisps, sugary drinks and takeaways (Campbell, 2018), consume high fat and high energy snack food (Canadian Paediatric Society, 2002). Stiglic and Viner (2019) found similar findings that prolonged screen time is associated with adiposity and unhealthy diet amongst children. As prolonged screen time exposes these children to junk food advertisements (9 junk food advertisement are featured in a 30-minute episode of their favourite TV shows and prime time commercials promote unhealthy dietary practices) children pestering their parents to purchase and consume these unhealthy alternatives (Campbell, 2018; Certain and Kahn, 2002; Ostbye, et al. 1993). As prolonged screen time is also replacing time spent doing physical activity it causes weight issues in children (Livingstone, et al., 2018; Iannotti, et al. 2009; Marsh, et al. 2013).

Beyond the physical implications, the toll of excessive screen time extends to cognitive faculties, with notable impacts on attention and focus.

The cognitive implications of unrestrained screen use merit attention. Prolonged screen use manifests in a diminished capacity for sustained attention, heightened susceptibility to distractions, and challenges in regaining cognitive equilibrium after interruptions (Wegmann, et al. 2017; Duke and Montag, 2017). Excessive technological immersion not only erodes cognitive focus and hinders learning capabilities through altering brain chemistry but also causes fatigue, anxiety, perceived stress and depression (Sohn, et al. 2019).

A study of children between the ages of 8 and 11 years highlight children exposed to longer than two hours a day of recreational screen time on smart phones and playing video games had worse working memory, processing speed, attention levels, language skills and executive function (Donnelly, 2018). Prolonged screen use among children aged between 0 to 12 years was associated with poorer child language development while a better quality of screen use improved language skills (Madigan, et al. 2020).

While the impact on focus is evident, screens further infiltrate the foundational aspects of learning, reshaping the way children process and retain information.

A holistic approach to learning recognizes the brain's optimal conditions: well-rested, nourished, and content. Jensen (2008) underscores that students grappling with stress, anxiety, or depression face diminished learning and retention capacities. Notably, one variable influencing these mental states is the duration and nature of screen-time. Social media use also changes one's cognitive capacity, such as retention of information and recall (Ferguson, 2015).

With the ubiquity of smartphones, their multifunctional capabilities have transformed them into indispensable tools, substituting for newspapers, books, televisions, computers, and more. While these devices enhance productivity, their excessive and compulsive use hinders daily activities, especially interpersonal interactions. Studies have reiterated that excessive media use, compulsive texting and daily media interruptions reduces productivity, diminishes academic performance (Wegmann, et al. 2017; Duke and Montag, 2017) and increases classroom hostility (Cao, et al. 2018; Stavropoulos, et al. 2016).

The impact of screen engagement is especially pronounced in children with Autism Spectrum Disorder (ASD). High video game usage can render these children less available for the crucial learning that occurs through social engagement. There is a consensus that children with ASD might be more vulnerable to the pitfalls of screen time. Intrinsically, many behaviours associated with ASD, such as difficulties in reading facial cues or reduced empathy, mirror those seen with heightened screen use. Notably, screen exposure could amplify these traits. Several studies have indicated that extensive screen use among typical children and adults can impede their ability to interpret facial expressions, diminish empathy, and hinder communication (Pea et al., 2012; Uhls et al., 2014). Given that individuals with ASD already exhibit challenges in these areas, their vulnerabilities might be exacerbated with increased screen exposure (Westby, 2021).

While screen usage distinctly influences cognitive and learning capacities, its repercussions on physical health, particularly sleep patterns, are equally profound.

The allure of screens, particularly around bedtime, has been identified as a significant disruptor of sleep quality and the amount of sleep (Woods, et al. 2019; Hale, et al. 2018; Przybylski, 2019). Statistics highlight 50% of parents' main concerns regarding screen use for their 14 to 16 years olds were the impact of screens on sleep (Internet Matters, 2018). As touchscreens has resulted in shortened sleep duration and/or disturbed sleep patterns amongst children (Marinelli, et al. 2014; Cheung, et al. 2017; Lemola, et al. 2015; Twenge, et al. 2017). Children who experience inadequate sleep, may have problems getting along with others, feel angry, impulsive, have mood swings, lack motivation, feel sad or depressed, have problems paying attention often get lower grades and feel stressed (National Heart Lung and Blood Institute, 2022).

Beyond the physiological impacts of screen time, there is an alarming concern regarding children's exposure to unsettling online content, warranting parental awareness.

Adults can select the best from a flood of unnecessary information, children on the other hand, need care as they are not always able to eliminate irrelevant stuff. 20% parents of children between the ages of 3 to 17 in UK disclosed that their child had told them about something they had seen online that had scared or upset them (Ofcom, 2020)

Children/teenagers are exposed to harmful and damaging content (National Children's Bureau Northern Ireland, 2014) such as self-harm posts (Singleton et al., 2016; Radovic, et al. 2017; O'Reilly, 2020), deadly drugs, pornographic, racist, misleading information, or viewing scary or violent images online, causes the graphic images to replay in children's minds which results in disturbed sleep (Smahel, et al. 2015; Blum-Ross, et al. 2016). Moreover, posting impulsively when upset or angry (stress posting) causes extended offline conflict (Radovic, et al. 2017). Children and teenagers could also be trapped in inappropriate commercial advertising, advertisement with marketing schemes and hidden cost (National Children's Bureau Northern Ireland, 2014) resulting in gambling and overspending in app purchases (Blum-Ross, et al. 2016; 5Rights Foundation, 2019).

