HOW PRINCIPALS CAN FACILITATE TEACHER TECHNOLOGY USE IN THE AGE OF
PROBLEMATIC ADOLESCENT SOCIAL MEDIA USE

by

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How Principals Can Facilitate Teacher Technology Use in the Age of Problematic

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Abstract

Problematic adolescent social media use is becoming more pronounced both in society and in schools. Research has made it evident that adolescents are the most active and vulnerable age group on social media. This capstone study will review insecure attachment and how lack of parental attention, online peer relationships, Fear of Missing Out (FoMO), and family conflict due to adolescent social media use encourage problematic social media use from an attachment systems perspective. In addition, researchers have identified that principals are responsible for facilitating the school-based community with the appropriate skills to encourage and sustain proper school-based technology use by facilitating teacher technology use. This capstone study provides a review of literature related to how principals can facilitate teacher technology use through leadership practices that have been shown to enhance and sustain a school's culture. Finally, recommendations are provided for principals to use to facilitate the growth of teacher technology use by understanding digital literacy; along with the role of the principal; enhancing and sustaining a positive digital culture, and the role of social media-driven professional development.

Key words: Principal, facilitating technology, adolescent social media use

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Leadership in The Age of Problematic Adolescent Social Media Use

Chapter 1: Introduction

Introduction

Problematic adolescent social media is becoming more prevalent in today's society and schools. Problematic smartphone use is defined as an "inability to regulate one's use of the smartphone, which eventually involves negative consequences in daily life" (Coskun & Karayagız Muslu, 2019, p. 1004). Continuous Social Media Use (SMU) by adolescents is an issue of concern due to its negative impact on adolescent mental health and life satisfaction (Boer et al., 2021). According to Harwood et al. (2014), social networking websites have been described as addiction-prone technologies that hold the potential for maladaptive psychological and pathological dependency through strong habit formation.

From a parental and educator perspective, the social media landscape is constantly changing, and there is no clear consensus on what impact social media is having on an adolescent's life (DeLay, 2020). Research is indicating that adolescent SMU can be a central issue for families. Information and Communication Technologies (ICTs) are changing the way people behave and relate to each other (Procentese et al., 2019). Consequently, in a school setting, for a principal to facilitate educator technology use, they must develop a strategic plan and vision that provides access to digital tools and creates a culture that supports innovation, inspiring students to learn and achieve (Domeny, 2017).

Background to the Problem

As our dependence on smart devices increases, face-to-face and phone-based conversations for adolescents have shifted to social media applications, and since the advent of

social media, adolescents have increased their SMU through the availability of smartphones (DeLay, 2020). Smartphones and SMU have come to play an essential part in an adolescent's life since much of their social life happens on their smartphone (Allaby & Shannon, 2020). According to Marino et al. (2019), adolescents are considered the most active and vulnerable age group on social media to experience possible negative consequences of Social Networking Site (SNS) use.

Problematic adolescent SMU can arise during adolescence, since it is a time when an individual experiences the construction of personal identity through novel experiences and new technologies play an important point of interest to adolescents' by allowing them to freely explore the wider world and promote social relationships (Trumello et al., 2018). As a result, parents are worried about its heavy use and adverse effects on their child's cognitive and social development and family relationships (Matthes et al., 2021). Intense SMU is driven by the *Fear of Missing Out* (FoMO), and FoMO is driven by the social need to belong (Dogan, 2019). Therefore, FoMO typically happens in situations involving friends, especially when a social event is missed where an individual's friends are expected to enjoy it (Dogan, 2019).

From a school-based leadership perspective, there is currently a learning gap between the school classroom and the world the student lives in outside of the school setting, and as a result, many students are bored (Domeny, 2017). To use technology effectively, children and adolescents need to have digital literacy skills since they are necessary to accomplish various tasks within the digital setting. Having good digital literacy skills will allow adolescents to function successfully in the digital environment (Hosseini, 2018). Therefore, innovative and sophisticated classroom teaching practices are required if students are to become digitally literate (Hosseini, 2018).

In order to shift teachers' mindsets on utilizing technology in the classroom, the principal must understand that students today are wired differently, and this is due to technology's influence outside of the school setting (Domeny, 2017). Technology can make learning endless through access to information, and today's principals and teachers must reimagine how they will adapt and change their instructional practices (Domeny, 2017). With the rapid growth of the digital age, professional development in the form of examining social media and the impact on students is a key to success for educators (England, 2018).

Statement of the Issue/Problem

Alberta Education's *Leadership Quality Standard* (LQS) makes it evident that all leaders employed by the school authority are expected to follow the LQS throughout their careers and are responsible for demonstrating all its competencies (Alberta Education, 2018). Furthermore, principals are responsible for creating a culture and environment that exhibits technology's safe and ethical use (Alberta Education, 2018). Utilizing technology in the school-based community encourages principals and teachers to be at the epicenter of their practice (England, 2018). Since principals are instructional leaders, they must continuously work with staff to create a continuous culture of learning (England, 2018) as they are responsible for providing instructional leadership in the school (Alberta Education, 2018).

However, the principal must understand their role as instructional technology leaders if they are to move the school in a positive direction for the future (Domeny, 2017). Therefore, the principal must facilitate appropriate access to technology with a variety of technologies that support learning for all students by engaging with teachers, other leaders, and principals to build their professional expertise and capacities (Alberta Education, 2018). The problem lies in

principals not receiving formal training on how to facilitate educator technology use in a school setting.

Purpose of the Study

With the rise in student technology use, educators and principals face new challenges in developing and fostering the skills needed for students to be successful in a twenty-first-century global society (Domeny, 2017). The purpose of this capstone study is to support principals in building capacity for knowledge and application to lead in the digital school learning environment. By understanding and utilizing digital leadership practices, the principal can help teachers become more effective in teaching and assisting students on the proper technology use, such as smartphones, so teachers can enhance their technology skills as well as the skills students will need in their future.

Research Questions

The focus of this capstone study is to address the following questions:

1. How is adolescent problematic social media use encouraging an insecure attachment to their parents?

2. How is a Fear of Missing Out creating and driving problematic social media use with adolescents and creating family conflict?

3. How can principals facilitate educator technology use to enhance student and teacher learning?

Significance of the Study

The introduction of smartphones in 2007 changed the possibilities of connection and communication in comparison to a cell phone (DeLay, 2020). Smartphones provide users with convenience, and increased application and internet access on a device that has the same

capabilities as a computer, tablet, or laptop on a daily basis (DeLay, 2020). For today's adolescents, social media is a versatile tool that offers a wide range of functions and applications that make it an engaging and an indispensable part of an adolescent's everyday life (Throuvala et al., 2019).

Adolescents list multiple reasons for using social media, such as entertainment, information seeking, need for popularity, identity formation, validation, social relationship formation, and conforming to group norms (Throuvala et al., 2019). Growing bodies of research provide evidence on how excessive SMU is causing depression, anxiety, and stress (Throuvala et al., 2019). Furthermore, problematic social media use (PSMU) encourages an insecure attachment to parents during adolescence due to the adolescent's desire for autonomy and independence from their parents (Ballarotto et al., 2018). Conversely, when adolescents have independence but cannot be included in person or online, they experience FoMO. FoMO is driven by the social need to belong, and it mainly occurs in situations involving friends, especially when a social event is missed where an individual's friends are expected to enjoy (Dogan, 2019).

As a Grade 5 teacher, I see adolescent social networking site use increasing on a yearly basis. This capstone study provides a framework on why today's adolescents exhibit a high susceptibility for PSMU. Moreover, this study allowed me to increase my own awareness regarding the precipitating factors that cause problematic adolescent SMU. This capstone study will underscore the vital role a principal plays in creating a digital culture by providing digital leadership at their school. Additionally, this capstone study will highlight how a principal must develop a strategic plan and vision that provides access to digital tools and creates a culture that supports innovation and inspires students to learn and achieve (Domeny, 2017).

Scope of Study

This capstone study examines the negative impacts of PSMU and FoMO on adolescent sociocultural development and family attachment systems.

