Volume 19, Issue 1

Spring 2020



Journal for Leadership and Instruction

ISSN 2475-6032 (Print) ISSN 2475-6040 (Online)

AN INTERNATIONAL PEER-REVIEWED RESEARCH JOURNAL FOR EDUCATIONAL PROFESSIONALS

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Journal for Leadership and Instruction

ISSN Number (Print) ISSN 2475-6032 ISSN Number (Online) ISSN 2475-6040

Published by:	
SCOPE Education Services	Website - http://www.scopeonline.us
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Editor's Perspective



In the spring of 2020, the coronavirus spread across the globe. In the USA, pre-K to grade 12 schools and colleges and universities closed their doors transferring students and faculty to online and digital learning modes by the end of March. For many students, the absence of friends and the

online learning mode created a sense of solitary confinement. No matter how necessary the stay at home demands were, every household had members who knew someone who chose to ignore the facts of how efficiently the coronavirus could spread and who sought someplace to gather with friends or to go out to hoard goods. High anxieties, fear of the unknown and loss of income disrupted many family plans and daily life. Then, came death to a loved one at a time of guarantine. The terrible aloneness of a beloved friend, a grandmother, grandfather, father, mother, sister, brother, and child dying while you remain in guarantine is a torturous experience. Where is hope, or faith and love? These great virtues are powers that dwell within and among us. They are evident among us if we open our eyes to see our neighbors.

In the face of some who exhibit a lack of concern for the well-being of others, nurses, doctors, medical technicians, hospital staff from security, clerical and custodial divisions continued to work and did all they could to help patients and save lives. Fire fighters, police, postal and national guard members appeared for work every day. Working side by side with them were agricultural laborers, transportation employees, delivery and food service personnel, and volunteers at food distribution sites across our nation. Many of these brave people are working at a higher pace than they thought possible under extraordinary stress in fields, factories, markets, service centers, roads and railways to sustain the necessary activities of life.

Many employees and supervisors working within the digital business world and governmental services are giving enormous hours of their day to guiding, planning, communicating, reviewing data,

adjusting directions and inventing solutions to resolve barriers they encounter in delivering services to customers, clients, and citizens. All of them experience enormous stress because of uncertainty, ambiguity, isolation and the accelerating pace of digital information and its demands. They work from home because they can and because they believe what they do matters to the quality of our lives.

School teachers, college professors, administrators and support staff are doing their very best to guide students in new learning endeavors at home using computers, digital pads and phones. Are these digital learning modes adequate to acquire new knowledge? In some ways, yes; in other ways, no. Human interactions at whatever age a person is encompass a myriad of feelings, expressions, emotions and historical knowledge that digital exchanges cannot capture. Many parents home schooling two or three children for the first time express extraordinary admiration for teachers who have 20 or more such students in one classroom. School personnel tend to have a deep love for the innocence and vitality of the young and they believe they have a calling to help our youth be all they can be.

We salute all of the journalists and residents who contribute to our well-being and protect our democracy during these challenging and tragic times. May we choose to live with profound care for each other.

Our articles in this spring 2020 edition begin with a theme of homesickness that many college students experience as isolation from the familiar and the comfortable environment they love. Next, our researchers explore tutoring programs, followed by how teachers acquire expertise using technology for instruction; childhood nutrition; project learning; and the hidden assets college first year students bring to campus and classrooms. Lastly, we offer a book review of leadership skills for administrators of student affairs. During this time in which disruptive forces upend our normal practices, we hope the research presented in these articles inspires all of us to build a better future beyond these times.

Robert J. Manley, Editor-in-Chief

Understanding Homesickness: A Review of the Literature

By Talita Ferrara, M.S.

Abstract

This article provides a review of the research literature related to the experience of homesickness among college students. Research-based findings of the symptomology of homesickness, risk factors that increase vulnerability to experiencing this psychological phenomenon, and the effectiveness of treatment strategies aimed at reducing symptoms of homesickness are examined within this literature review.

Introduction

The transition from high school to college is an important milestone in a student's life. For many young adults, this marks their first time being away from home for an extended period (Thurber & Walton, 2012). Although the experience of pursuing a college degree and achieving a sense of autonomy from one's family of origin can be exciting and invigorating, students can also find this transition to be anxiety-provoking and isolating (Thurber & Walton, 2012). Consequently, homesickness is tied to these feelings of isolation and anxiety. Fisher and Hood (1988) defined homesickness as "a complex cognitive-motivational-emotional state concerned with grieving for, yearning for and being occupied with thoughts of home" (p. 426), while Thurber and Walton (2012) described homesickness as "the distress or impairment caused by an actual or anticipated separation from home" (p. 415). This distress operates on a spectrum, ranging from mild to intense symptoms of homesickness with debilitating effects on daily functioning (Fisher, 2017).