When assessing the authenticity of online profiles, children's ability to discern reliable indicators of genuine posts was notably lower than their perceived confidence across the UK, Scotland, Wales, and Northern Ireland. However, children in Northern Ireland demonstrated a higher likelihood of identifying fake social media profiles compared to their counterparts in other regions (Ofcom, 2020)

While the psychological and emotional toll of harmful online content is evident, there is also a growing concern of screen use impact on vision.

Extended screen exposure can lead to visual discomforts like headaches, eye strain, and vision impairment due to factors like glare and incorrect viewing angles. Research indicates outdoor environments stimulate retinal dopamine release, helping prevent myopia. Hence, reduced outdoor time elevates children's risk of short-sightedness. Short-sightedness in children has increased over the past few decades (Gudgel, 2019). Statistics shows 39% of parents' main concerns for their 6 to 10 year olds were the impact of screens on eye-sight (Internet Matters, 2018). Mitigating factors contributing to myopia involves reducing close work or prolonged screen use. Studies have found that young individuals engaging in video gaming for over 30 minutes daily reported headaches, vertigo, and eye issues, with dominant eye disturbances potentially leading to vision loss (French, et al. 2013; Lissak, 2018; Nakshine, 2022).

In our literature review, we pinpointed several concerns associated with the impact of screen-related technologies on children. These include eye strain, exposure to harmful content, sleep disorders, reduced focus and learning capabilities, cyberbullying, unhealthy self-comparisons, social isolation, and sedentary behaviours. To better contextualise these concerns, we must examine them through the prism of daily experiences and their inherent significance. We propose utilising Dooyeweerd's aspects of everyday life as a foundational framework. This philosophy offers a more profound and holistic comprehension of these issues, set against the broader tapestry of life.

Dooyeweerd's aspects of everyday life

In seminal works such as "A New Critique of Theoretical Thought" and "In the Twilight of Western Thought," the Dutch reformational philosopher Herman Dooyeweerd introduced his Theory of Aspects. This theory elucidates 15 modal aspects, representing distinct modes of our everyday experiential functioning (Basden, 2017).

To better remember the 15 modal aspects consider the table below (Table 1) as a helpful guide. It not only provides a more intuitive understanding of each aspect's core but also highlights the potential good each aspect can manifest in our temporal reality. While Dooyeweerd himself did not categorise the aspects in this manner, this grouping can offer clarity and insight for our current discourse (Basden, 2019).

Aspect	Meaning	Good
Mathematical Aspects		
Quantitative	One, several, more and less	many; Reliable amount
Spatial	Here, there, between, inside and outside	Simultaneity, continuity
Kinematic	Flowing & going	Change
Pre-Human Aspects		
Physical	Forces, energy and matter	Irreversible persistence and causality
Biotic Organic	/ Living as organisms in an environment	Sustained being and functioning that is not wholly controlled by the

		environment
Sensitive / Psychic	Feeling and responding	Interactive engagement with world
Aspects of Human Individual		
Analytical	Conceptualising, clarifying, categorising and cogitating	Independence from the world; Conceptual and theoretical thinking
Formative	Deliberate creative shaping of things	Achievement, innovation
Lingual	Expressing, recording and interpreting	Intelligible externalisation of our intended meaning; Referring beyond to whole web of meaning
Social Aspects		
Social	We, us and them; relating, agreeing and appointing	Togetherness
Economic	Managing limited resources frugally	Sustainable prosperity
Aesthetic	Harmonising,, enjoying, playing, beautifying	Delight that seems non-necessary
Aspects of Structures of Society		
Juridical	Due: appropriateness, debt and reward, structures of policy and legality	Due for all
Ethical	Attitude; self-giving love	Extra goodness, beyond the imperative of due
Pistic / Faith	Vision, commitment, certainty and belief aspiring, trusting, worshipping	Courage, hope and openness to the Divine; change in the attitude and direction of society

Table 1: Dooyeweerd's Aspects

In Herman Dooyeweerd's profound philosophical framework, aspects serve multifaceted roles, encapsulating spheres of meaning and law. These spheres offer normative guidelines that illuminate what is deemed good or detrimental. For instance, the aesthetic aspect views beauty as a virtue and ugliness as a vice; the juridical dimension prizes justice and condemns injustice; the analytic realm esteems clarity and frowns upon confusion; and in the pistic domain, loyalty is cherished while disloyalty is rebuked (Thinyane and Goldkind, 2020).