Summary

Adolescents list multiple reasons for using social media, such as entertainment, information seeking, need for popularity, identity formation, validation, social relationship formation, and conforming to group norms (Throuvala et al., 2019). Technology has become integrated into every aspect of the daily life of adolescents through computer games, mobile/smartphones, and social media (Coskun & Karayagız Muslu, 2019). PSMU encourages an insecure attachment to parents during adolescents due to the adolescent desire for autonomy and independence from their parents (Ballarotto et al., 2018). Excessive duration and use, coupled with an individual's lack of control over their smartphone, are listed as major causes of problematic smartphone use (Coskun & Karayagız Muslu, 2019). Currently, there is often a learning gap between the school classroom and the world some students live in outside of the school setting, and because of this, teachers and educators have an important role in fostering and developing students' twenty-first-century skills (Domeny, 2017).

Principals are responsible for creating a culture and environment that exhibits the safe and ethical use of technology (Alberta Education, 2018). And since principals are instructional leaders, they must continuously work with staff in creating a continuous culture of learning (England, 2018) since they are responsible for providing instructional leadership in the school (Alberta Education, 2020). In order to get principals and educators to enhance their knowledge of digital technology, they must seek professional development (England, 2018). Therefore, the principal must facilitate the appropriate access to technology with a variety of technologies that

support learning by engaging with teachers (Alberta Education, 2018) through personalized,

technology-based professional development (England, 2018).

Outline of the Remainder of the Paper

      Chapter 2 of this capstone study is a review of literature regarding problematic adolescent

SMU and how its use encourages an insecure attachment with their parents. Chapter 2 examines

how lack of parental attention caused from mobile device use, peer relationships and social

media increase FoMO and drives an adolescents' Problematic Social Media Use (PSMU).

Chapter 2 also examines how principals can facilitate educator technology use to enhance school

culture. Finally, Chapter 3 provides recommendations on how principals can strengthen their

professional knowledge and skills while facilitating and supporting teachers by creating a digital

learning culture within a school. The recommendations clearly define tangible ideas for

principals to facilitate teacher technology use.

Chapter 2: Literature Review

Introduction

Currently, the internet and social media are an inevitable part of our lives (Demircioğlu & Köse, 2021). According to Nesi et al. (2018) in a study that utilized 1,060 American adolescents, 92% of those adolescents were found to be online daily, 88% had a cell phone, 89% belonged to one SNS, and sent between 20 to 80 text messages a day. It is becoming evident that smartphones and SMU play an essential part in adolescents' lives since much of their social life happens on their smartphones (Allaby & Shannon, 2020). However, it is important to note that there are still technology disparities between socioeconomic groups. In one study that surveyed 2,658 American adolescents, it was discovered that only 51% of adolescents whose parents make less than $35,000 dollars have their own smartphone in comparison to 78% of adolescents whose parents make $100,000 a year (Common Sense Media, 2015). According to Delay (2020), "smartphones, along with other mobile devices are the primary impetus of teenagers' internet use, as well as how they communicate, obtain, and share information" (p.14). Because of its continuous and growing use, the most significant impact affecting schools has been students' ubiquitous use of SNSs and cellphones within the classroom (Smale & Hill, 2016).

Consequently, today's school principals face a different set of challenges (Domeny, 2017; Ilomäki & Lakkala, 2018), and one of those significant challenges is infusing student technology, such as smartphone use into their teaching practices (Ilomäki & Lakkala, 2018; Ugur & Koç, 2019;). To encourage teachers to embrace positive technology use, principals must engage with teachers to build their personal capacities and professional expertise with technology (Alberta Education, 2018; Polega et al., 2019). Through a review of current research-based literature, the

problem this capstone study seeks to understand is how can a principal facilitate teacher technology use to enhance student learning.

Currently, there is a learning gap between the school classroom and the world the student lives in outside of the school setting (Domeny, 2017). To lead teachers and students in the digital era, school principals need to develop digital leadership skills and understand the role of digital leadership on technology use by teachers (Domeny, 2017). Therefore, for principals to understand the importance of school-based technology use, this literature review focuses on three key areas. The first section of Chapter 2 focuses on how excessive and unsupervised technology use in today's homes can create insecure child-parent attachments (Ballarotto et al., 2018; Reiner et al., 2017). Attachment issues, a lack of parental involvement, and adolescent deemed necessary peer relationships encourage problematic smartphone use in adolescents.

In the second section of Chapter 2, the research-based literature will explain how a lack of parental attention through mobile devices, peer relationships and social media increase FoMO and drives an adolescents' Problematic Social Media Use (PSMU). In addition, the second section of Chapter 2 will examine how adolescent technology use creates family conflict in adolescents because adolescent media use is an area of familial frustration and conflict (Beyens & Beullens, 2017; Procentese et al., 2019; Matthes et al., 2021). Family conflict and frustration occurs when parents try to control their adolescents' media use, when adolescents want privacy while using social media (Beyens & Beullens, 2017; Matthes et al., 2021). From a school perspective, students abundant use of SNSs and smartphones within the classroom is having a significant impact on schools (Smale & Hill, 2016). In order for principals to encourage teachers to embrace proper technology use, they must engage with teachers to build their personal and professional expertise and capacities (Alberta Education, 2018; Polega et al., 2019). Therefore,

the third section of Chapter 2 is an examination of how principals can facilitate educator

technology use to encourage teacher and student learning.

Definition of Terms

Adolescent – "Any person between the ages of 10 – 19" (World Health Organization, n.d.).

Digital Divide - "Disparities in access to hardware and software resources and tools" (Hosseini,

2018, p. xi).

Digital Literacy - "Operational, information-processing, and social skills needed to be successful

in digitized settings" (Hosseini, 2018, p. xi).

Digital Parenting - " . . . [P]arents' regulation of children's relationships with digital media (i.e.,

parental mediation) and parents' incorporation of media in their parenting practices" (Matthes et

al., 2021, p. 2).

Excessive Smartphone Use - " . . . [A]n overly high cognitive, emotional, and behavioral

involvement with the smartphone" (Matthes et al., 2021, p. 2)

FoMO (Fear of Missing Out) – "The need to stay continuously connected with others due to fear

caused by others experiencing rewarding experiences in one's absence (Barry et al., 2017).

Information and Communications Technologies (ICTs) – Includes any type of medium to record

and broadcast information, and any technology for communicating through sound, voice or

image (IGI Global, n.d.).

Parent-child Conflict – "Children's non-compliance to parents' instructions, children's resistance

to parents' intrusiveness, as well as parents' resistance to requests made by children" (Beyens &

Beullens, 2017, p. 2077).

Parental Monitoring - "Parents' tracking of children's online activities and is often thought by

parents to be an effective way to prevent their child's PMPU" (Fu et al., 2020, p. 1-2).

Phubbing – " . . . [T]he act of interrupting ongoing in-person conversations or ignoring other people who are present to interact with one's mobile device" (Hong et al., 2019, p.1).

Problematic Smart Phone Use (PMSU) - " . . . [T]he inability to regulate one's use of the smartphone, which eventually involves negative consequences in daily life" (Coskun & Karayagız Muslu, 2019, p. 1004).

School-based Community - Includes principals, vice principals, staff, and students.

Social Media Addiction (SMA) - An individual's inability to control their social media use to a point where it interferes with their daily life (Demircioğlu & Köse, 2021).

Social Media - "[O]perationally defined as the sum of blogs, social networking sites (i.e., Facebook), micro blogs (i.e., Twitter), content sharing sites (i.e., Instagram, Snapchat), Wikis, and interactive video-gaming sites (i.e., Massive Multiplayer Online Games, e.g., World of Warcraft) that allow users to co-construct and share content" (Throuvala et al., 2019, p. 164).

Social Networking Site (SNS) - "[C]onstitute a new social milieu for adolescents that provide numerous opportunities and ways for diverse interaction" (Throuvala et al., 2019, p. 164).

Social Rejection - The perception of a deliberate exclusion or shunning from a social interaction that generates feelings of being devalued" (Perna, 2020, p. 6).

Teacher leader – "Teachers who take on roles and responsibilities beyond the classroom, either formally or informally, and are influential in improving educational practice are considered teacher leaders" (May, 2017, p. 13).

Concerns in a Digital Culture

Leading a learning community requires principals to create an environment that ensures the safe and ethical use of technology (Alberta Education, 2018; Smale & Hill, 2016; Ugur & Koç, 2019). For principals to facilitate teacher technology use and sustain a school's culture in,

the principal must ensure the school-based community is utilizing technology properly because, like any tool, technology can be misused (Smale & Hill, 2016). In addition, to get teachers to shift their mindset on utilizing technology in the classroom, the principal must understand that students today are wired differently, and this is due to technology's influence outside of the school setting (Domeny, 2017). "With the use of technology, principals and teachers can be at the epicenter of their practice and professional development" (England, 2018, p.4). Therefore, the first section of this literature review draws attention to three areas on how adolescents' shifting attachments are contributing to their PSMU by exploring: (a) attachment theory, (b) lack of parental attention, (c) and the influence of peer relationships on social media use.

