



Positive Youth Development in the Digital Age: Expanding PYD to Include Digital Settings

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Abstract

Positive Youth Development (PYD) has called attention to the dynamic interactions between youth and settings as critical to their growth and development. In-person settings (e.g., peer, family, school, and community) have been the primary focus of previous research and practice. This chapter introduces the digital setting as salient to today's youth growth and development and argues for the integration of such setting into PYD models, measures, and practices. We first summarize the current literature that predominantly views digital settings from a risk lens. Next, we highlight existing studies to suggest PYD can

and does occur in digital settings. We then make recommendations for adopting a PYD lens to the digital space in order to harness the potential of this space for promoting youth identity exploration, social and emotional skill development, relationship building, self-directed learning, agency, and advocacy. Finally, we conclude with recommendations for research, policy, and practice.

Keywords

Positive youth development · Digital setting · Developmental assets · Adolescence

The authors wrote this chapter prior to the COVID-19 pandemic. As adults and youth alike around the world learn to conduct their personal and professional lives using digital tools, digital settings hold a higher relevance than ever before. Researchers and youth serving individuals and agencies are called to include digital settings at the forefront of their work. We must prioritize understanding and harnessing digital settings as a context for positive youth development.

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A central tenant to Positive Youth Development (PYD) is a focus on the dynamic relation between youth and context. In fact, a distinguishing factor between PYD and other positive development frameworks (e.g., Positive Psychology and Social and Emotional Learning) is the recognition that alignment between context and individual is the key to understanding youth functioning (Tolan, Ross, Arkin, Godine, & Clark, 2016). Thriving, meaning the optimal state or outcome according to the PYD model is obtained through optimizing the transactional relation between youth and existing assets, resources, and contexts (Lerner, von Eye, Lerner, Lewin-Bizan, & Bowers, 2010). PYD research, policy and practice have consid-

ered homes, schools, and communities as contexts critical to youth development. To date, the digital context has not received as much attention, despite this space being central to youth lives. With the rapid adoption of digital media access in developing countries, social media, gaming, social apps, and text messaging are the venue for rapid shifts in opportunity, expectations, and self-understanding (Pew Research Center, 2016; Rahman, Aydin, Haffar, & Nwagbara, 2020).

This chapter seeks to explore the digital context in relation to PYD. As such, and in contrast to the vast majority of research and commentary on youth and digital media as risk laden, we aim to recognize this as a context brimming with opportunity for positive interactions to occur. First, we outline why the digital setting is integral to PYD by providing definitions, reviewing literature on youth accessibility, widespread usage, and integration into everyday life. Next, we summarize the predominant focus of existing empirical support for the negative consequences of digital settings in youth development. Then, we make the case for viewing digital settings from the PYD lens by citing existing empirical evidence to suggest positive development can and is already occurring in the form of learning, building social and emotional skills, fostering and maintaining relationships, and engaging with PYD programs. Finally, we provide suggestions on how to integrate the digital space into PYD frameworks, measurement, and intervention design and delivery. We conclude the chapter with a discussion on implications for research, policy, and practice.

There are several frameworks that researchers, practitioners, and policymakers adopt in the PYD arena. The two most ascribed to and applicable across international contexts (Dimitrova, Buzea, et al., [this volume](#); Dimitrova, Sam, & Ferrer-Wreder, 2021; Wiium & Dimitrova, 2019) are the 5Cs model (Burkhard, Robinson, Murray, & Lerner, 2019; Chen, Wiium, & Dimitrova, 2018, 2019; Fernandes, Fetvadjev, Wiium, & Dimitrova, [this volume](#); Wiium, Ferrer-Wreder, Chen, & Dimitrova, 2019; for an expanded 7Cs model see Abdul Kadir, Mohd, & Dimitrova, [this volume](#);

Dimitrova, Fernandes, et al., [this volume](#); Manrique-Millones, Pineda Marin, Millones-Rivalles, & Dimitrova, [this volume](#)) and the developmental assets model (Benson, Leffert, Scales, & Blyth, 2012; Roehlkepartain & Blyth, 2020). We therefore chose to write this chapter from those perspectives which are more thoroughly outlined in the introductory chapter of this *Handbook* (see Dimitrova & Wiium, [this volume](#)).

The Digital Setting as Part of Modern Youth Development

Today's youth are "digital natives"; they have grown up in the digital age and the use of digital media is intrinsic to them, interwoven in all aspects of their lives. They never had to adapt to a new understanding about how to use the internet, apps, or cell phones. One implication is that digital media is a natural and probably less distinct aspect of life for them than for prior generations. In fact, media access and use is inherent in youth's experience of self-development, family experiences, learning experiences, peer relationships, and connection to the world. Digital spaces are designed to be appealing and intuitive for youth, increasing the likelihood of their seamless involvement between digital and non-digital experiences. Thus, understanding the relation of digital settings and youth development needs to be tracked along two complimentary but distinct lines; how it is to be understood by adults and observers of youth, such as researchers and scholars, and how it is to be understood and experienced by youth.