Although some level of homesickness is a relatively common experience following a move, studies have yielded a range in prevalence reporting of this phenomenon (VanTilburg, 1996). Differences between studies on measures and definition of homesickness, varying lengths of time participants were away from home, and contextual diversity involving relocation have influenced data on the prevalence (Stroebe, Vliet, Hewstone, & Willis, 2002). In a study on boarding school children ranging from 11 to 16 years old, Fisher, Frazer, and Murray (1984) found a mere 16% prevalence rate when the term 'homesickness' was missing from the questionnaire. However, two years later, a similar study in context and participant demographics, found 71% of students experienced homesickness during their time away from home in boarding school (Fisher, Frazer, & Murray, 1986). Variation in reporting prevalence of homesickness exists within the contextual framework of higher education. Previous research on first-year residential students' adjustment at a university in the United States, found that 31% of the 198 participants reported experiencing homesickness (Fisher & Hood, 1987). However, a more recent comparable study on first-year college students found that 94% experienced some level of homesickness during their first semester away from home (English, Wei, Davis, & Gross, 2016).

Regardless of the variation in prevalence rate across the literature, homesickness is listed as one of the top complaints of student sojourners (Fisher, 2017). Research supports the assertion that some level of homesickness is a relatively common experience following relocation (VanTilburg, 1996). This phenomenon is a practically universal experience to any person, regardless of age, gender and cultural background, separating from their home (Fisher, 2017; Thurber, 2005). Homesickness is documented in various contexts; including, but not limited to: higher education, boarding school, sleepaway camp, military deployment, migrant workers, and immigration (Eurelings-Bontekoe, Vingerhoets, & Fontijn, 1994; Fisher, 2017; Fisher, Frazer, & Murray, 1986; Hack-Polay, 2012; Tartakovsky, 2007; Thurber, 2005).

As residing on a university campus rises in popularity, so has the interest in better understanding how homesickness impacts the overall college experience (Fisher, 2017). English, et al. (2016) collected quantitative data from 174 undergraduate students weekly throughout the first 10 weeks of the semester. The students completed questionnaires assessing their level of homesickness, adjustment and emotional experience, to examine how homesickness evolves during the first semester away at college, and whether there is an association between experiencing homesickness and the students' overall adjustment. The authors' found that students that reported feeling homesick had an overall worst adjustment in college in comparison to students that did not report experiencing homesickness.

Consequently, difficulty adjusting to the new college environment can lead to a student's decision to prematurely withdrawal from college. Thurber and Walton (2012) have cited that homesick students are "3 times more likely to drop out of school than those who were not homesick" (p. 416). Sun, Hagedorn, and Zhang (2016) supported this assertion, concluding that the distress linked to homesickness is associated with smaller chances of student retention in higher education.

In a search to better understand the specific factors linked to college retention, researchers found that, in comparison to students that graduated from college, the students that left college prior to graduation reported being more socially isolated (Daugherty & Lane, 1999). Likewise, Strayhorn (2019) emphasized how achieving a sense of belongingness and being connected within social and academic groups positively impacts retention rate. The important role of social support and a sense of belonging play in the overall college experience is a concept intertwined with homesickness, which will be discussed further in the literature review.

Given its prevalence, and negative impact on college satisfaction and graduation, the issue of homesickness among college students is an important topic to examine further. This literature review will provide readers a comprehensive understanding of homesickness, with a concentration on the context of higher education. The themes presented from past literature include the symptomology of homesickness, risk factors that increase vulnerability to experiencing this psychological phenomenon, and the effectiveness of treatment strategies aimed at reducing symptoms of homesickness.

Review of Research Literature for Homesickness

Belongingness Theory and Homesickness

One of the first theorists to introduce the importance of belonging in human development was Abraham Maslow (1954). Maslow's (1954) hierarchy of needs proposed that for us to reach our full potential, we must first meet prerequisites. In order from basic to most sophisticated, Maslow's needs included: physiological (shelter, food), safety (being secure and feeling safe), love and belonging (a sense of feeling connected with and cared by others), esteem (feeling a sense of competence and selfworth), and self-actualization. Maslow argued that if a person did not feel a sense of belonging they would not be able to reach a full and authentic sense of life satisfaction.

Drawing from Maslow's (1954) hierarchy of needs, the belongingness theory, founded by Baumeister and Leary (1995), proposed that the "need to form and maintain at least a minimum quantity of interpersonal relationships, is innately prepared (and hence nearly universal) among human beings" (p. 499). Baumeister and Leary suggested that the achievement of interpersonal acceptance leads to feelings of pleasure and fulfillment. On the contrary, when faced with rejection or a loss of previously established social bonds, people experience psychological disturbances. Consequently, the desire to feel pleasure and avoid emotional pain is what is believed to motivate human behavior to seek interpersonal acceptance (Baumeister & Leary, 1995).

Baumeister and Leary (1995) asserted that two conditions must be met for a person to satisfy their need to belong:

First, people need frequent personal contacts or interactions with the other person. Ideally, these interactions would be effectively positive or pleasant, but it is mainly important that the majority be free from conflict and negative effect. Second, people need to perceive that there is an interpersonal bond or relationship marked by stability, affective concern, and continuation into the foreseeable future (p. 500).

As presented by Beaumeister and Leary (1995), people not only need to have positive interpersonal relationships, but direct and frequent contact with attachment figures is necessary in order for people to successfully meet their belongingness need. The physical separation from home encountered by first-year resident students may be perceived as a loss of pre-established personal contacts, and consequently present a deficit in the person's need to belong.

