

Developing Youth Character in Online Spaces: Leveraging Personality Dynamics for Micro-interventions

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Innovation and growth in the use of online social platforms has raised questions about the impact of such platforms on the character and wellbeing of youth. These questions have been disproportionately focused on their negative impacts, such as increases in mental health challenges and reductions in attention, social skills, and social interactions. However, many studies, including systematic reviews, show an uncertain and complex relation between youth mental health and wellbeing and technology use, highlighting small associations in *both* positive and negative directions. Although we acknowledge that online spaces may pose several risks to youth, we note that technologies play an increasingly important role in their lives. Given the pervasiveness of technology and the fact that technology is now a permanent part of their lives, approaches need to consider how to support youth in navigating these online spaces, including nurturing their characters. We propose two shifts to help address some of the common risks face in online spaces and support positive development including character virtue development and increased wellbeing. These shifts include understanding the dynamic nature of personality trait manifestations and its change, encapsulated by contemporary theoretical approaches such as Whole Trait Theory and considering the impact of brief moments of interactions through targeted micro-interventions. We discuss these shifts in relation to considering how to better foster healthy youth mobile technology relationships.

CCS CONCEPTS • Human-centered computing → Human-computer interaction (HCI) → HCI theory, concepts, models

Additional Keywords and Phrases: Youth, Social media, Mobile technology, Behavior Change, Personality Dynamics, Interventions, Mental Health, Wellbeing

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1 INTRODUCTION

Youth are spending an increasing amount of time in online spaces, such as social media, games, and learning environments. Although significant discourse has focused on the negative impacts of these spaces on youth character development and wellbeing [1,2], most research does not support that these online spaces are having a large negative impact on youth [3,4]. At the same time, work has highlighted the distinctive opportunities of online spaces to support youth [5]. Given the current centrality of technology to youth's social, emotional, and educational lives, it is vital that we understand how such online spaces can be used to support character formation, which may in turn have a positive impact on their wellbeing.

We propose conceptual and intervention shifts are required to help address some of the common risks that youth face in online spaces. These shifts can also support developing character and promoting youth wellbeing through their interaction in these spaces. The first shift is a conceptual shift. Recent advances in conceptualizing and fostering character formation views character as a dynamic personality process [e.g., 6-8]. For example, Whole Trait Theory (WTT) notes that while an individual's behavior varies rapidly and frequently across different occasions, their behavior is both stable and distinct from other individuals when averaged across a larger period of time [9]. Understanding youth's behavior in online spaces in relation to WTT provides an opportunity to develop their character by frequent interactions that nudge behaviors in a desired direction and shifts their distributions of character traits. The second shift is with regards to intervention. Most efforts to "intervene" on youth in online spaces take an approach focused on attempting to create large behavior changes. Recent calls from policymakers, researchers, educators, and parents have often been to significantly reduce youth's time in online spaces and perhaps even getting rid of some, like social media, altogether. This view is captured in the recent book, *The Anxious Generation*, in which Haidt recommends youth should not receive smartphones before age 14 and not use social media before age 16 [10]. Our approach is to focus on more targeted behavior change by using "micro-

interventions.” Micro-interventions are brief, highly-focused interventions using in-the-moment elements to achieve specific emotional, cognitive, or behavioral change [11]. Micro-interventions differ from brief or standard interventions in their breadth, goals, and time frame.

The combination of these two shifts can support research to better understand how to promote healthier interactions with youth and mobile technologies and lead to opportunities in online spaces can lead to character development. We discuss each of these shifts and then discuss how these approaches can contribute to better address potential risks in online spaces and spur character development.

1.1 Personality Dynamics and Whole Trait Theory

WTT proposes that an individual’s manifestations of specific character traits can be described in terms of a distribution of personality states [12], which measures the extent to which an individual manifests a given virtue at a specific point in time. According to the model, possessing a specific trait – such as compassion [6] – is simply akin to behaving in a compassionate manner (e.g., kind, empathetic, and warm) more often on average. For this reason, the model measures “personality states”, which are similar to traits in affective, cognitive, and behavioral content, but states are manifested for a few minutes or hours rather than for months or years [13, 14]. Following this model, youth behavior in an online space is a reflection of their personality trait tendency, interacting with elements of the environment – the design of the online space, the other people present in their environment, and any other relevant contextual variables.

In our view, such a model lends itself to the successful empirical examination of character virtues and a clear path to shaping youth’s mobile technology relationships. To flesh out one example, many youth can demonstrate self-control on some occasions and fail to demonstrate self-control on other occasions. However, youth with more temperance demonstrate temperance more frequently and clearly than youth with less temperance. These youth might be more likely to moderate their screen time effectively and less likely to engage in maladaptive behaviors related to screentime. That is not to say that these youth would never use screens or engage in maladaptive behaviors in relation to screentime. As such, this theory requires assessment of youth’s behaviors in the context of their daily lives and overtime.