Attachment Theory

To have a better understanding of how social media is shifting attachment from an adolescents' parents to their peers and social media, it is essential to understand where the term came from and how it is being understood and used today. By extracting concepts from psychology, ethology, psychoanalysts, information processing, cybernetics, developmental psychology, John Bowlby formulated the basic principles of attachment theory (Cavalier, 2019; Bretherton, 1992; Nicolas, 2020). Bowlby formed the basic principles of attachment by displaying the attachment a child has to their mother (Bretherton, 1992; Kiezer et al., 2019). According to Bretherton (1992), Ainsworth's work made it possible to empirically test Bowlby's work and shift attachment theory to the term it is known as today. Attachment theory provides structure to understand how people develop enduring emotional connections to primary caregivers and provides a template for future social interactions and relationship development skills later in life (Fletcher & Gallichan, 2016; Marino et al., 2019).

Attachment is formed through early interactions between primary caregivers and infants, and assists in forming an infant's ideas of social interactions and their internal model of self (Liu

& Ma, 2019; Demircioğlu & Köse, 2021). According to Lui & Ma (2019) and Schimmenti et al. (2014), if an adult is perceived as trustworthy, accessible, and responsive, the infant will develop a secure attachment. Conversely, if an adult is unresponsive, unavailable, or inconsistent, it can give rise to an insecure attachment (Liu & Ma, 2019; McDaniel 2019). An anxious attachment style is characterized by a constant need to seek comfort and support (Liu & Ma, 2019; Schimmenti et al., 2014). Attachment anxiety develops when a caregiver cannot engage in responsive, consistent, or sensitive infant interactions (Liu & Ma, 2019).

Through research, Marino et al. (2019) and Monacis et al. (2017) discovered that individuals who have a secure attachment are better protected against addictive online behaviours towards online gaming, social networking, and the internet. Individuals who display the need for approval (e.g., anxious attachment style) show excessive efforts for acceptance and dependence from others and are more likely to use technologies to obtain positive feedback or approval (Reiner et al., 2017), therefore placing themselves at risk for addiction (Monacis et al., 2017; Schimmenti et al., 2014). In addition, Davis (2017) found that adolescent use of social media technologies can be perceived as an attachment object, therefore influencing the adolescents' social and emotional development in a way similar to a child-parent attachment. As a result, individuals with high levels of attachment anxiety have a higher susceptibility for spending more time on SNSs and use SNSs when feeling negative emotions (Liu & Ma, 2019; Marino et al., 2019).

During adolescence, individuals who experience threats to safety within their attachment system will return to their secure base for intimate and close relationships (Cavalier, 2019; Davis, 2017; Schimmenti et al., 2014). de Vries et al. (2016) and Marino et al. (2019) found children internalize both secure and insecure relationship patterns with caregivers. As a result,

children's learned patterns influence how they interact with their environment (Hong et al., 2019); therefore, having attachment security with one's parent aids in cognitive skills, such as memory, comprehension, and social understanding (de Vries et al., 2016). "The fulfillment of attachment needs provides a secure base for individuals to explore and adapt to the environment: the size and types of figures included in the attachment hierarchy influence the fulfillment of attachment needs, which impact well-being" (Cavalier, 2019, p. 4). Cavalier (2019) discovered that during different developmental stages and circumstances, individuals adjust their attachment hierarchy by adapting to their environment; this includes eliminating or transferring attachment functions to different figures throughout their lifespan.

According to Ante-Contreras (2016), excessive social media use may disrupt the many necessary communication processes which facilitate in creating a strong bond between a child and their parent. Hong et al. (2019) and Kushlev and Dunne (2019) found smartphone use undermines the social connection with their child during non-digital activities such as outings. Also, many of today's parents misunderstand that some adolescents' online lives are an extension of their offline lives, which creates a disconnect on how they participate in the online world together (Davis, 2017).

Lack of Parental Attention Through Mobile Devices

According to Trumello et al. (2018) "[a]dolescence is known to be a period of major transformations in psychological and bodily aspects, openness to new experiences, and construction of a personal identity" (p.1). New technologies play an important point of interest to adolescents by allowing them to freely explore the wider world and promote social relationships (Trumello et al., 2018). According to Allaby & Shannon (2020) and Nesi et al. (2018),

adolescence is when individuals establish and maintain more complex relationships while striving for autonomy from adults.

Currently, many family interactions are shaped by technology and its use in today's homes, and as such technologies as devices can create family bonds over shared technology. However, these same devices can interfere with child-parent time (Ante-Contreras, 2016; McDaniel, 2019). For example, through research, McDaniel (2019) discovered that 73% of parents engage in smartphone use while spending time with their children at a restaurant, and 65% of mothers reported that technology interrupted parent-child interactions during playtime. Everyday interruptions from technology impact parenting quality (McDaniel 2019; Nicolas, 2020; Procentese et al., 2019). Hong et al. (2019) named these technology interruptions "phubbing" and through empirical research found that phubbing is becoming more common in today's society, and discovered through reviewing empirical research that 35% of parents reported frequently using their smartphones while interacting with their children. Furthermore, parents have difficulty switching their attention from their screen to the adolescent (Nicolas, 2020; Procentese et al., 2019). As a result, parental use of mobile devices displaces time spent with their adolescent and is linked to less verbal interactions and warmth (McDaniel, 2019; Nicolas, 2020). Additionally, parents may become harsh toward their adolescent due to the emotional engagement the content provides them (Nicolas, 2020).

Nicolas (2020) found when coupled with time, interference from social media led to unsatisfying interactions between family members, resulting in parents not connecting and being as sensitive to their adolescent and their needs, thereby compromising their attachment quality. Moreover, parental social media use can create low self-esteem in their adolescent when the parents used social media during face-to-face parent-child interactions (Ballarotto et al., 2018;

Matthes et al., 2021). Researchers believed the possible reason for this may be related to the adolescent and smartphone competing for their parent's attention, which causes parents to not pay sufficient attention to their adolescent, especially if the parent displays social media use problems (Matthes et al., 2021).

"The family environment, which is one of the two important ecological microsystems for adolescents, and has been found to influence individuals' thoughts, feelings, and actions" (Hong et al., 2019, p. 2). When parents phub their adolescent, it negatively affects the parent-adolescent relationship (Procentese et al., 2019) and increased the susceptibility toward the adolescent developing problematic smartphone use (Coskun & Karayagız Muslu, 2019; Hong et al.,2019). Hong et al. (2019) further argued that through phubbing, the adolescent may perceive parental smartphone use as the parent psychologically distancing themselves while being physically present, therefore, increasing the adolescent's perception of being ignored, thus damaging the parent-adolescent relationship. Hong et al. (2019) also stated that during experimental studies, just the presence of a smartphone during face-to-face conversations reduced interpersonal connectedness and relationship satisfaction.

Individuals who feel dissatisfied with their relationships are likely to use social media more frequently, as its use provides the social support and emotional compensation they need (Coskun & Karayagız Muslu, 2019; Demircioğlu & Köse, 2021). As a result, individuals with low relationship satisfaction compensate for their feelings by extensively using social media (Boer et al., 2021; Demircioğlu & Köse, 2021). Davis (2017) found that adolescents use social media technologies (SMTs) to connect with friends and spend less time engaging with their family, although still viewing their family as important. However, during adolescence, time spent

with family decreases as time with their peers drastically increases (Baytemir, 2016; Throuvala et al., 2019).

Peer Relationships and Social Media Use

According to Nesi et al. (2021), about 97% of youth reported they use some form of social media, with 70% of those same youth reporting they use social media numerous times per day. Currently, youth are turning to social media as the primary means of peer interaction (Ballarotto et al., 2018; Nesi et al., 2018; Nesi et al., 2021). During adolescence, the need to belong and be accepted by peers becomes significant since adolescents display stronger sensitivity to social rejection due to the importance of forming and maintaining friendships (Allaby & Shannon, 2020; Throuvala et al., 2019). Allaby and Shannon (2020) and Monacis et al., (2017) further stated that adolescence is accompanied by intense emotions caused by the primary developmental task of identity formation, where adolescents seek feedback from and compare themselves to their peers both in-person and online. As a result, adolescents become attuned to peer-perceived popularity, social evaluative concerns, and peer feedback (Allaby & Shannon, 2020; Monacis et al., 2017), with youth valuing popularity over likeability (Nesi et al., 2021). In addition, it was found that age and intense SNS use encourage further SNS use (Throuvala et al., 2019). It was further found that parent-adolescent relationships deficient in self-regulation skills exhibited a strong correlation to adolescents spending more time on SNSs for identity formation (Throuvala et al., 2019). In other words, adolescent development is related to social media usage through adolescents clarifying themselves to others (Throuvala et al., 2019).