For this chapter, we note that previous work tends to put media into two categories: old and new. The American Academy of Pediatrics defines old media as "traditional or broadcast media". This includes television, radio, and periodicals. They define new media as "new digital or social media" and this includes social media, video games, and texting. There are clear advantages and disadvantages to new media. A key advantage to new media is that while old media is passively consumed and experienced at times and

in forms dictated by the provider, new media is interactive, engaging, driven by the interests of the consumer, and in some cases, enables collaborative learning, activity, and experiences (Al-Rahmi et al., 2020; Chassiakos, Radesky, Christakis, Moreno, & Cross, 2016). A key disadvantage to new media is that adult supervision and regulation is more difficult. While it is clear that old media affected and was influenced by youth and as such plays a part in PYD, the focus here is on new media as an integral part of PYD.

Studies show that digital media is a context that youth are increasingly accessing, using, and developing in on a daily basis. One of the primary modes of access is now through smart phones (Pew Research Center, 2016). Youth have the ability to be on the internet, on social media, text message, game, and watch media content practically anywhere, at any time, and simultaneously, if they choose. Smart phone access is increasing. As children enter the teenage years, many end up owning their own cell phone, granting them almost unlimited access to digital media. Recent estimates by the American Academy of Pediatrics reported that 75% of teenagers now own their own smart phone (Chassiakos et al., 2016). Worldwide, about 86% of people in advanced economies and 54% in emerging economies own smart phones (Pew Research Center, 2016). Evidence suggests that the age that kids first have access to a smart phone is decreasing. In 2011, only 52% of youth under age 8 had access to a cell phone and that number was up to 75% by 2013 (Lenhart, 2015). The gap of digital media access is narrowing between high and low income youth with recent evidence suggesting that most youth, regardless of economic status, are accessing smart phones. In a study of 350 low income families in the United States, nearly 95% reported that youth under the age of 4 had used a cell phone (Kabali et al., 2015).

With increased access, comes increased usage. Besides sleeping, youth ages 8–18 spend more time using digital media than any other activity in a given day, averaging more than 7 h of use per day (this figure includes television, music/audio, computers, video games, and movies) (Rideout, Foehr, & Roberts, 2010). Some estimates suggest

that youth (ages 8–18) spend about 8 h a day on electronic media, a dramatic increase from the early 2000s and predicted to continue to increase (Rideout et al., 2010). Additionally, some of that time is spent on multiple media tasks at once, termed “digital multi-tasking”, amounting to about 11 h a day in combined exposure (Rideout et al., 2010). In 2012, youth between 14 and 17 sent on average 100 texts per day (Lenhart, 2015). It is reasonable to believe that, nowadays this number is much higher. In the United States, recent estimates suggest that half of youth log onto social media accounts daily (Rideout, 2016) and the majority (81%) interact daily with peers on the internet (Lenhart, 2015). Additionally, 97% of the American youth ages 12–17 report playing video games including computer and online video games, or through handheld or console gaming devices (Jones et al., 2009). Half of the American homes have a dedicated gaming console device and 80% have a digital device that is used to play video games (Entertainment Software Association, 2015). There is evidence to suggest that this phenomenon is occurring worldwide, not just in the United States (Alvarez-Galvez, Salinas-Perez, Montagni, & Salvador-Carulla, 2020; Patriarca, Di Giuseppe, Albano, Marinelli, & Angelillo, 2009; Pew Research Center, 2016; Sala, Gaia, & Cerati, 2020).

In summation, the expansion of the internet and digital media has radically transformed the landscape for adolescent development. This transformation has occurred in a multitude of ways. First, is the breadth and depth of information now accessible? Presently, approximately 58% of the world has internet access and it is rapidly increasing each year (Statistica, 2019). Second, what was once accessible only by the affluent and those in developed economies is now widely available and consumed; shifting boundaries in what information is being obtained and used, how cultures are relating, and how news and history are digested. Third, as media use is more integrated into all aspects of life, the boundaries of experiencing being on media and being “in person” are disintegrating. Fourth, awareness of cultures, life experiences, news, and information that would not have been known by individu-

als even a decade ago flows into daily life continuously. Fifth, digital media exemplifies and probably heightens the extent to which youth shape their development; aligning interests with setting use and dynamically interacting with others. Sixth, in the past, most of media access was through a shared family device, such as the family television, computer, game console, or parents' smart phone. These previous circumstances made it easy for parents to monitor their children's use and promote familial mediation of the experience. However, at this point it may be that digital access without parental mediation is more the norm and familial exchange may be peripheral to youth use. Nowadays, these changes impact daily experience of youth, whether they are utilizing a device at the moment or not.