The belongingness theory goes on to suggest that once people establish a strong bond, individuals will actively resist its dissolution (Baumeister & Leary, 1995). When the dissolution of pre-existing bonds occurs. Baumeister and Learv presumed people would experience psychological disturbances, such as feelings of loneliness and social isolation. When a student relocates from home to college. they undergo a sudden reduction in contact with previous social networks (Watt & Badger, 2009). For instance, prior to college, a student may feel a sense of belonging with their family unit, and friends they have had since elementary school. Conversely, during the initial transition to college, that same student is now living in a new environment surrounded by foreign people (Watt & Badger, 2009). Previous support is no longer accessible on a regular basis due to the physical separation of being away at college (Watt & Badger, 2009).

Adding to the dilemma, the importance of feeling a sense of belongingness is heightened during situations when a person finds themselves in an unfamiliar environment, and in particular during the transition into college (Strayhorn, 2019). Further supported by Thurber and Walton (2012), "the university environment also stirs nearly every student's innate desire to belong" (p. 416). In essence, the perceived dissolution of pre-existing bonds due to physical separation from home, paired with the innate desire to feel socially connected is viewed as the manifestation of home-sickness among college students (Watt & Badger, 2009).

Students going through homesickness during their first semester away at college may be feeling a sense of grief from the perceived loss of their support network (Fisher, 2017). Research on international students found that participants with a higher number of friends from their home country in their host country reported less homesickness, and a greater sense of being socially connected (Hendrickson, Rosen, & Aune, 2011). The students that felt socially connected, also reported a higher level of satisfaction with their college experience. As an international student in a foreign culture, socially engaging with familiar customs may have fostered a sense of belonging in the host nation.

It is interesting to note that even when relocating to economically better conditions, people may experience psychological distress and a yearning for home (Fried, 1966). As addressed by Fried (1966), "It is the sense of belonging someplace, in a particular place which is quite familiar and easily delineated, in a wide area in which one feels 'at home'" (p. 363). In the midst of urban renewal, Fried (1966) suggested that the psychological distress experienced by the majority of those who relocated partially stemmed from an interruption in their sense of belonging.

From the lenses of the belongingness theory (Baumeister & Leary, 1995) one may presume that as a student becomes more familiar with their new college surroundings, and begins to build new meaningful attachments, the student is likely to experience a sense of belonging in their new environment, and feelings of homesickness would lessen accordingly.

Themes Across the Literature

Although homesickness has an impact on sufferers' physical and mental health, the latest version of the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5) published by the American Psychiatric Association (2013) does not recognize this phenomenon. The DSM-5 (APA, 2013) is a "classification of mental health disorders with associated criteria designed to facilitate a more reliable diagnoses of these disorders" (p. xli). The reasoning for the exclusion lies in the notion that experiencing feelings of homesickness following a move can be an initial natural response to relocation, and not a mental health disorder (Fisher, 2017; Thurber, 2005). However, when the longing for home persists, and homesickness reaches the severe end of the spectrum, its symptoms can have a devastating impact on sufferers (Fisher, 2017; VanTilburg, 1996).

In addition to assisting mental health professionals to diagnose a mental illness, the DSM-5 (APA, 2013) can also facilitate the identification and implementation of potentially effective treatment modalities (APA, 2013). The multipurpose nature of the DSM-5, and the exclusion of homesickness from this resource creates specific challenges in defining, understanding and treating homesickness. Previous research has focused on exploring the symptoms, risk factors, and effective coping strategies associated with this phenomenon.

Symptomology of Homesickness

Symptoms of homesickness operate on a spectrum ranging from mild to severe with a potentially incapacitating impact on physical, cognitive, and psychological functioning (Fisher, 2017). The multi-facet features of homesickness are present across cultures, race, age, and contexts (Eurelings-Bontekoe, 1994; Fisher, 2017; Fisher, et al., 1986; Hack-Polay, 2012; Tartakovsky, 2007; Thurber, 2005). The review of the literature on the symptomology of homesickness serves the purpose of exploring the most common manifestations of this phenomenon in impairment of physical, cognitive, and psychological functioning. It is crucial to note that these symptoms are not inclusive, nor absolute, and different suffers can report varying levels of intensity in their personal experience and perceptions.

Physical Symptoms

The disruptive and stressful experience of homesickness has been suggested to generate a higher risk of ill-health (Fisher, 2017). Physical ailments, including disruption in sleep and appetite, increased risk of infection, and gastrointestinal issues is seen in people suffering from homesickness (Fisher, 2017; VanTilburg, 1996). The stressful nature of homesickness is linked to an increase in arousal. Consequently, high arousal, which impacts blood circulation may lead to physical ailments such as headaches or dizziness (Fisher, 2017). In a study among boarding school children, homesickness was positively associated with the frequency of experiencing non-traumatic ailments (Fisher, 2017).

The start of college/university may be met with high demands in the aspects of learning and following a new academic schedule, instruction style, and content, adapting to a new social life, and overall adjusting to the demands of the transition (Strayhorn, 2019). In conjunction with these high demands, first-year students may also perceive a lack of control over their ability to overcome homesickness and have a positive college experience (Fisher, 2017; Strayhorn, 2019; VanTilburg, 1996). Keeping this in mind, situations that are categorized by "high demand and low control" are associated with "raised effort and distress and high catecholamine and cortisol" (Fisher, 2017, p. 57). These hormonal changes are associated with a suppression of the immune system, thus leading to more frequent illness and infection. In this sense, a range of physical ailments are identified as a significant and potentially debilitating symptom of homesickness.