Adolescent social media use has transformed their peer experiences by creating new opportunities for compensatory behaviours (online only behaviours) and amplified interaction

intensity and frequency from an online socialization context (Nesi et al., 2021; Reiner et al., 2017). Social media is appealing to adolescents because it provides constant opportunities to stay connected with friends and bring many traditional peer-driven developmental tasks online (Domeny, 2017; Nesi et al., 2018). For example, social media encourages peer attachment by allowing adolescents to broadcast their interests, identities, and different aspects of their personalities by positing images and text (Nesi et al., 2018; Throuvala et al., 2019). In addition, research found that adolescents use SNSs to communicate with their peers, self-assertion, social support, belonging, and popularity (Coskun & Karayagız Muslu, 2019; Domeny, 2017; Nesi et al., 2018). Consequently, adolescents use social media because they do not want to be socially excluded, therefore developing a FoMO (Barry et al., 2017; Coskun & Karayagız Muslu, 2019; Dogan, 2019).

Adolescents and FoMO

According to Allaby and Shannon (2020) and Reyes et al. (2018), the growth of the internet and social media appears to be affecting how people live their lives. For example, at public gatherings, most people use their smartphones instead of engaging in face-to-face conversations (Reyes et al., 2018). FoMO is experienced by people through SNSs, because through SNSs it is easier than ever to be aware of the sociocultural experiences one is missing out on (Coskun & Karayagız Muslu, 2019; Dogan, 2019; Milyavskaya et al., 2018). In addition, social media is used by adolescents to counteract boredom and act as a filler between activities (Allaby & Shannon, 2020; Throuvala et al., 2019). Currently, the social media applications adolescents seem to prefer to use are Snapchat, Instagram, and YouTube (Anderson & Jiang, 2018; Boer et al., 2021; Throuvala et al., 2019). Adolescents consider Snapchat to be an "inner circle" platform, which allows them to communicate with others regarding personal matters

(Throuvala et al., 2019). Instagram is considered the most popular social media application that allows users to present and share self-generated content (Throuvala et al., 2019). Instagram provides the user with how private or public they want to make their account (Throuvala et al., 2019). Finally, adolescents use YouTube to watch music videos, movies, series and explore personal interests (Throuvala et al., 2019).

Perna (2020) stated "[a]s people have a fundamental need to form and maintain social bonds with others, engaging in social media is viewed as a convenient means to meet social needs while facilitating feelings of connectedness and fulfilling one's need to belong" (p. 6). According to Coskun and Karayagız Muslu, (2019) and Reyes et al. (2018) individuals with low self-esteem and low self-confidence have their communication and interaction needs met through interactive applications. Additionally, Huguenel (2017) found "[t]he anonymity of SNSs can encourage self-disclosure, which promotes identity development, and users can connect with others who share similar interests but may not have been accessible otherwise in real life" (p. 7). Through social media, users can post photos accompanied by text to express their identity through interests and receive comments, likes, and shares that enforce self-clarity and validate sociocultural experiences (Huguenel, 2017). However, Huguenel (2017) and Perna (2020) found studies that displayed virtual interactions void of meaningful emotional connection are becoming more preferred to face-to-face interactions. And since individual virtual connections are increasing, so is their vulnerability to FoMO and feelings of social rejection.

Posting and post discussions on social media allow individuals to know what others are up to in real-time (Huguenel, 2017). As a result, individuals engage in SNSs excessively to be in the know and feel accepted (Allaby & Shannon, 2020; Huguenel, 2017). Allaby & Shannon (2020) and Huguenel (2017) found that time spent on SNSs increased FoMo by the users

comparing their lives to the others through the content they post. Huguenel (2017) stated "[t]hose high in FOMO are more likely to feel that they are missing out on social information after they use SNSs, which may preliminarily indicate the directionality of this relation" (p. 15). People feel compelled to browse and comment on feeds, videos, and photos to avoid missing out on potentially rewarding [future] social experiences (Perna, 2020). In addition, Perna (2020) and Barry et al. (2017) found that FoMO results from an individual's psychological need to belong are not being met and use social media in an effort to have their deficits of feeling left out met.

According to Huguenel (2017), FoMO is only just beginning to be studied and understood. Therefore, it is difficult to identify what FoMO is tapping into psychologically, but one idea is that FoMO is creating a cognitive distortion that has individuals believing their life in some way is inadequate (Huguenel, 2017). And according to Reyes et al. (2018), individuals who suffer from high levels of FoMO experience sadness and lowliness, which is due to the individual substituting personal interaction for social media contact. Moreover, Reyes et al. (2018) and Throuvala et al. (2019) discovered FoMO significantly increased addictive internet use. Therefore, the user's need for connection increased their FoMO by engaging them in a cycle of viewing limitless information (Reyes et al., 2018). It can be argued that FoMO triggers PMSU, and FoMO can be considered a strong predictor of social media addiction (Hamutoglu et al., 2020). As a result, parents often attempt to mediate adolescent smartphone use with limited success (Fu et al., 2020).

Adolescent PMSU and Family Conflict

Today, many parents struggle to establish real-world and virtual world boundaries to protect their adolescents from danger when they are seeking independence since communication through social media no longer requires physical proximity (Erikson et al., 2016). As a result,

adolescent social media use can be a specific central issue for families since research is making it more evident that ICTs are changing the way people behave and relate to each other (Procentese et al., 2019).

Social media is creating richer and more complex sociocultural interactions between people, including the family (Procentese et al., 2019). For example, social media allows family members to make plans in real-time and keep in touch, which promotes parent-adolescent interactions and strengthens family ties (Procentese et al., 2019). And these new ways of communication can have consequences to family habits (Beyens & Beullens, 2017) which can manifest themselves in the form of redefining roles, rituals, family cohesion, and progressive isolation from family members within the same house (Procentese et al., 2019). For example, as parents worry about social media's negative effects on their adolescent, it may cause them to potentially exert greater control over their adolescent's social media use (Procentese et al., 2019). In return, the adolescent may perceive this parental act as being over-controlled, which can raise conflict and aggression communication levels within the family (Procentese et al., 2019).

To achieve some sense of relationship balance, parents need to balance their concerns against their adolescent's growing need for independence by making decisions on which rules to relax on and enforce (Erikson et al., 2016). Erickson (2016) and Trumello et al. (2018) explained adolescence is a pivotal time for establishing boundaries, and an adolescent's quest for autonomy can be viewed as their effort to define those boundaries. This can only be achieved if the parents cede their control over to their adolescent. However, some parents are not willing to cede control, causing tension and trust issues with their adolescent (Erikson et al., 2016; Matthes et al., 2021). According to Fu et al. (2020), parental monitoring of their adolescent's internet use is a widely used strategy by today's parents. Yet, according to Fu et al. (2020), many studies have

discovered that parental monitoring is an ineffective strategy for reducing adolescents' internet use.

As adolescents develop the need for privacy, they may engage in more risk-taking activities (Ballarotto et al., 2018), and as a result, parents may exert more control, which may violate their adolescent's privacy boundaries (Erickson, 2016). For example, parents may use more indirect monitoring methods, such as listening in on private conversations or provide unsolicited advice, and in response to protect or define their boundaries, adolescents may confront their parents as a result (Erikson, 2016). Current findings also suggested that through the introduction of new technologies, parents may set up social media use rules for the adolescent (Beyens & Beullens, 2017; Procentese et al., 2019) but fail to discuss them, which leads to family media use conflict (Matthes et al., 2021). Additionally, research conducted by Matthes et al. (2021) and Procentese et al. (2019) suggest that parent-adolescent generated conflicts arise when parents feel they lose control of their adolescent's smartphone use.