In addition to the Theory of Aspects, Dooyeweerd introduced the Shalom principle, often referred to as the "simultaneous realization of norms." This principle underscores the imperative of adhering to the modal aspect's inherent laws to ensure sustainability, harmony, peace, and a comprehensive sense of well-being (Thinyane and Goldkind, 2020).

Moreover, these aspects are arranged in a sequence, spanning from the quantitative to the pistic. This sequential arrangement facilitates the delineation of two dependency types among aspects: foundational and anticipatory. Foundational dependency acknowledges the supportive role of preceding aspects. For instance, the economic domain relies foundationally on social and lingual dimensions, illustrated by how goods and services exchange (economic) hinges on interaction (social) and communication (lingual). On the other hand, anticipatory dependency implies that an aspect's potential to bolster succeeding aspects leans on the meaning derived from subsequent

facets. As an illustration, the perception of social harmony (aesthetic) is shaped through its anticipatory reliance on fairness and equity (juridical) concepts (Thinyane and Goldkind, 2020).

When conceptualizing children's well-being through the lens of aspectual interdependencies, it becomes clear that well-being is multi-faceted, with intricate interrelations across different dimensions. For instance, attaining psychological equilibrium (psychic aspect) intrinsically hinges on physical health (biotic).

While Dooyeweerd's facets are not definitive or exclusive, they offer a robust theoretical base for a universally applicable definition of well-being, both practically and academically. Furthermore, the Shalom principle serves as a crucial barometer, evaluating academic and general literature's consistency in addressing children's screen usage impacts towards universally accepted objectives, like global well-being (Basden, 2007). Thinyane and Goldkind (2020) posited that a perspective on human well-being arising from these reflections entails achieving balance (Shalom) throughout the multifaceted human functions.

We have used Dooyeweerd's suite of aspects as a conceptual tool to analyse the concerns regarding the impact of screens on children's mental health and well-being, drawn from various discourses on screen addiction in children. In our analysis, we identify the primary aspect in which a concern is grounded. For instance, eye strain is primarily rooted in the psychic or sensitive aspect, as it relates to the feeling and response of one of the main five senses due to prolonged screen exposure. The ability to focus is mainly associated with the analytic aspect, as it involves distinguishing a goal for concentration and avoiding distraction from other stimuli in our environment.

Dooyeweerd's Aspects	Impacts of Screen on Children's mental health and well being
Quantitative	-
Spatial	-
Kinematic	-
Physical	Sedentary Behaviour (less time spent exercising/doing other forms of physical activities),
Biotic	Sleep disorders (fewer hours of sleep, poorer sleep quality, increased tiredness)
Psychic	Eye fatigue – Eye strain
Analytical	Ability to focus
Formative	Ability to learn
Lingual	Exposure to negative content
Social	Unhealthy comparisons to others, Social Isolation
Economic	-
Aesthetic	-
Juridical	cyberbullying
Ethical	-
Pistic	-

Table 2: Aspectual Analysis

Though Table 2 indicates what is centrally meaningful in each of the concerns, it is important to note, according to Dooyeweerd, that while things are multi-aspectual, they are qualified by a primary aspect.

Closing Remarks

In this article we aimed to sift through the discourses on screen addiction in children, presenting an indicative list of concerns, and interpreting them through the lens of everyday life philosophy introduced by Dutch philosopher Herman Dooyeweerd as a foundational framework for analysing prevailing concerns surrounding children's screen exposure. This approach offers a nuanced perspective, enabling us to interpret the multifaceted impact through distinct spheres of meaning.

While existing literature predominantly centres on the adverse effects of screen-related digital technologies, focusing primarily on pre-human, human individual and social aspects, there remains a crucial gap in addressing broader societal implications. Table 1 indicates these as social aspects and structural societal aspects. It is imperative that research further delves into the societal repercussions of prolonged screen usage on children. For instance, we must explore how extensive screen exposure influences children's confidence, aspirations, and belief systems, given they are our future's architects (pistic aspect). How does content, driven largely by self-promotion and egocentrism, impact societal notions of selflessness and generosity? (Ethical aspect) Moreover, understanding how screen time moulds youths' accountability and their inclination to uphold justice within their community is of paramount importance (Juridical).

Guided by the principles of Shalom and the interdependence of aspects, we urge stakeholders including parents, educators, carers, clinicians, and policymakers, to adopt a balanced viewpoint, considering all aspects when formulating interventions or policies. A harmonious approach ensures that one aspect is not disproportionately emphasised at the detriment of others. For instance, promoting physical activities (like dancing) should be balanced against screen-induced concerns like eye fatigue or social comparison. Such equilibrium fosters cohesive strategies.

Furthermore, when devising intervention strategies, it is crucial to consider the interconnectedness between aspects. Dooyeweerd's philosophy provides a distinctive understanding of each aspect's impact and highlights the complex interplay among them.

While this report presents an overview of Dooyeweerd's philosophy, it is vital to appreciate the depth and nuance of his thought. We have utilized elements from the Theory of Aspects, normative guidelines, the Shalom principle, and aspect interdependence. This approach has illuminated the profound potential of Dooyeweerd's philosophy in understanding screen-related concerns and guiding future interventions.

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October 2023