Cognitive Symptoms

The cognitive symptoms of homesickness can manifest as pervasive thoughts about longing for and a desire to return home, and pessimistic views about the new environment (VanTilburg, 1996). In a cross-cultural study on homesickness, rumination about home was a characteristic associated with college students in the United Kingdom and the Netherlands (Stroebe, et al., 2002). Implications have been made suggesting the potential negative impact rumination about home, a characteristic of the homesick experience, can have on the college experience, particularly within the academic setting (Fisher, 2017). Researchers have sought to understand if these pervasive thoughts have a negative impact on further cognitive functioning. The results are mixed, where in some instances a reduction in attentional ability (Burt, 1993), and higher scores on the Cognitive Failures Questionnaire (Fisher, Murray, & Frazer, 1985) were both linked to homesick university students. However, Fisher and Hood (1987) did not find a statistically significant difference in cognitive failure between non-homesick and homesick university students.

Nonetheless, the consistent negative cognitive processing regarding the new setting experienced by the homesick person has been suggested to further complicate the sufferers' psychological health. As evident in Fisher and Hood's (1988) assertion that "cognitive states associated with fundamental themes of missing and longing for home drive varying emotional and motivational states" (p. 317). This notion is further supported by Aaron Beck (1970), founder of cognitive behavior therapy, who proposed that "systematic study of self-reports suggests that an individual's belief systems, expectancies, and assumptions exert a strong influence on his state of well-being, as well as on his directly observable behavior" (Beck, 1970, p. 184). In other words, consistent negative thoughts about the new environment can have an impactful influence on the person's behavior and psychological functioning.

Psychological Symptoms

As previously suggested, cognitive symptoms of homesickness can potentially develop into pervasive mental health issues (Thurber & Walton, 2012). Emotional and psychological disturbances represented through depressive mood, loneliness, and anxiety are found in sufferers from homesickness (Fisher, 2017; VanTilburg, 1996). In particular, seminal work by Fisher and Hood (1987, 1988), and Fisher, Murray, and Frazer (1985) have found that homesick university students are more likely than non-homesick counterparts to exhibit symptoms of anxiety and depression. The psychological disturbances associated with homesickness, particularly in the form of depression, have been witnessed across cultures, age groups, and gender (Fisher 2017; Stroebe, et al., 2002).

In a quantitative study on Dutch adults, Verschuur, Eurelings-Bontekoe, and Spinhoven (2004) concluded that not only was depression and anxiety characteristics of homesickness, but the most vulnerable group susceptible to recurring homesickness from childhood through adulthood exhibited more depressive symptoms than the control group. Therefore, this finding suggests a positive association between depression and homesickness.

Research on the symptomology of homesickness has supported the assertion that homesickness is a complex phenomenon marked by varying levels of impairment in a person's physical, cognitive, and psychological functioning (Fisher, 2017). Studies to date have presented an association between homesickness, and physical ailments, pervasive thoughts about home, and depression (Fisher 2017; Stroebe, et al., 2002; Thurber & Walton, 2012). Furthermore, research has been suggestive of the adverse effects these symptoms can have on a sufferers' functioning (Thurber & Walton, 2012).

Risk Factors for Homesickness

While research on symptomology explains how homesickness impacts sufferers, studies on risk factors draw readers' attention on specific populations that may be more vulnerable to experience this phenomenon. Locus of control (Fisher, 2017), geographic distance (Sun, Hagedorn, & Zhang, 2016), and demographics (Sodowsky & Plake, 1992) are studied as potential risk factors for homesickness.

Locus of Control

As suggested by Fisher (2017), perceived control is an important aspect of a successful adjustment following a transition where a newcomer is likely to feel some level of temporary lack of control over their new environment. When defining the locus of control, research has perceived it as a lack of control over sufferers' ability to change their current environment, and also as a lack of control over the initial decision to relocate (Fisher, 2017).

In a study on children, age 8-16, attending a twoweek sleepaway camp, Thurber and Weisz (1997) explored the relationship between homesickness, adjustment, and perceived control. Results found that children who perceived low control over the trajectory of homesickness and the decision to temporality separate from home, were more likely to experience homesickness. However, contrary to these findings, the locus of control was not an influential factor for homesickness in children attending boarding school (Fisher, Frazer, & Murray, 1986).

In a higher education context, Fisher, Murray, and Frazer (1985) found that university students in the United Kingdom that reported having the primary responsibility of choosing to attend that particular university were less likely to experience homesickness, in comparison to students that felt pressured to attend university by parental influences.

Geographic Distance

A person's geographical distance away from home following a move is another risk factor, where researchers have predicted that the further away someone is from their home, the more likely they would be to experience homesickness (Fisher, 2017). The reasoning for this speculation has rested on the rationale that the longer the physical distance from home, the less frequent physical contact a person has with the people and settings they miss. Consequently, this inability or difficulty with contacting home and attachment figures is suggested to place sojourners at a higher risk of suffering from homesickness (Fisher, 2017). Specifically, in higher education, a quantitative study on first-year university students in the United Kingdom found a significant difference between homesickness and geographic distance from home. Students that were further away from home were more likely to experience feelings of homesickness (Fisher, et al., 1985). A more recent quantitative study on over 10,000 first-year students attending the University of Missouri over three years, further supported this assertion (Sun, et al., 2016). Sun et al. found that due to their geographic distance away from home, out-of-state students, in comparison to students attending university in their home state, were at a greater risk of experiencing homesickness.