Daneels and Vanwynsberghe (2017) stated parents have no idea how to guide their adolescent with their media use. As a result, parents attempt to mediate their adolescent's social media use through various mediation strategies such as restrictive, active, or co-use (Daneels & Vanwynsberghe, 2017). Restrictive mediation has been found to create parent-adolescent conflict (Beyens & Beullens 2017). For example, adolescents who experience restrictive mediation display rebelliousness and disobedient behaviours because they want freedom from parental control when using social media (Beyens & Beullens 2017; Matthes et al., 2021).

Beyens and Beullens (2017) found that parents who treat mobile device use as forbidden fruit may further instigate parent-child conflict. Adolescents who experience online restrictions from their parents create real and fake social media accounts (Erikson et al., 2016). As a result,

adolescents continue to use social media as a maladaptive coping strategy to reduce their stress when dealing with negative emotions activated by an attachment system (parent) (Ballarotto et al., 2018). Lui and Ma (2019) argued that emotional dysregulation and attachment anxiety contributed to such maladaptive behaviours as problematic internet use. Individuals who displayed emotional regulation difficulties were at a higher risk of exhibiting behavioural addictions such as video games and smartphone addiction (Liu & Ma, 2019).

Teachers Perceptions on Classroom Social Media Use

From an educational perspective, it becomes evident that computers and technology are not new facets of education (Smale & Hill, 2016). Adolescents enjoy using social media and sharing ideas with their peers; therefore, educators need to tap into social media to engage students and deepen their thinking (Smale & Hill, 2016). Ugar and Koc (2019) argued that in education, technology can enhance the students' and teachers' learning experiences, and it is one of the most powerful factors driving school use and student achievement. Social media plays a vital role in today's youths' lives; however, according to Van Den Beemt et al. (2020), many teachers find its use in the classroom disruptive. Teachers feel apprehension towards social media's potential distractibility and avoid its potential pedagogical use (Van Den Beemt et al., 2020). As a result, " . . . education is lagging in assisting children in becoming responsible digital citizens, even though issues related to the digital world are common in society" (Delay, 2020, p. 33). As a result, many principals are experiencing difficulty with leading and diffusing digital practices into a school learning environment (Domeny, 2017).

How Principals Facilitate Teacher Technology Use Through Leadership

Over the past 100 years, public education appears as though it has not changed in some ways; however, in other ways, it has (May, 2017). Public education is still under funded, large

class sizes persist, and access to the most up-to-date technology continues to be a challenge (May, 2017). However, the changes public education is experiencing seems to be with teachers incorporating technology into the classroom through ICTs, such as mobile devices and computers (L. Skenderi & F. Skenderi, 2017). The influx of technology may be viewed as a curse and a blessing as an innovative learning tool (May, 2017). The principal is responsible for maintaining strict adherence to school division policy while maintaining order in the school setting (Smale & Hill, 2016). Moreover, the principal must maintain a learning environment that does not disturb the overall safety and order of the school (Alberta Education, 2018; Smale & Hill, 2016). Research stated that principals play a crucial role in leading the implementation and integration of technology in schools (Domeny, 2017; May, 2017; Ugur & Koc, 2019). To promote a school culture that explores new digital teaching and learning techniques, the principals themselves must be personally proficient with new technology (Domeny, 2017).

To help principals better identify opportunities to develop technological leadership, part three of this literature review draws attention to three areas that help create and sustain a school's digital culture: (a) the role of digital literacy, (b) the principals' role with technology, enhancing and sustaining a digital culture, (c) and the role of professional development.

The Role of Digital Literacy

Digital literacy is a vital skill needed in these current times for learning, communication, collaboration, personal growth, and employment (Hosseini, 2018; Sadaf & Johnson, 2017). However, this is in contrast with a traditional teaching approach where typically teachers and principals utilize a slow and controlled release of information to the learner in a single task, linear process to advance learning (Domeny, 2017). From the student's perspective, Domeny (2017) found that students prefer access to visual and auditory rich information quickly, enjoy

multi-tasking, learning material that is relevant and fun, while collaborating with others throughout the learning process. Conversely, research is finding that adolescents are not as technically or critically skilled as they need to be (Talib, 2018). As a result, educators have responded by having students utilize technology. However, that is not enough to enhance students' digital literacy skills because these skills must be explicitly taught, regardless of their socioeconomic background (Hosseini, 2018).

To use technology effectively, adolescents need to have digital literacy skills. This allows them to accomplish various tasks within the digital setting (Hosseini, 2018; Sadaf & Johnson, 2017). Moreover, having digital literacy skills will allow adolescents to function successfully in a digital setting (Hosseini, 2018; Sadaf & Johnson, 2017). For example, students with strong media literacy skills can effectively examine the media's function by utilizing and analyzing received messages through various media forms (Hosseini, 2018). Sadaf and Johnson (2017) found three reasons for promoting digital literacy across all grade levels and subject areas: first, it encouraged higher-order thinking skills through cooperation, analysis, and creation; second, digital literacy allowed for the access of vast amounts of information, as long as students had internet access and third, digital literacy prepares students for the real world.

To foster a digital culture and bring schools into the digital age, principals must see themselves as digital leaders (Domeny, 2017), and teachers must be digitally literate (Sadaf & Johnson, 2017). Also, principals must have clearly defined policies relating to technology. This will allow them to effectively and efficiently deal with any issues or problems related to technology, smartphones, and social media (Smale & Hill, 2016).

Principals' must ensure they are encouraging and sustaining a school's digital culture by ensuring continuous improvement of digital learning through instructional innovation (ISTE,

2009; Ugur & Koc, 2019). They must promote and model effective technology for learning and provide technology to meet the diverse learning needs of all learners through learner-centered environments (ISTE, 2009). Lastly, principals must also ensure technology is being infused across the curriculum and stimulate creativity and innovation by participating in learning communities (Alberta Education, 2018) locally and globally (ISTE, 2009). It is essential for principals to analyze their leadership skills against the ISTE Standards for administrators (Domeny, 2017).

Role of the Principal

For a principal to facilitate teacher technology use through digital leadership at their school, a principal must develop a strategic plan and vision that provides access to digital tools, creates a culture that supports innovation, and inspires students to learn and achieve (Domeny, 2017; Ugur & Koç, 2019). A principal's attitude regarding technology influences teachers' ability to integrate technology into their teaching (Zhong, 2017). Principals must realize that digital leadership is not only the use of technology, but how technology is used within the school in terms of student engagement and achievement (Domeny, 2017).

Principals have many roles (Domeny, 2017) that range from the organizational manager, teacher evaluator, student disciplinarian, and instructional leader (England, 2018). School principals are responsible for maintaining order, enforcing school division policy, and ensuring that teachers follow prescribed curriculum standards, while providing students with enriching educational opportunities (Alberta Education, 2018; Smale & Hill, 2016). Since principals are instructional leaders, they must continuously work with staff to create a continuous learning culture (Alberta Education, 2018) by viewing social media as an instrument of change through professional development (England, 2018). The principal must build positive working collegial

relationships (Hollingworth et al., 2018) through simultaneously promoting and modeling open and collaborative discussions (Alberta Education, 2018).

To grow a digital culture and facilitate teacher technology use, principals must initiate a peer mentoring and expert demonstration program for teachers (Van Den Beemt et al., 2020). Professional development social media groups allow educators to share and gain first-hand knowledge on teaching practices and seek help from other members (Alberth, 2018; Kaiser, 2017). For example, teachers can learn what does and does not work and why (Kaiser, 2017). Lastly, when principals establish trust and support teacher learning and collaboration (Berkovich, 2018; Greenhalgh & Koehler, 2017), they will increase teacher involvement in different teaching roles (Berkovich, 2018). Therefore, a school's digital culture would grow as early adopters of technology could help educate their colleagues on technology use (Van Den Beemt et al., 2020)

Enhancing and Sustaining a Digital Culture

To enhance and sustain a school's culture, three areas will be examined. First, principals should have a clear vision (Louis & Murphy, 2017; Ugur & Koç, 2019) for technology implementation and ensure technology is being used safely and correctly (Alberta Education, 2018; Smale & Hill, 2016). Second, trust encourages a positive school environment where staff support one another and are committed to student learning (Hollingworth et al., 2018; Webber & Nickel, 2021). For a variety of reasons, sustaining a culture cannot be done alone. Therefore, the principal must distribute their leadership responsibilities among the staff (May, 2017; Webber & Nickel, 2021).

The Importance of Vision.

Cruickshank (2017) pointed out that principals who commit time communicating clear goals on setting school direction and vision had the most significant impact on student outcomes.