The salience of such digital space is not reflected in typical ecological models of development and often not addressed in writing about PYD. In part, this is because of the rapid development of digital media and media use. How to conceptualize its role in development is difficult. Moreover, those conceptualizing (adult providers and researchers) are experiencing these shifts and adaptations as external and new in kind as well as extent; which is not necessarily applicable to youth of today. Any attempts to characterize seem to accentuate the limitations of describing youth development apart from engagement of youth voice. Not surprisingly, most research, to date, on internet or social media use tends to look at the association with negative consequences or outcomes to see media use as likely harmful and fraught with risk (Anderson et al., 2010; Boulianne & Theocharis, 2020; Craig et al., 2020).

Negative Consequences of Digital Media for Youth

There is a mainstream message or assumption that use of digital media, particularly direct and frequent use, is problematic, especially for youth. This is apparent in school policies that ban cell phones or other technology use during school hours and parenting philosophies that limit

youth's exposure to television, the internet, cell phones (Kessel, Hardardottir, & Tyrefors, 2020; Naumovska, Jovevski, & Brockova, 2020). For early childhood, these rules and boundaries are fairly universal, but as youth enter adolescence there is a lack of consensus between parents, practitioners, and scholars on the amount and type of media engagement that youth should experience. The research on this topic has yet to catch up with the rapid expansion and access to media.

A primary concern is that increased time spent with digital media (regardless of format) takes away from time that could be spent on other productive activities, such as physical activity/exercise, learning, in-person social interactions, reading, etc. Another concern is that new media has created an easier platform for youth to participate in risky behaviors that are commonplace for adolescence to begin with, such as bullying, risky sexual behavior, peer deviance training, exposure to negative peer norms, access to substances, and so on (Vannucci, Simpson, Gagnon, & Ohannessian, 2020). The stakes for engaging in these risky behaviors on a social media platform may also be higher and have longer lasting detrimental impacts since an image, video, or post can live on forever. In the simplest terms, the digital space creates another context in which youth *can* have difficulties, in addition to the traditional contexts that have long been studied, such as home, school, and community contexts. In fact, related research has coined the term "digital stress" to refer to the added stressors that adolescents experience in digital settings (Steele, Hall, & Christofferson, 2020; White, Weinstein, & Selman, 2018).

There is a body of research to support this negative perception of the impacts of digital media on youth behavior, development, and academic performance. Specifically, media consumption and use have been associated with real concerns, such as cyberbullying. Thus, bullying in digital spaces or cyberbullying has been widely researched (Kircaburun, Demetrovics, Király, & Griffiths, 2020). Findings point to cyberbullying carrying over into in-person behavior and the omnipresence of digital media as particularly dif-

difficult for victims (and perpetrators) and their public interactions (Waasdorp & Bradshaw, 2015; Ybarra, Espelage, & Mitchell, 2007). Digital media use has also been linked to depression, anxiety, and decreased self-esteem and well-being (Martins & Harrison, 2012; Saiphoo, Dahoah Halevi, & Vahedi, 2020; Twenge, 2020). Other studies have demonstrated that exposure to violent media leads to aggressive behaviors (Anderson et al., 2010), desensitization to violence (Carnagey, Anderson, & Bushman, 2007), and decreased prosocial behavior (Anderson & Bushman, 2001; Han & Carlo, 2020). Social media use has also been linked to risky sexual behavior and substance use (Vannucci et al., 2020). Finally, some research has also found that interactions on digital settings can lead to poor language skills (Madigan, McArthur, Anhorn, Eirich, & Christakis, 2020) and academic performance (Liu et al., 2020; Luo, Yeung, & Li, 2020; Sharma & Shukla, 2016).

While decades of research pointed to the potential negative impacts of digital media on youth development and outcomes, emerging literature is offering an alternative perspective. We purport that, like all other settings that historically relied on a deficit model to study youth development, research on the digital setting could benefit from the PYD theoretical lens.

Digital Media as an Avenue for Positive Development

A defining emphasis of the PYD perspective is that youth negotiate and make use of their settings. In fact, it is the proper alignment of youth strengths and assets with supportive and engaging environments that promotes positive development. Bronfenbrenner's ecological model of development highlights key settings for PYD to occur, including home, school, and community (Bronfenbrenner & Morris, 2006). Decades of research have supported these settings as essential to consider in youth research, policy and practice. What makes these settings critical for positive development is (1) their permanence and stability in youth lives, (2) these settings are

innately engaging, interactive, and collaborative, and (3) the interaction between youth and these settings is mutually beneficial (i.e., these settings contribute to youth development and youth contribute to these settings). The review above of the prevalence of digital media in the life of youth makes it likely that youth are engaged in digital settings more often than other settings. While time youth spend at school, home, and other community settings is fixed and perhaps dynamic (not the same from day to day), youth time spent in digital contexts is stable and omnipresent. These characteristics make it important for researchers, policymakers and practitioners to examine such settings through the lens of promoting positive development and potentially delivering PYD interventions. Digital settings should be included in the ecological model of development, along with other guiding PYD frameworks.