However, similar to the comparison in the locus of control, a study on boarding school children did not find a significant difference in geographic distance from home and experiences of homesickness (Fisher, et al., 1986). In addition, Brewin, Furnham, and Howes (1989) did not find an association between geographic distance from home and homesickness among first-year students in their quantitative study. However, the authors also noted that the prevalence of homesickness in their sample at 39 percent was lower than the 60s to 70s percent prevalence found in other studies on first-year college students. Brewin et al. (1989) hypothesized that the lower prevalence found in their study is linked to the fact that in their sample the average distance from home was 200 miles, while previous studies reporting a 60s to 70s percent prevalence had an average distance from home of 300 miles.

Demographics

In reference to the impact demographics plays on homesickness, research has yielded mixed results. These results have ranged from no statistically significant differences to females and individuals under the age of 18 reporting higher prevalence of homesickness (Sun, et al., 2016). Other researchers have cited, due to increased perceived discrimination, race as a risk factor associated with the homesick experience (Sodowsky & Plake, 1992).

The disparity in perceived discrimination among racial groups on college campuses is highlighted by previous research. Poyrazili and Lopez (2007) found that European international students reported less perceived discrimination on college campuses, in comparison to non-European international students. Likewise, Biasco, Goodwin, and Vitale (2001) found that the darker the person's skin color, the more likely they were to experience discrimination. Although these studies were suggestive of a lack of belonging experienced by students of color, they did not directly connect race as a risk factor for homesickness.

However, seminal work by Sodowsky and Plake (1992) made the association between race and the homesick experience. In a mixed methods study, Sodowsky and Plake utilized quantitative instruments to measure acculturation and perceived prejudice by participants. Openended survey questions were used to examine themes of self-identity and transition to a new culture. Sodowsky and Plake found that in comparison to European international students, students of color were more likely to perceive prejudice in their host nation. In addition, perceptions of prejudice were also found to be positively associated with homesickness. Therefore, the research findings suggest that international students of color were more vulnerable to the homesickness experience than European international students.

Although previous research has identified race as a risk factor to homesickness, a recent study by Sun, et al., (2016) contradicted Poyrazili and Lopez's (2007) findings. In a quantitative investigation, Sun, et al. concluded that students of color did not report a significant difference in homesickness in comparison to white peers, despite residing in a university with predominately white students.

Coping Strategies

The research presented thus far has concentrated on studying symptoms and risk factors of homesickness. Although these findings help provide a better understanding of homesickness, the studies fall short of producing applicable information. Specifically, information pertaining to the effectiveness of treatment modalities for homesickness among college students is not well documented. Respectfully, we turn our attention to a review of the literature that suggests that mental health counseling (Saravanan, Alias, & Mohamad, 2017), social connections (Denovan & Macaskill, 2013), and achieving a sense of belonging in a new environment (Watt & Badger, 2009), are crucial ingredients in alleviating homesickness.

Social Support and Belonging

Mental health counseling is often recommended to those struggling with the intense longing for home (Fisher, 2017). Although research is limited, the benefits of counseling have been empirically tested in treating homesickness. In particular, international students presenting with symptoms of homesickness and depression in Malaysia were found to experience a significant improvement in their mental health state after receiving seven sessions of cognitive behavior therapy (Saravanan, et al., 2017). However, as addressed by Saravanan et al. (2017), counseling is not an available option for all students either due to lack of access, or personal and cultural preferences.

Pursuing a comprehensive understanding of effective treatment modalities, Saravanan, Alias, and Mohamad (2019), conducted a follow-up study examining the coping strategies used by international students suffering from homesickness who were reportedly not interested in receiving counseling. The authors asserted that information could help counselors and college administration develop an effective treatment to assist homesick students. Out of the 520 international students away at college in Malaysia diagnosed with homesickness and depression, nine were found to have effectively treated their condition solely using self-administered coping strategies. Semi-structured interviews were conducted with the nine students to learn what self-help interventions assisted the students in overcoming homesickness and depression. Some of the common themes found from the interviews included talking to a trusted peer, engaging in social and physical activities, and engaging in positive self-talk. Therefore, even though these participants did not receive support from the counseling staff, their symptoms of homesickness were alleviated partially through the enhancement of social supports.

Likewise, in an interpretative phenomenological analysis of the first-year experience in higher education, a common theme emerged suggesting that initial lack of social support worsened feelings of homesickness. However, as students began to develop a solid social support system at college, they began to feel a sense of belonging and adjustment (Denovan & Macaskill, 2013).