Therefore, principals must establish clearly defined policies for proper technology use, and these policies must be effective early in the year and be accessible to parents (Smale & Hill). A principal must also communicate in a way that engages key stakeholders (Cruickshank, 2017; Hollingworth et al., 2018). The principal must provide a shared emphasis for teacher collaboration (Shannon & Bylsma, 2007). A clear vision and shared focus capture the enthusiasm of its members by allowing teachers to share ideas, participate in the decision-making process, and mutually help one another (Shannon & Bylsma, 2007). To accomplish this, principals must motivate their staff to align personal goals with schools. (Cruickshank, 2017). To have staff buy into the vision, the principal must foster a commitment to continuous improvement by recognizing the school community's values and have a philosophy that is based on sound principles and is student-centered (Alberta Education, 2018). According to Bennet (2017), "[a] key role of leadership is to design a detailed vision of what the culture should look like for that school, focusing on social and academic conduct" (p. 8). Explaining the vision in detail allows staff to see what behaviours are encouraged and prohibited (Bennet, 2017). Furthermore, vision should be referred to constantly, so stakeholders do not lose its significance (Bennet, 2017).

The Importance of Trust.

Second, to have a positive culture within a school, the most important thing a principal can do is build trusting relationships (Hollingworth et al., 2018; Webber & Nickel, 2021). The quality of teacher-principal relationships is vital and can impact staff morale, commitment, and satisfaction (Hollingworth et al., 2018). When staff members have trusting relationships with their principal, they will provide greater buy-in when implementing new school-based change initiatives (Hollingworth et al., 2018). According to Louise and Murphy (2017) and Cruickshank

(2017), principals must clearly set out goals and vision for increasing student learning, and to do that, principals must create a community that supports teachers. To support teacher learning, the principal must create an environment that allows for teachers to connect with colleagues and experts that can help them (Greenhalgh & Koehler, 2017). For collegial support to occur, principals must cultivate trust within the school (Hollingworth et al., 2018; Louis & Murphy, 2017; Webber & Nickel, 2021).

Trust is reciprocal, meaning, if the principal does not trust the teachers, the teachers will not hold trust in the principal (Louis & Murphy, 2017). Teachers are more likely to interpret their principal's behaviours as supportive if the principal entrusts them (Louis & Murphy, 2017). Positive results are that teachers will be more willing to take creative risks, share in the decision-making process, and contribute to the school's overall effectiveness (Hollingworth et al., 2018; Polega et al., 2019). Berkovich (2018) pointed out that teachers will increase their involvement and willingness to take on extra roles, if they trust their principal. Lastly, trust holds a special place as a cornerstone for school success (Berkovich, 2018). Many researchers view it as the connective tissue that advances the education of student welfare (Berkovich, 2018).

The Importance of Teacher Leaders.

Third, in order for principals to encourage teachers to embrace proper technology use, they must engage and mentor teachers to build their professional expertise and capacities (Alberta Education, 2018). May (2017) stated the missing link between school improvement and sustained school success stems from capacity building. A critical aspect of being a principal is to build leadership capacity amongst teaching staff, and then empower them to become informal leaders (Alberta Education, 2018; May, 2017). In the education system, research indicated that informal leaders influence the educational program by assisting with influencing the climate and

culture of a school (May, 2017; Nguyen & Hunter, 2018). Research indicated that attributes such as shared leadership and collaboration through teacher leadership practices can produce worthwhile benefits for school community members (May, 2017; Webber & Nickel, 2021), such as better decisions, and commitment to shared goals and student development (Webber & Nickel, 2021). Furthermore, teacher leaders serve as an intermediary within and across school community groups and experience more freedom than formal leaders to push the boundaries of pedagogy because they are less constrained by collegial expectations than their principal (Nguyen & Hunter, 2018; Webber & Nickel, 2021). In summation, by making the purpose and vision of teamwork well-defined, principals provide teachers with a sense of unity by creating a culture of collaboration (Polega et al., 2019).

The Role of Professional Development

To meet student needs, one of the many responsibilities of the principal is to build the capacity of their teachers (Alberta Education, 2018; Ugur & Koc, 2019). Moreover, to support the learning needs of all students, principals must facilitate the use of a variety of technologies (Alberta Education, 2018). According to Conole (2018) and Ugur and Koc (2019), educators play an essential role in integrating digital technologies; however, they are not ideally equipped to handle the changing demands of learning (Conole, 2018). To enhance their knowledge of digital technology, principals and educators must seek professional development (England, 2018; Ugur & Koc, 2019; Van Den Beemt et al., 2020).

Principals play a crucial role that either establishes or hinders the effectiveness of an organization's structure, which ultimately impacts the school's learning and teaching environment (England, 2018; Hollingworth et al., 2018). Principals cannot effectively evaluate the effects of teacher technology use on teaching practices and student achievement if they do not understand

how to use it themselves (Ugur & Koc, 2019). Because improving student learning is a shared responsibility, the principal must learn alongside their staff and model behaviours they want their staff to emulate (Domeny, 2017; Hollingworth et al., 2018).

With the rapid growth of the digital age, professional development in the form of examining social media for educators is a key to success for any professional (England, 2018; Van Den Beemt et al., 2020). According to Olsen (2017), traditional professional development does not support collaboration and teacher efficacy; most of all, it does not let the teacher lead their own professional development (Kaiser, 2017; Olsen, 2017). Van Den Beemt et al. (2020) and Alberth (2018) found that teacher professional development through social media platforms allowed teachers to gain knowledge, and receive feedback and support, while simultaneously sharing their knowledge and expertise.

Using SNSs for professional development can further enhance an educator's understanding, as they discuss and share ideas related to implementing new teaching practices and skills in real-time (Alberth, 2018; Van Den Beemt et al., 2020). Integrating social media into professional development is essential because it encourages participants to sustain use through ongoing discussions and idea-sharing (Alberth, 2018; Kaiser 2017; Van Den Beemt et al., 2020). Through professional development social media groups, educators can share and gain first-hand knowledge on teaching practices and seek help from other members (Alberth, 2018; Kaiser 2017). For example, teachers can learn what does and does not work, and why. Online platforms such as Twitter allow teachers to connect with knowledge brokers or experts who already have the knowledge the teacher is trying to obtain (Greenhalgh & Koehler, 2017). Twitter-based professional development follows the same structure as traditional professional development by allowing teachers to received professional development to meet their needs (Greenhalgh &

Koehler, 2017). For example, teachers, along with students, can connect to scientists to answer curriculum-related questions (Minero, 2015). Ultimately, professional development through social media has been found to extend knowledge sharing through face-to-face encounters with teachers located within the same district (Kaiser, 2017; May, 2017). The interconnectedness, openness, and self-directed nature of online professional learning can inform teachers' learning in an effective, timely, responsive manner (Alberth, 2018; Greenhalgh & Koehler, 2017; Van Den Beemt et al., 2020). "Teachers who utilized technology to engage in collaborative, 'networked' learning often reported improvements in their instructional practices" (Kaiser, 2017, p. 32).

In conclusion, principals have a vast array of duties and responsibilities which assist in the overall growth of learners; principals must assist school-based stakeholders with using technology appropriately in the learning environment (Alberta Education, 2018; Smale & Hill, 2016). To grow a positive outlook toward student technology use within the school, they must create meaningful collaborative opportunities for teachers and staff while promoting open and collaborative dialogue that producing an environment for the ethical and safe use of technology (Alberta Education, 2018). Having a well-defined vision provides teachers with a sense of community, which creates an empowered culture of collaboration (Hollingworth et al., 2018; Polega et al., 2019).

To ensure that a school's digital culture and teachers technology use is sustained, the principal must analyze their leadership skills against the ISTE standards (Domeny, 2017; Ugur & Koc, 2019). Principals must emphasize teamwork because teachers have a wide variety of skills, ideas, and expertise, which can be collectively shared (Polega et al., 2019). The teacher leader must also be utilized, since they uphold professional responsibilities and expectations by acting as influencers (Nguyen & Hunter, 2018; Webber & Nickel, 2021). This allows them to push the

boundaries of teacher pedagogy since they are less constrained by collegial expectations than their principal (Nguyen & Hunter, 2018; Webber & Nickel, 2021). Last, cultural sustainment can be further reinforced by using SNSs for professional development since they offer continuous feedback in real-time from other teachers (Alberth, 2018; Kaiser 2017; Van Den Beemt et al., 2020).