Digital media shares many of the same characteristics of traditional PYD settings that make them ideal for positive development to occur (e.g., permanence, engaging, interactive, collaborative, and mutually beneficial). The new opportunities for the 5Cs of competence, confidence, connection, character, and caring and for accessing needed assets to shape one's development positively are increasingly being recognized (Ram Lee & Horlsey, 2017; Umaschi Bers, 2006). There is a good reason to believe that *positive* development can occur in this space and therefore should be explored more robustly (Blumberg, Blades, & Oates, 2013; Reich, Subrahmanyam, & Espinoza, 2012).

Current Understanding of PYD and Digital Spaces

While PYD as a model has not formally acknowledged the digital space as a context, there is some literature to suggest that positive development is possible and already happening in these spaces. Some research has uncovered potential benefits of digital media on adolescent well-being, mainly through increased access to opportunities. These opportunities include learning, building social

and emotional skills, fostering relationships, engaging with PYD programs, and exposure to information, ideas, and other cultures not previously accessible (Beyens, Pouwels, van Driel, Keijsers, & Valkenburg, 2020; Chassiakos et al., 2016; O'Reilly, 2020).

Learning While there is an overarching fear that the use of social media is detrimental to learning and academic performance, research has suggested that there are benefits in addition to studied drawbacks (Wright, 2020). For instance, Badaway and Hashem (2015) delivered surveys to youth ages 12–19 in Egypt inquiring about their internet/social media use and studying habits. The majority (92%) of the sample reported using internet to study. The authors also found no correlation between the number of hours spent on social media and grade point average for the youth in their sample. Other studies have also supported the idea that youth are using social media to access information, engage in self-directed learning, and develop technical skills (Ito et al., 2009; Tartari, 2015; Toh & Kirschner, 2020). In interviews with twenty Albanian youth ages 11–16, Tartari (2015) found that the majority (70%) were using social media to share educational materials and expand on their learning by consulting others on homework problems, watching youtube tutorial videos, and practicing communicating in a foreign language. Ito et al. (2009) wrote a book on youth's use of digital media based on 23 in-depth ethnographic case studies and highlighted their use of digital space for self-directed learning.

Building Social and Emotional Skills Adolescents are using social media networking sites to develop their own social and emotional skills, such as communication, community engagement, and identity development. There is some self-report correlational evidence to suggest that adolescents who spend more time on social media sites have higher social competence (Hygen et al., 2020; Tsitsika et al., 2014) and qualitative data to indicate that youth use social media sites primarily for communication (Tartari, 2015). Text messaging can also support positive youth engage-

ment; the majority of text messages among peers are positive or neutral in nature (Underwood, Ehrenreich, More, Solis, & Brinkley, 2015). Social media provides an avenue for self-expression and can support identity development (Boyd, 2007; Davis, 2012; Kim & Li, 2020; Stern, 2008). In qualitative interviews with 32 adolescents from Bermuda, Davis (2012) found that online interactions promoted two key aspects of identity development, sense of belonging and self-disclosure. Boyd (2007) wrote about youth identity exploration, youth learning expression and social cues on the MySpace platform. While MySpace has lost popularity since this ethnographic study, the findings can be translated to other platforms (e.g., Instagram, Snapchat). Contrary to popular belief, there is support that youth online presentation is much reflective of their "true self" or in-person presentation (George & Odgers, 2015). Boyd's (2007) analyses support this idea; youth today are constructing their identity in a series of negotiations between in-person and online interactions. Youth who struggle with in-person social interactions or have anxiety can compensate in online settings (Glover & Fritsch, 2017; Reich et al., 2012). Social media use can also support empathy development (Blakemore & Agllias, 2020). In a study of 942 Dutch youth, Vossen and Valkenburg (2016) found that social media use was related to increases in empathy (through youth understanding and sharing of others' feelings) over time. These studies support digital media as a context for youth to develop critical social and emotional skills.