The role support and belonging play in treating homesickness is further supported in Thurber's (2005) guantitative research, which tested the effectiveness of a multimodal homesickness prevention package on boys ranging in ages eight to 16 who were spending two weeks away from home at a summer camp for the first time in their lives. As the name suggested, Thurber's treatment package concentrated on preventive measures of addressing homesickness. Among other factors, social support played a key role in Thurber's prevention package. Prior to the departure to summer camp, all of the participants received an introductory telephone call from a camp staff member. The rationale behind this strategy suggested that these telephone calls would assist campers in feeling a sense of connection with at least one person at the campsite prior to arrival. Thurber hypothesized that these preventive strategies would lead to less homesickness among campers, in comparison to the campers from the previous year who did not have access to the prevention package.

Results confirmed that the severity of homesickness varied significantly from the control group to the treatment group. Thurber (2005) concluded that the campers that received the prevention package experienced less intense homesickness. Quantitative data from this study further highlights the vital role social connections and a supportive environment play in reducing the negative effects of homesickness.

As noted in the literature review thus far, social support and belongingness are intertwined. Strayhorn (2019) asserted:

In terms of college, sense of belonging refers to students' perceived social support on campus, a feeling or sensation of connectedness, and the experience of mattering or feeling cared about, accepted, respected, valued by, and important to the campus community or others on campus as faculty, staff, and peers (p. 4).

Researchers found that a lower perceived sense of belonging at college was predictive of a higher likelihood of experiencing homesickness (Sun, et al., 2016). Based on these results, Sun et al. (2016) speculated that "Once students feel more integrated to the university context, they are more likely to feel accepted, which will reduce the degree of homesick distress" (p. 955). However, the researchers did not empirically test the remediating effects of college integration and belonging on homesickness.

Watt and Badger (2009), on the other hand, did attempt to test the direct impact of belonging on homesickness. In a two-part study, Watt and Badger first explored the association between homesickness and the need to belong, followed by an experimental study seeking to prove a causal relationship between these two variables. Participants were international students from 42 distinct countries, ranging from 18 to 45 years old, studying at five different universities in Australia. Homesickness and the need to belong were both measured using quantitative tools, with participants' reported number of friends being indicative of the students' level of support on campus.

Although the researchers found a positive association between homesickness and the need to belong, they were not able to support the substitution hypothesis, which suggested that social connections in a new place can fulfill the need to belong by replacing the connections from back home. According to the substitution hypothesis, homesickness will dissipate once social support is formed (Watt & Badger, 2009). However, the measurement of social support in this study raises the dilemma of whether quantity or quality holds more weight in determining social support satisfaction.

Reflecting on the complex definition of belongingness provided by Strayhorn (2019), measuring a sense of belonging by merely accounting for the number of friends seems insufficient and oversimplified.

Gap in Literature and Concluding Remarks

A review of the existing literature on homesickness identifies common symptoms and risk factors associated with the phenomenon, as well as effective coping strategies to assist with recovery. Homesickness is a condition that can negatively impact a person's physical, cognitive, and psychological well-being (Fisher, 2017). Although prevalent among individuals regardless of race, age, and gender, risk factors including geographic distance from home, perceived locus of control, and race have been linked to a potential increase in vulnerability to homesickness (Fisher, 2017; Fisher, et al., 1985; Sodowsky, & Plake, 1992; Sun, et al., 2016).

As a means of helping sufferers, cognitive behavior therapy, and achieving a sense of belonging through social connections in the new environment are helpful during relocation (Saravanan, et al., 2017; Sun, et al., 2016).

At the conclusion of their study, which involved an analysis of homesickness, Fisher, et al., (1985) found that "homesickness is not a unitary concept; rather, it is a term that encompasses a wide range of individual thoughts, feelings, and attitudes, focusing primarily upon the former home and family" (p. 191). The complexity and subjectivity of the homesick experience bring to question whether standardized quantitative tools provide an accurate assessment of this phenomenon. Reflective of this inquiry, some of the seminal work on homesickness introduced in this literature review yielded contradicting results (Fisher, et al., 1985, 1986; Fisher & Hood, 1987). Perhaps one of the reasons these studies are finding conflicting data lies in their method of investigation.

Accounting for the personal nature of this phenomenon, qualitative measures through interviews may enable researchers to gain a deeper perspective of the unique experience of individual sufferers of homesickness. As indicated by Firmin, Johnson, and Basham (2009), a qualitative research design provides "more in-depth explorations of student perspectives regarding this topic than typically could be garnered via other research approaches, such as surveys" (p. 58).

Echoing the need for gualitative investigation, previous quantitative researchers have recommended future studies to focus on concepts best investigated through qualitative measures. Sun, et al., (2016) made the following recommendations:

Future researchers must continue to enhance scholars' understanding of the homesick experiences that either facilitate or hinder students' development and growth in college. We suggest future researchers conduct a small-scale study, taking a qualitative approach to understand why some students suffer great distress after arriving at college ... Future researchers could take a longitudinal approach and collect data multiple times during students' transition process. In so doing, educational researchers and practitioners could gain more insight into first-year college students' behavior and performance (p. 955).

This review of research literature related to homesickness among college students presents valuable information that can aid mental health clinicians, and higher education administration in developing appropriate treatment options and resources to assist college students to overcome feelings of homesickness and to have a successful college experience.

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15



By Audra Cerruto, Ph.D., and Rickey Moroney, M.S.