In essence, the essential job of a principal is to provide school-based stakeholders with the knowledge, skills, and background for appropriate and safe use of technology (Alberta Education, 2018; Smale & Hill, 2016). As students evolve and change, so must schools, principals, and teachers by changing their teaching and teaching philosophies (Smale & Hill, 2016). Therefore, the principal must make it evident that learning is not only for students (Hollingworth et al., 2018), but for principals and teachers as well (Alberta Education, 2018).

Summary

The first part of this literature review examined attachment theory. The research found that attachment is formed through early interactions between primary caregivers and infants (Demircioğlu & Köse, 2021; Liu & Ma, 2019). The research also found that insecure attachment stems from unresponsive, unavailable, or inconsistent adults (Liu & Ma, 2019; McDaniel, 2019). Attachment anxiety was found to develop when a caregiver does engage in responsive, consistent, or sensitive infant interactions (Liu & Ma, 2019). Anxiously attached individuals display excessive efforts for acceptance and dependence from others and are more likely to use technologies to obtain positive feedback or approval (Reiner et al., 2017), therefore placing themselves at risk for addiction (Monacis et al., 2017; Schimmenti et al., 2014). In addition, adolescent use of social media technologies can be perceived as an attachment object and

influence an adolescents' social and emotional development similar to a parent-adolescent attachment (Davis, 2017).

The second part of this literature review examined how a lack of parental attention through mobile devices, peer relationships, and social media use increases FoMO and drives PSMU. The research found that family interactions are shaped by technology; however, technology impacts parenting quality (McDaniel 2019; Nicolas, 2020; Procentese et al., 2019). Interference from social media and parental phubbing led to low relationship satisfaction between family members (Nicholas, 2020) and encouraged adolescents to compensate for their feelings by extensively using social media (Boer et al., 2021; Demircioğlu & Köse, 2021).

The research found that FoMO is driving people's SNS use by making it easier to view other people's experiences they are missing out on (Coskun & Karayagız Muslu, 2019; Dogan, 2019; Milyavskaya et al., 2018). In addition, time spent on SNSs increased FoMO through users comparing their lives to others based on the content they post (Huguenel (2017; Allaby & Shannon, 2020).

The research found that family conflict is created through parental social media restriction and unclarified family media use rules (Beyens & Beullens, 2017; Procentese et al., 2019). Moreover, the research found that in response, adolescents create fake accounts as a maladaptive coping strategy when dealing with the stress generated by an attachment system (Ballarotto et al., 2018), which was found to increase an adolescents' risk of exhibiting smartphone addiction (Liu & Ma, 2019).

The third part of this literature review examined how principals can facilitate teacher technology use. The research found that a principal must view themselves as digital leaders (Domeny, 2017) and promote and model effective technology use (ISTE, 2009). In addition, a

principal must have a clear vision, build trust, and develop teacher leaders (May, 2017; Webber

& Nickel, 2021). Lastly, with the rapid growth of the digital age, the research found that

integrating social media into teacher professional development is essential because it encourages

participants to sustain technology use through ongoing discussions and idea-sharing (Alberth,

2018; Kaiser 2017; Van Den Beemt et al., 2020).

Outline for the Remainder of the Paper

As outlined in Chapter 1, the purpose of this capstone study is to assist principals with

integrating leadership skills into school technology practices, such as smartphones, and facilitate

teacher technology use to make teachers and adolescent students more digitally literate for the

future. The principal must understand how problematic adolescent social media use encourages

an insecure attachment to parents, encourages FoMO, and creates family conflict. Chapter 2 was

an extended literature review about how problematic adolescent SMU is encouraging an insecure

attachment to their parents. Chapter 2 also reviewed how FoMO creates and drives PMSU and

family conflict in adolescents. Lastly, Chapter 2 reviewed how principals can facilitate teacher

technology use to enhance a school's digital culture and teacher learning. In the remainder of this

capstone study, Chapter 3 will provide a conclusion and recommendations for principals on

facilitating teacher technology use within their school.

Chapter 3: Summary, Recommendations, and Conclusions

Summary of Findings

The first section of Chapter 2 reviewed and examined current literature on attachment. Research also found that insecure attachment is caused by unresponsive or inconsistent adults (Liu & Ma, 2019; McDaniel, 2019). To compensate for an insecure attachment, the individual displays excessive efforts for acceptance through technologies to obtain positive feedback (Reiner et al., 2017), which places the individual at risk for addiction (Monacis et al., 2017; Schimmenti et al., 2014).

The second section of Chapter 2 reviewed how lack of parental attention through mobile devices, peer relationships, and social media use is increasing FoMO is driving PSMU. The research discovered that when parents phub their adolescent, the adolescent perceives that as the parent psychologically distancing themselves, which damages the parent-adolescent relationship (Hong et al., 2019). As a result, adolescents compensate for their feelings by using social media extensively (Boer et al., 2021; Demircioğlu & Köse, 2021). From a peer relationship perspective, the research found that adolescents turn to social media as their primary source of peer interaction (Ballarotto et al., 2018; Nesi et al., 2018; Nesi et al., 2021). The research found that if adolescents feel socially excluded from peer interaction, they will develop FoMO (Barry et al., 2017; Coskun & Karayagız Muslu, 2019; Dogan, 2019). The research further found that FoMO increased adolescents' SNSs use by comparing their lives against the content people post (Huguenel 2017; Allaby & Shannon, 2020). The research also discovered that online interactions are void of emotional connection (Perna, 2020; Huguenel, 2017), which was found to increase FoMO in adolescents (Reyes et al., 2018; Throuvala et al., 2019) and trigger PMSU (Hamutoglu et al., 2020). From a family perspective, social media was found to create parent-adolescent

conflict through a lack of clear rules and restrictive use, and parents exerting greater control over their adolescents' media use (Beyens & Beullens, 2017; Procentese et al., 2019).

The third portion of Chapter 2 was an examination of how a principal can facilitate teacher technology use. The research discovered that digital literacy skills are essential for students and prepare them for the future (Sadaf & Johnson, 2017; Hosseini, 2018). The research found that the principal must view themselves as a digital leader (Domeny, 2017) and be digitally literate (Sadaf & Johnson, 2017). To facilitate teacher technology use, the principal must utilize such leadership practices as (a) having a clear vision, (b) build trust with staff, (c) empower teacher leaders, and (d) utilize social media-driven professional development. Finally, principals must continuously analyze themselves against the ISTE Standards for Administrators (Domeny, 2017; Ugur & Koc, 2019).

Finding and Implications of the Research

The findings of this capstone study are that several factors encourage adolescent PMSU through social media. Researchers found that smartphone use undermined parent-child connection (Hong et al., 2019; Kushlev & Dunne, 2019) and negatively impacted parent-adolescent attachment, meaning the child's attachment can switch from their parent to an object (Davis, 2017). In addition, parents must explicitly develop family-generated technology rules in the home setting and consistently enforce them to avoid parent-child conflict (Matthes et al., 2021). From a school-based perspective, new technologies are changing the teaching and learning landscape. Therefore, the principal must assist teachers in understanding that students are wired differently. Failure to do so will create an even bigger learning gap between the teacher and their students and hinder their digital literacy skills.

As a result, the principal must be technologically proficient. Research found that a principal's knowledge and skills regarding technology impacted teacher technology integration (Zhong, 2017). To facilitate teacher technology use, the principal must provide and build the technological capacities of staff and students in the learning and teaching process (Alberta Education, 2018; Domenyy, 2017; Smale & Hill, 2016). In essence, one of the main responsibilities of principals is to assist teachers with using technology to increase levels of student learning (Domeny, 2017). The principal must understand and make teachers aware that today's students are wired differently and use social media and the digital world to discover themselves. By pairing this knowledge with a digitally literate culture that has vision, trust, teacher leaders, and social media-driven professional development will allow principals to facilitate teacher technology use.

Summary Remarks

The problem addressed in this capstone study was how principals can facilitate teacher technology use regarding problematic adolescent social media use. An analysis of subject-related research revealed principals must ensure they are encouraging and sustaining a school's digital culture through continuous improvement of digital learning and instructional innovation (ISTE, 2009; Ugur & Koc, 2019). Principals must also ensure technology is infused across the curriculum (Alberta Education, 2018; ISTE, 2009). Furthermore, to sustain technology use, principals must continuously analyze themselves against the ISTE Standards for Administrators (Domeny, 2017). Finally, to support teacher learning, the principal must create an environment that allows teachers to connect with colleagues and experts who can help them (Greenhalgh & Koehler, 2017). Therefore, professional development in the form of examining social media for educators is a key to success (England, 2018; Van Den Beemt et al., 2020). Applying these

understandings will assist principals with increasing their technology use and understanding, therefore, allowing principals to facilitate teacher technology use better. However, principals who do not display a strong background with technology might find greater value in the recommendations that follow.