Fostering Relationships We also know that adolescents are using social media networking sites to foster peer relationships, including friendships (Lenhart, Purcell, Smith, & Zickuhr, 2010; Thomas, Orme, & Kerrigan, 2020) and romantic relationships (Prinstein, Nesi, & Telzer, 2020; Smahel & Subrahmanyam, 2007). Digital spaces, such as the internet can be used to maintain (Valkenburg, Schouten, & Peter, 2005) and strengthen (Reich et al., 2012; Valkenburg & Peter, 2009) friendships that were created in in-person contexts. Youth join social networking sites in order to maintain existing friendships (Boyd, 2007). In fact, youth who engage with known

peers on social media and who use social media to form new friendships feel less lonely (Teppers, Luyckx, Klimstra, & Goossens, 2014; Yang & Brown, 2013) and closer to their peers (AP-NORC, 2017). Communicating with peers online increases youth sense of belonging (Davis, 2012; Kashy-Rosenbaum & Aizenkot, 2020). Additionally, the rates of communicating with friends via text messaging is skyrocketing; estimates from an American sample indicate that the number of youth who communicate with friends daily via text message and the number of texts sent per day to friends has dramatically increased and continues to climb (Lenhart et al., 2010). Developing and maintaining friendships is a critical component of adolescent development and these studies highlight that digital media is a context that can help support and promote these relationships.

Engaging with PYD Programs A recent study demonstrated how PYD programs can use social media to engage with youth. Ram Lee and Horlsey (2017) used mixed-methods (a series of content analyses on the 4-H PYD study at Tufts University, USA, Facebook page, and seven in-depth interviews with youth users), and found that PYD programs are using social media platforms to communicate with youth directly about their organization and ways for youth to get involved. In fact, the organization they investigated had dramatically increased the number of followers, total posts, and interactions from 2009 to 2013. The 4-H used their Facebook page to educate others about their organization (e.g., the history and mission), communicate information, and solicit involvement. The findings also demonstrated that youth are using social media to interact with PYD programs and peers that they know through PYD programs. Youth reported building connections with the organization and fellow 4-H members through their utilization of the Facebook page. Finally, the findings indicated that social media can foster and encourage civic engagement, a key outcome of the PYD model. The content analyses and interviews showed that traits from the 5Cs model were supported through youth interaction with the PYD program's social media page (Ram Lee & Horlsey, 2017).

Other Opportunities In general, there is evidence to suggest that digital media can have a positive impact on mental health, in addition to the focus of extant literature on the negative impacts (Dienlin & Johannes, 2020; Odgers & Jensen, 2020). Youth self-report of social media impact on their well-being is generally positive, contributing to closeness in relationships, affirming self-expression, inspiring exploration of interests, and overall entertainment; although this relation is complex and can also lead to negative impact on well-being in each of the aforementioned domains (Weinstein, 2018). Additionally, while little empirical work has been done in this area, many researchers have theorized that the globalization of digital media has opened up a realm of possibilities for youth to engage with others from their cultural heritage or engage with people from other cultures (particularly in cases where they live in a homogenous setting) (Hu, Liu, Zhang, & Wang, 2020; Sobre-Denton, 2016). While studies of positive development in digital settings are limited to recent decades, the above reported body of work suggests a need to integrate this empirical work into the PYD theoretical framework.

Viewing Digital Settings as PYD Opportunities

Integrating Digital Experience into PYD Frameworks

There are two main PYD frameworks which identify (1) the 5Cs or (2) a number of developmental assets that are critical to youth development. In order to expand these frameworks to incorporate the digital setting, modifications to existing constructs or the addition of new constructs needs to occur. In the case of the 5Cs model, we contend that modifications to existing constructs would suffice since this framework is not tied to specific settings. However, in the case of the developmental assets model, the addition of new constructs may be necessary since this model is tightly linked to an ecological framework that currently only outlines individual, peer,

family, school, and community as major contexts (Scales, 2011).

The 5Cs model can be expanded by incorporating digital settings and interactions within each C. Youth can develop (1) *Competence* both in carrying out tasks on digital media settings and in interacting with others on these platforms. Youth can develop competence in the direct use of a particular media, such as youth learning coding skills or how to elevate their marketability as an employee using social media platforms. Youth can also develop competence in digital communication by engaging in prosocial interactions with peers via text message or social media; (2) *Confidence* can be expanded to include youth's digital identity as an important component of having a positive internal self-worth. Youth are already naturally curating their online identity by what they choose to post and how they choose to use various digital platforms. There is opportunity to expand on this by helping youth safely use this space for identity exploration and experimentation in a way that might not be possible in in-person settings. We can expand the listed settings that youth can develop to (3) *Connections* and include digital settings in addition to family, school, and community and (4) *Character* development can occur on digital media as we begin to consider social norms and standards of behavior in these settings. An especially interesting component to consider is (5) *Caring* and how we might bring compassion to the digital setting to encourage youth to have empathy for others that they are interacting with, in a space that can often be dehumanizing. As cited earlier, there is already research to support that these skills are being developed on digital spaces (Vossen & Valkenburg, 2016). Additionally, social media is an exceptional tool for broadening the scope of youth efforts to show care for issues that are important to them, for example environmental advocacy, political advocacy, or bringing attention to issues impacting them and their peers that would otherwise not receive media attention. Youth using digital media platforms as a space to amplify their voice is a perfect example of youth *Contribution*, or the 6th C that could be further supported and promoted by adults.