Abstract

Master's-level teacher candidates enrolled in a private Catholic college in the suburbs of New York City participated in a 10-week tutoring program that brought to campus parochial elementary school students with diverse learning abilities. The purpose of the program was twofold: to improve the teaching and learning of the graduate students. Teacher candidates completed the Teachers' Sense of Efficacy Scale at the beginning and again at the completion of the tutoring program and generated reflective entries into their journal after each session. Through a mixed-methods approach, quantitative and qualitative results indicate that the teacher candidates' hands-on experiences affected their teaching approach by motivating students, implementing alternative instructional strategies, and utilizing a variety of assessment methods.

Introduction

Teacher-training programs have been encouraged to offer "clinically rich" programs to foster the development of effective teaching practices (Chamblin, Cerruto, Moroney, & Mason, 2018: National Council for Accreditation of Teacher Education, 2010; New York State Department of Education, 2011; U.S. Department of Education, 2009, 2011). The traditional student-teaching model is the most widely implemented opportunity for teacher candidates to develop and hone the art and skill of teaching. However, this model has some limits, as it is typically the final step in a training program and may not be as clinically rich as needed in this demanding field (National Council for Accreditation of Teacher Education, 2010). Student teaching emphasizes classroom management and knowledge of the curriculum (Chalies, Ria, Bertone, Trohel, & Durand, 2005; Graham, 2006; Valencia, Martin, Place, & Grossman, 2009). Clearly, there is much more to teaching, such as building relationships, motivating reluctant learners, and implementing formative and summative assessment results that affect teaching and learning.

Hands-on, experiential-learning opportunities embedded within coursework help prepare pre-service teachers by offering them a structured teaching experience with a limited number of students; direct faculty supervision; and other co-teachers to support one another in preparation, execution, methodology, and assessment. The inclusion of experiential learning during teacher candidates' enrollment in coursework in teacher-training programs may provide a variety of "clinically rich" opportunities to develop skills, professional habits, and attitudes that are essential to become effective teachers (Chamblin et al., 2018). Through the mentoring process, pre-service teachers engage in the teaching and learning process with the guidance of a mentor teacher who can focus on the developmental progress of the pre-service teacher rather than a preset expectation of student teaching (Chamblin et al., 2018). Kolb (1984) describes experiential learning as concrete experiences outside the classroom that are processed and applied to future experiences. This learning experience includes opportunities to plan, assess, and reflect on successes and failures over a period of time. Inherent in the experience is the opportunity to develop confidence and competency in one's ability as a teacher, otherwise known as teacher self-efficacy.

In response to the need to fill a gap between coursework and theory on one hand and the student-teaching experience and practical applications of theory on the other hand, a service-learning project was developed that brought elementary school students with diverse abilities to a college campus to receive tutoring services. A 10-week tutoring program was established that identified each elementary-age student's learner profile, including academic strengths and weaknesses as measured by NWEA MAP testing and archival data presented by the school district, multiple intelligence profile and learning preferences as measured by online surveys, and parent/student concerns and requests. The teacher candidates developed personalized educational materials, educational videos, and prototype manipulatives and implemented apps, teacher tools, and instructional videos available on the internet into activity plans. They were guided to utilize formative assessment tools to measure the effectiveness of the teaching/learning process and to adjust their approach to maximize learning. Kolb's (1984) experiential model was applied using specific tools to elicit planning, assessing, and reflecting on successes and failures of each session, specifically through the use of activity plans, formative assessments, and reflective journals. The measurement of the teacher candidates' perceptions of their experiences and development of their skills was monitored through a self-efficacy tool.

Programs utilizing mentors to address the specific needs of pre-service teachers have demonstrated through service learning projects that authentic opportunities to apply educational research and theory into best practices facilitates meaningful relationships between teacher candidates and professors. These opportunities to engage in reflection impacts dispositions, skill level, and teaching competency. To measure competency, self-efficacy principles are applicable. To monitor shifts in dispositions and the impact of an experience, reflective journals have been utilized in research. In the following section, the research on self-efficacy and reflective journals are presented.

Self-Efficacy

An important contributing factor in success is selfefficacy, a person's perceptions of individual competencies to complete an activity on any topic (Bandura, 1997). Through the lens of social learning theory, competency may be affected by guided performance, modeling, and appraisal of one's performance (Bandura, 1977, 1982). Early in the development of self-efficacy theory, Bandura (1977) postulated four major sources of information that affect success: performance accomplishments, vicarious experience, verbal persuasion, and physiological states. Taking these sources into account, teacher candidates can evaluate and ultimately rely on their sense of self to build on their teaching skills and will become realistic, but positive, in their self-assessments. If individuals judged themselves as capable and successful, this thought positively affected performance (Bandura, 1982).

As social learning theory took its shape, self-efficacy, the impact of modeling behavior, and the belief in oneself as competent made an impression on the classroom experience. Teacher efficacy is explained as a teacher's judgment as to the knowledge and skills one possesses and applying those beliefs about his or her capabilities and capacities to affect students' success (Bandura, 1993; Brouwers & Tomic, 2003; Tasgin & Kucukogl, 2016; Tschannen-Moran & Woolfolk Hoy, 2001; Zundans-Fraser & Lancaster, 2012).