In addition, WTT proposes that these distributions of states can be explained by social-cognitive mechanisms that lead to the person enacting the trait at different state levels. One core insight of WTT is therefore the *functional* nature of traits—that is, individuals enact trait manifestations in order to fulfill specific goals and thereby achieve specific outcomes [15] and in response to specific opportunities afforded by the situation [16]. In other words, people intentionally modulate their character to fulfill specific goals and manage distinct environments. Given this framing of character in terms of a distribution of intentional states, WTT thus provides distinctive insight for character interventions, as repeated enactments of specific character states can lead to enduring character change. A key question then is how to support youth to engage in repeated enactments of specific character states in online environments, and to develop long-term goals to enact character traits in those contexts.

1.2 Character Development through Micro-Interventions

Although youth spent considerable time in online spaces, a lot of this time tends to be in bursts of activity. As such, interventions need to be matched to the way youth use technology, in short, yet repeated interactions throughout their day. Micro-interventions match this type of use. Micro-interventions can be defined in regard to their breadth, goals, and time frame.

Breadth. Compared to standard interventions, which might have broad goals or aims, micro-interventions are narrow in scope, with highly focused objectives.

Goals. Each micro-intervention has a specific goal, such as education, feedback, skill acquisition, social/emotional support, emotional change, or behavioral change.

Time Frame. Micro-interventions are intended to elicit in-the-moment change and require seconds to minutes rather than hours to weeks.

Micro-interventions are especially well-suited for use in online spaces because content in online spaces is often designed for brief engagement and distilled information, instruction, or calls to action. They also represent a novel approach in intervening with youth in online spaces by taking advantage of specific online contexts and motivating specific-in-the

moment goals. Designing interventions as micro-interventions can be especially useful for delivery in online spaces or via mobile technologies. Several clinical researchers have used micro-interventions in mobile health interventions advancing approaches such as just-in-time adaptive interventions or ecological momentary interventions [17, 18]. We propose that micro-interventions may be more appropriate than traditional intervention approaches for the type of online spaces used by youth. Although creating a new online intervention may be challenging, creating new content or features that can be deployed in existing online spaces – social media platforms, online gaming environments, educational technologies, is more scalable, adaptable, and sustainable. We also argue that such an approach might be more appropriate for HCI and behavior change researchers, who are unlikely to create products that will be widely deployed and implemented but can help shape approaches to intervening or designing features that might be able to impact real-world deployments and current and emerging products.

1.3 Addressing Risks and Supporting Character in Online Spaces

The growing public concerns around mobile technology use and youth wellbeing is represented by news stories, legislative action, smartphone bans in schools, and even a U.S. Surgeon General Advisory on the risks of social media. These concerns have unfortunately focused on a narrative as technology as all negative, rather than a more nuanced, albeit likely more accurate, view of mobile technology as having some potential risks and benefits for youth wellbeing. Understanding how best to support youth in online spaces requires a consideration of the common and specific risks youth face in these spaces. Table 1 displays some risks identified from scholarly and gray literature from fields such as psychology, child development, learning sciences, game studies, and HCI focused on ages 13-24 [19]. We match each risk with potential character virtues that could help overcome these risks.

Table 1: Potential risks encountered by youth in online spaces [19] and opportunities for character virtue development

Risks	Opportunities to support youth through character development
Screen Time	Fostering self-control to promote appropriate use of technologies.
Maladaptive Behaviors	Fostering self-control to promote appropriate use of technologies.
Exposure to Harmful Content	Fostering curiosity to support appropriate exploration of online spaces. Fostering wisdom to skill manage harmful content.
Distressing Encounters	Fostering self-regulation to moderate one’s reaction in encounters. Fostering wisdom to skillfully manage distressing encounters appropriately.
Social Comparison	Fostering compassion towards the self and others to reduce upward social comparisons to other. Fostering humility to support accurate representations of oneself in online spaces.
Fear of Missing Out (“FOMO”)	Fostering gratitude to support appreciation for what one has. Fostering humility to support accurate representations of oneself in online spaces.
Isolation from Friends and Family	Fostering curiosity to support connection with others and relationships.
Privacy	Fostering humility to support appropriate sharing of information about oneself online.

In our view, supporting youth wellbeing is about providing youth with the personal resources to skillfully navigate these spaces. It is also important to recognize that skillfully navigating these spaces is an interaction between a youth’s personal tendencies, reflected in their personality and character, and the affordances of the online spaces themselves, their design and functionality. Micro-interventions might be interventions intentionally designed to promote character development or design features of the technologies themselves that are created to support both the intended functionality while also considering the potential impact on youth character and wellbeing. Successfully creating such micro-interventions will require collaboration across diverse fields including psychologists and technologists and translation from research proof-of-concept to real-world implementation.

2 CONCLUSION

Despite continued media dialogue of the harms that mobile technologies pose for youth, may researchers note that technologies provide opportunities to benefit youth, such as connecting youth with one another, or promoting mental wellbeing [20, 21]. We propose two important shifts to focus on these opportunities to benefit youth. A shift towards integrating recent conceptual models in personality and character formation following WTT and a shift towards considering

interventions as moment-to-moment focused interactions following a micro-intervention approach. We believe these approaches provide useful perspectives in addressing the relationship between teens and mobile technologies. Given these approaches draw from personality psychology and clinical science, they further expand the interdisciplinary considerations to promote cross-sociocultural collaboration in line with the goals of this workshop [18].

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