The developmental assets model can be modified by expanding the ecological model to include digital settings and articulate existing assets that are linked to positive developmental outcomes. This overhaul could borrow from available literature, some of which was reviewed in this chapter, to identify assets, such as (1) communicating with existing friends in digital settings; (2) building new friendships for special interests or minority statuses that otherwise are not available to youth in in-person settings; (3) using digital media for self-directed learning activities; (4) reading for pleasure using digital devices; (5) developing a positive digital identity; (6) valuing other cultures and perspectives on digital platforms; (7) using digital spaces to make the world a better place, and (8) getting involved with prosocial activities and organizations online. More research is needed to identify key assets for digital settings; although previous research has suggested that interactions in this space are not equivalent to in-person interactions and thus deserve a more thorough investigation than simply modifying what we currently use to measure in-person assets (e.g., The Transformation Framework; Nesi, Choukas-Bradley, & Prinstein, 2018).

Considerations for PYD Measurement

Modifications to the PYD framework inherently suggest an opportunity to modify PYD measurement. There are two prominent assessments aligned with the aforementioned PYD frameworks – the 5Cs measure (Dimitrova, Buzea, et al., [this volume](#); Dimitrova, Fernandes, et al., [this volume](#); Fernandes et al., [this volume](#); Geldhof et al., 2014; Li, He, & Chen, [this volume](#)) and the Developmental Assets Profile ([DAP]; Dominguez, Wiium, Jackman, & Ferrer-Wreder, [this volume](#); Kabir & Wiium, [this volume](#), Kasic, Wiium, & Dimitrova, [this volume](#); Kozina, Wiium, Gonzalez, & Dimitrova, 2019; Scales, 2011; Scales, Roehlkepartain, & Shramko, 2017; Uka et al., [this volume](#); Wiium & Kozina, [this volume](#)). Currently, no measures have been developed to assess positive develop-

mental processes in digital spaces, but other theoretical frameworks have begun this work. Recently, a measure was developed from the Positive Psychology theoretical orientation to examine flow on social networking sites (Kaur, Dhir, Chen, & Rajala, 2016); others have created a measure of digital citizenship (e.g., ethics for the digital environment, fluency for the digital environment, reasonable activity, identity in the digital world, and social/cultural engagement) via Korean teacher perspectives (Kim & Choi, 2018). This type of work is promising and can be used as a template for developing a similar measure for the PYD model. Modifications to the 5Cs measure would include creating items to mirror the suggested changes to the model discussed in the previous section. Since the 5Cs of PYD measure is not directly linked to contexts, changes to this measure would require expanding each C to understand how those competencies are being promoted in digital spaces.

Modifications to the DAP measure would be more straightforward. The current DAP measures assets in individual, peer, family, school, and community domains. A digital domain could be added and could include items that assess (1) feeling safe on social media sites; (2) having clear rules and expectations on smart phone use; (3) having peers and family watch out for them on digital media platforms; (4) being involved in prosocial activities on digital spaces; (5) engaging with peers and positive programs on digital spaces; (6) using digital media for self-directed learning, homework, and/or academic collaboration, and (7) being involved in social justice, politics, or other advocacy efforts on digital platforms. Additional opportunities for PYD measurement include using social media tracking data to investigate youth use of prevention or intervention materials delivered on the platform to determine access, dosage, or other implementation fidelity questions. Previous qualitative work could also form the basis for survey development that tracks how youth use digital spaces to learn, develop social and emotional skills, foster relationships, and engage in positive youth development activities.

Application to Intervention Design and Delivery

The empirical literature has laid the groundwork for thinking about digital spaces as contexts for positive development to occur; the frontier to this work now lies in developing and delivering PYD interventions specifically for this space. The intervention literature is somewhat lagging behind what is already taking place in educational settings as digital spaces are common tools for academic instruction (Blumberg et al., 2013; Zhu & Mok, 2020). New forms of digital media are brimming with potential; they tend to be more interactive, accessible to a broader audience, a space that youth enjoy and are already engaged in, and can be used to deliver and/or practice educational content.