Recommendations

Principals must understand their role as an instructional technology leader (Domeny, 2017) since they share the responsibility for student success by assisting school-based stakeholders with technology (Alberta Education, 2018). Principals also have a responsibility for building the capacity of teachers to meet the learning needs of all students (Alberta Education, 2018; Domeny, 2017; Smale & Hill, 2016). Therefore, the recommendations that follow are designed to assist principals in facilitating teacher technology use to enhance and sustain teaching practices with technology within the school. Based on the extensive literature review in Chapter 2, for principals to facilitate teacher technology use, they must focus on implementing and utilizing five main areas: utilizing digital literacy, the principals' role with technology, enhancing and sustaining a digital culture, the teacher leader, and social media-driven professional development. Due to the impact principals have on teachers integrating technology into their teaching (Zong et al., 2017), recommendations for principals to use to facilitate teacher technology use have been developed: becoming a digital leader, establishing a clear vision and clear communication, build teacher-principal trust, utilize teacher leaders, and social media-driven professional development.

Becoming a Digital Leader

Principals must view themselves as digital leaders to encourage and facilitate digital literacy within a school (Domeny, 2017). Digital literacy is a crucial skill needed in learning,

communication, collaboration, personal growth, and employment (Sadaf & Johnson, 2017; Hosseini, 2018). To ensure principals effectively facilitate digital literacy within the school, they must ensure continuous improvement of their digital learning (ISTE, 2009; Ugur & Koc, 2019). To assist in meeting the diverse learning needs of teachers and students, principals must provide technology and learn with staff in order to model and promote effective technology use (Hollingworth et al., 2018; ISTE, 2009;). Principals must ensure technology is infused across the curriculum (Alberta Education, 2018; ISTE, 2009). Lastly, principals must analyze their leadership skills against the ISTE Standards for administrators (Domeny, 2017) and actively seek out agencies and experts to assist with enhancing student learning (Alberta Education, 2018).

Establish a Clear Vision and Clear Communication

As digital literacy is essential to grow teacher technology use, the second recommendation is that principals must establish a clear and shared vision. According to Shannon & Bylsma (2007), communication and collaboration among staff is essential when establishing a shared school culture. As discovered in the research, principals must explain their vision in detail (Bennet, 2017). Principals must communicate clear goals with school-based stakeholders regarding school direction and vision (Cruickshank, 2017). In addition, the principals' vision should detail what social and academic conduct looks like for students (Bennet, 2017). Additionally, principals must have their staff align personal goals with school goals (Cruickshank, 2017). Principals must establish clearly defined policies for proper technology use, and these policies must be in effect early in the year and be accessible to parents (Smale & Hill). Finally, principals must have a philosophy based on student-centered principles (Alberta Education, 2017), and the school's vision should be referred to constantly (Bennet, 2017).

Build Teacher-Principal Trust

The third recommendation to further enhance teacher technology use is to build teacher-principal trust. According to Hollingworth et al. (2018) and Webber and Nickel (2021), the most important thing a leader can do is build teacher-principal trust and create a community that supports teachers (Louise & Murray, 2017; Cruickshank, 2017). Teachers who trust their principal share in the decision-making process, take creative risks, and contribute to the schools' overall effectiveness (Hollingworth et al., 2018; Polega et al., 2019). However, the principal must first place trust in the teachers; otherwise, the teachers will not fully trust their principal (Louis & Murphy, 2017). Lastly, the development of trust encourages teacher-principal relationships and positively impacts staff morale, commitment, and satisfaction (Hollingworth et al., 2018).

Utilize Teacher Leaders

The fourth recommendation to facilitate teacher technology use is for the principal to utilize teacher leaders. Principals must engage and mentor teachers to build teacher professional expertise and capacities (Alberta Education, 2018). According to the research, one critical aspect of being a principal is to build and empower leadership capacity among teaching staff (Alberta Education, 2018; May, 2017). Research also indicated that teacher leaders or informal leaders create a culture of collaboration (Polega et al., 2019) by having the teacher leader act as an intermediary and push the teacher's boundaries of teaching pedagogy (Nguyen & Hunter, 2018; Webber & Nickel, 2021). In essence, teacher leaders influence the educational program by assisting and influencing the climate and culture of a school (May, 2017; Nguyen & Hunter, 2018) because they are less constrained by collegial expectations than their principal (Nguyen & Hunter, 2018; Webber & Nickel, 2021).

Social Media-Driven Professional Development

The fifth recommendation for facilitating teacher technology use is to enhance teacher and principal digital technology competency through professional development (England, 2018; Ugur & Koc, 2019; Van Den Beemt et al., 2020). Professional development in the form of examining social media for educators is a key to success for any professional (England, 2018; Van Den Beemt et al., 2020). To support teacher learning, the principal must create an environment that allows teachers to connect with colleagues and experts who can help them (Greenhalgh & Koehler, 2017). In addition, principals must integrate social media into professional development (Alberth, 2018; Kaiser 2017; Van Den Beemt et al., 2020). The research made it evident that professional development through social media platforms such as Twitter allowed teachers to gain knowledge and receive feedback and support while simultaneously sharing their knowledge and expertise (Alberth, 2018; Kaiser 2017; Van Den Beemt et al., 2020).

Conclusion

In conclusion, the principal plays a vital role in facilitating teacher technology use, but the principal must view themselves as a digital leader. The principal must be competent with utilizing technology. If the principal is experiencing difficulty achieving this, they must work with experts and professionals inside and outside of the school setting in order to achieve a desired level of competency. For example, a principal can utilize teacher-leaders within their school or contact other principals within the district to help facilitate teacher technology use.

To enhance and sustain a school's digital culture, principals must build trust with their staff and utilize professional development through social media, such as Twitter. In addition, the principal must educate their staff on student social media use and the effect it is having on their

world. In essence, it is by developing a shared responsibility for the success of all students (Alberta Education, 2018) that will allow for the facilitation of teacher technology use, and as a result, will positively impact teacher learning and school culture.

Suggested Research for the Future

Although the findings of this capstone study indicate that principals can facilitate teacher technology use in their teaching practices, further research in four areas was identified as a need. First, it was made evident that student digital literacy skills have a significant impact on their futures. Therefore, research on effective leadership methods regarding social media and digital technology is needed to ensure continued teacher technology use. Second, from a student perspective, more research is required to better understand what FoMO is tapping into from a psychological perspective (Huguenel, 2017). Third, a district-level study on how principals utilize technology to facilitate teacher technology use in the classroom to enhance student learning would be beneficial in creating digital learning equality across a teaching district. Lastly, since principals must understand strong pedagogy and curriculum (Alberta Education, 2018), additional research on how principals can leverage teacher leaders to enhance teacher technology use in teaching practices across the curriculum would be of value.

Final Statements

Social media use in adolescents is becoming more of a concern because of the negative impact it can have on adolescents through continuous use. In addition, continuous adolescent social media use is further worrying because it is impacting many adolescents psychological well-being. From an educational perspective, there is a learning gap between how teachers and students use technology in their learning. Research has indicated that students have an appetite for social media, and technology is often the only way to connect with students. In order for

education to be engaging, relevant, and effective, teachers need to connect with kids where they are at. Therefore, the principal must view themselves as a digital leader and facilitate teacher technology use to ensure students receive the digital literacy skills needed for the future. Following the review of the literature on how principals can facilitate teacher technology use, it has been discovered that principal support is vital if technology implementation is going to work.

Five recommendations for principals were suggested. Based on the research findings, principals can facilitate teacher technology use through the principal understanding their role as a digital leader. The principal can further facilitate teacher technology use and enhance a school's digital culture by having a clear vision, establishing trust, developing teacher leaders, and utilizing social media-driven professional development. These recommendations were put forth to provide practicality and direction for principals since one of their jobs is responsibility to facilitate the use of a variety of technologies that support student learning. Lastly, due to the impact that a principal has on teacher technology use and student learning, the principal must take steps to keep current in their learning practices to best assist in facilitating teacher technology use.

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