There are several avenues for the application of digital media to PYD intervention design and delivery. The first is delivering existing interventions through digital modes. Much work is needed in this area. A recent review of health interventions delivered on social media platforms for adolescents shows that these initial efforts have fallen short and none showed significant impacts (Shaw, Mitchell, Welch, & Williamson, 2015). The second, stemming from the empirical support outlined earlier in this chapter, is to gain a clearer understanding on how to capitalize on positive developments that are already occurring in the space and to intentionally use digital media to promote PYD. Research suggests that youth are learning, developing social and emotional skills, building relationships, and practicing civic engagement on digital media without the aid of formalized PYD interventions (Lenhart et al., 2010). This body of literature can inform potential mechanisms for intervention and how to formalize skill building to purposefully foster these skills in the context of a PYD program.

The possibilities for PYD interventions are plentiful, but our review of this literature suggests that the following types of interventions may be a good fit for the digital context and worthy of empirical studies.

1. A safe space for *identity* exploration. Identity exploration has commonly been studied in PYD interventions (Waid & Uhrich, 2020) particularly in out-of-school contexts (Deutsch, 2008). Digital settings, such as social media and gaming offer a lower stakes setting for youth to try out different identities and potentially explore them with more anonymity and fluidity than in in-person contexts. This may be particularly valuable for youth who want or need to explore identities that are less sanctioned or respected. For example, in situations where adolescents (a) cannot find someone among their known peers or adults in their immediate environment with this common identity or (b) do not feel safe exploring this identity in school or home spaces, media may provide positive images of that identity, a community of others with similar concerns and experiences, and more thoughtful and accurate information for use in navigating development. Connecting with like individuals from sexual, racial, religious, or other minority identity groups can help youth to feel less isolated and build prosocial subculture connections; something now possible for any youth with access to social media.
 2. A space for *relationship* building and *social and emotional skill development*. Some research suggests that youth are better able and more willing to communicate intimate information online than offline (Valkenburg & Peter, 2007). A key component to adolescent development is the strengthening of peer relationships, including friendships and romantic connections. Intimacy building is difficult in contexts that are full of alternative demands as well as peer and adult influence, such as schools, homes, and after school spaces. Text messaging, group messaging, social media interactions, and other forms of digital communication can be less intimidating and can build and strengthen important relationships for youth. Youth are able to stay connected with friends during times when peer relationships traditionally struggled or dissipated, such as during summer break, after the completion of a PYD program, or when a family relocates. Digital media has changed the landscape for adolescent romantic relationships and sexual behavior. These modes of communication make potential partners more accessible and for the development of relationships to occur more rapidly. This constant connection is also fraught with challenges; social media platforms create a “digital display” of friendships and romantic relationships for peers to view, comment on, and potentially influence. These new facets of intimacy and relationships may be an area where youth need additional support to navigate.
 3. A space for youth *agency* and *advocacy*. Digital settings offer an avenue for youth to feel empowered and active agents within the global community (Boulianne & Theocharis, 2020; Leong, Pan, Bahri, & Fauzi, 2018). In fact, youth tend to be more efficient and savvy users of these spaces than adults (Chassiakos et al., 2016). Youth can get their voices heard by a broader audience for issues that are important to them via “digital activism” (Carty & Barron, 2018). A primary example of this is the youth who came forward to promote gun safety awareness after the Parkland, Florida shooting (Bettencourt, 2018). Using social media platforms, Parkland youth organized and gained international attention for a National School Walk Out on March 14, 2018 and a protest in Washington, DC March for Our Lives on March 24, 2018.
- There is a link between political engagement and social media activism; also positive experiences of social media activism are related to positive political efficacy (Bowyer & Kahne, 2020; Velasquez & LaRose, 2015). This type of activity exemplifies the “contribution” or civic engagement area within PYD and is one that could be harnessed and supported by adults in an intervention setting. Additionally, youth have access to information via digital spaces and can be agents in their own development, choosing which spaces to engage in and honing in on skills they cannot learn in classroom settings (e.g., through youtube tutorials).

Key Considerations for PYD Interventions in Digital Spaces

There are some characteristics of digital spaces that require practitioners and researchers to think critically about how to safely deliver PYD interventions. Evidence suggests that media literacy lessons are effective in teaching youth to be skeptical consumers of media content (Austin, Chen, Pinkleton, & Johnson, 2006; Stanley & Lawson, 2020). It is common for school-based interventions to begin by having youth establish ground rules to create a safe and productive space. The same concept could be applied to interventions delivered in digital settings. Youth could explore how to create a safe and positive space for engaging, whether through text messaging, social media apps, or gaming communication platforms. Youth should be encouraged to critically analyze media content and reflect on the messages in relation to their own values. Further, interventions could help youth understand their brains in relation to social media. Topics, such as understanding the instant reward when someone likes your post online; why youth seek out peer approval and how that may be amplified on digital spaces with a broader peer audience; how social media can perpetuate youth's bias towards thinking peers are engaging in maladaptive or risky behaviors (e.g., substance use, sexual behaviors, etc.) and how online interactions transform peer relationships (Nesi et al., 2018) need further exploration.

Existing PYD interventions may not be interested in adapting their intervention for digital spaces, but may benefit from creating access and information for their program through digital media (Ram Lee & Hurlsey, 2017). In fact, most youth serving agencies now have websites and social media accounts to promote their material or provide information to existing users. As outlined earlier in this chapter, the permanence of digital media in the everyday life of youth calls all youth serving agencies to rise to this reality and provide an up to date and appealing digital space for youth that is easily accessible and navigable. It is up to these agencies to continue to engage with youth users in the spaces that they

are most often, even as that changes from year to year. Having youth help create these resources makes it more likely that youth will engage themselves (Banerjee & Greene, 2006). In conclusion, whether PYD programs choose digital spaces as a primary mode of delivery or not, they are still called to navigate these spaces in order to reach the youth that they serve.

Implications for Research, Policy and Practice

The major implication for research highlighted by this chapter is the need to integrate the digital space in empirical studies of PYD. We posit that due to the relative newness in the literature, extent mixed-methods work is needed to delve into and construct informed models of how youth experience digital media including how they bound that experience from other in-person experiences. In particular, it seems valuable to characterize well and with adequate diversity and detail, how youth utilize digital media for personal development, goals, support, contribution and other positive youth development features.

As to policy, the major constraint is the newness of this topic as a developmental consideration and the limited appreciation for the PYD approach as advantageous. Most fundamentally, policies need to be informed by youth developmental needs, balancing youth agency and autonomy with deterring risky or maladaptive behavior in digital settings, as with all other settings in the ecological model. At a societal level, there is a need for attention to responsibilities of media producers, educators, civic leaders, and parents in helping youth with managing media; in terms of managing access, content, or more specifically navigating personal presentation and interpersonal relationships in these spaces. At a local level, those working with youth, justice and child welfare and health professionals, educational professionals and institutions, and parents and neighborhoods will inevitably face issues of management of digital media and of increasing integration into the personhood and the social experience of youth. Each will need to formulate

policies about how to help youth manage this fundamental change in development and how personnel and regulations should be affected. In many ways, the competing tensions in policy formulation and regulation practices will not be new; helping support positive development while also helping protect youth from harm applies to many other issues and concerns. However, digital use is exceptional and perhaps unique in how complex and rapidly shifting, and in how it is experienced by youth as pervasive and integrated into all aspects of youth experience. It certainly means that it is premature suggesting certain policies that are preferable or more soundly based than others at this juncture.

As to practice, this chapter promotes actions related to digital media to shift from predominance of fear and risk focused efforts to promote adult and youth literacy and orient towards harnessing digital media as a potentially powerful positive youth development tool. Most immediately, this may mean guidance for parents on understanding how youth engage in digital media and promoting communication between parents and adolescents about optimizing such use. In many ways, this would look very similar to how parents talk with and help youth manage other settings, such as schools or neighborhoods. This would include setting boundaries and expectations, while providing guidance on navigating interpersonal relationships, goal settings, and other PYD tenants in these settings. Similarly, mental and physical health care could be enhanced through use of digital media, particularly if informed by a PYD perspective to frame the engagement as enabling youth aspiration, realization, and management of emotional and social challenges. Lastly, there is a great need to formulate expected practices for purveyors of media based on youth developmental needs and capabilities. It seems that those developing applications and media outlets have a vested interest in understanding youth development but also a societal responsibility to attend to vulnerabilities due to age. Sound practice may have to be formulated with limited empirical basis with the intent to modify as such information is accumulated.

In conclusion, youth and digital media are one of the most rapidly developing areas of attention in scholarship, policy, and practice formulation in social science. While previous work has focused on the detrimental impacts that digital media has on youth development, empirical findings suggest that youth are using digital spaces for positive developmental activities, such as self-directed learning, identity development, social and emotional skill development, and relationship building. Furthermore, there is budding support that digital spaces are positive avenues for civic engagement and amplifiers for youth-centric political movements (Bean & Dunkerly-Bean, 2020; Mihailidis, 2020). Policies and practices should emanate from these findings and support youth positive use of digital spaces. Positive youth development offers an optimal lens for approaching this burgeoning focus and for helping align the seismic shifts in understanding of youth activity and engagement in the digital context and the impact on thriving. Overall, our conclusion is that this is an area of great need and relevance to explore with research, to consider in practice and to integrate into youth policy. We expect that in the next decade there will be a rapid growth in the number of studies attending to youth and digital media and a seismic shift in how naturally and substantially it is considered in research, policy and practice related to youth.

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