Teacher self-efficacy is based on outcomes such as persistence, enthusiasm, commitment, and instructional behavior, as well as student outcomes such as engagement, learning achievement, motivation, and self-belief. Teachers' efforts in the classroom, attitudes toward students, planning, organization, persistence, resilience, goals, and level of aspiration are strongly influenced by their self-efficacy (Tschannen-Moran & Hoy, 2001). Tasgin and Kucukoglu (2016) postulated that to translate theory into practice, teacher candidates must examine their student-teaching experience and the preparation they received in their teacher education program using the following categories of self-efficacy: student engagement, teaching strategies, classroom management, and cooperation among all involved stakeholders (e.g., the candidate, cooperating teacher, school administrators, and higher education faculty). Tschannen-Moran and Hoy (2001) advocated for a clinical practice modeled after medical and clinical psychology student preparation programs that strongly promote cooperation and a shared experience for all stakeholders. They also used the Teachers' Self-Efficacy Scale developed by Tschannen-Moran and Woolfolk-Hoy (2001) as a tool to measure efficacy. Furthermore, Derosier and Soslau (2013) suggested placing the emphasis on supporting teacher candidates and adding rigor to teacher-training programs to facilitate the development of confidence in their abilities. Moreover, Tschannen-Moran, Woolfollk-Hoy, and Hoy (1998) emphasized that theoretical classes create self-efficacy in teacher candidates through indirect experiences; however, practice classes grow selfefficacy through direct experiences. Experiential learning environments that mirror classroom settings affect teacher candidates' self-efficacy positively by qualifying teacher candidates with professional skills in this context. Teacher candidates learn through hands-on teaching, guidance from experienced faculty, support from fellow candidates in a coteaching model, the use of teaching strategies to engage and motivate their students, and formative assessments to monitor and measure progress. Therefore, what is considered important in research is the effect of teacher candidates' performance in light of their self-efficacy perceptions, which are defined as their beliefs of each individual's motivations, feelings, thoughts, acts, as well as gualities of effective behaviors that can be developed in an individual (Bandura, 1997; Zimmermann, 1995), Indeed, measuring self-efficacy periodically during teacher candidates' classroom experiences should show measured progress.

Cayci's (2011) and Fallon's (2007) studies highlighted the positive and meaningful relationships between the elementary teacher candidates' teacher efficacy and their attitudes toward the profession of teaching. Cayci postulated that four sources contribute to efficacy: direct experiences (one's own successes), indirect experiences (observation of others), oral persuasion (encouraging the individual), and the individual's physiological and psychological conditions (emotions about an action). Fallon (2007) believed that teachers should focus most importantly on the relationship they develop with their students because they become the catalyst for students' curiosity and learning experiences.

Evans and Tribble (1986) examined the personal relationship between teachers (teacher candidates) and their students. They believed this to be the most important component ("significant others"), defining it as collective efficacy. It supports the development of student resiliency, rigorous and relevant learning environments, and intellectual curiosity and mastery in students. They further believed that many problems experienced by pre-service teachers such as classroom discipline, student motivation, and meaningful differentiation can be mitigated by establishing personal relationships with students, especially when they have a positive sense of self-efficacy. In other words, they believe they have the power to influence their students' classroom behavior, motivate their students, and differentiate instruction.

Reflective Journals

The reflective journal as utilized by a teacher candidate in a teacher-training program is a written response to a teaching/learning experience that fosters the examination of one's role as a teacher, the perceived effectiveness of one's delivery of instruction, his or her awareness and sensitivity to the needs of students, and one's beliefs and ideologies of teaching and learning (Brown, Cheddie, Horry, & Monk, 2017; Clarke, 2004; Ragawanti, 2015). Using the journal as a method of self-reflection and self-exploration, teacher candidates can engage in professional growth in an unstructured or semi-structured activity (Ragawanti, 2015). Clarke (2004) had student teachers engage in reflective journal writing during an internship to investigate the use of reflective journals in the teaching/learning experience. The journal entries revealed trends that coincided with specific phases according to the Dietz model of professional learning. Ragawanti (2015) implemented the reflective journal to facilitate the development of classroom management skills, which is a concern among pre-service teachers. Brown et al. (2017) implemented journal writing with early childhood teacher candidates and reported that journal writing promoted selfawareness about the knowledge and skills necessary to be an effective early childhood professional. To determine students' perspectives about a teaching strategy. Cupita (2016) utilized Lankskkhear and Knobel's definition of journals as "data that participants are asked to write in order to collect their personal insights and reflections on an event, practice, concept, phenomenon" (p. 94).

Baleghizadeh and Mortazavi (2014) implemented reflective journaling to determine if it had any significant effect on students' performance on the General Self-Efficacy Scale by Sherer et al. (1982). Results showed that learners who utilized a reflective journal gained higher selfefficacy scores than those who did not use journaling techniques. The act of creating a written record of performance accomplishments and documenting how the students achieved their goals has been identified by Bandura as potentially increasing self-efficacy (Baleghizadeh & Mortazavi, 2014). The usefulness of reflective journals to qualitatively measure teacher candidates' thoughts and reactions to the tutoring experiences to encourage professional growth through the process of self-reflection and self-exploration is implemented in this study to provide evidence of growth in a student teacher's self-efficacy.

The purpose of this study is to research the impact that the introduction of this clinically rich teacher-education methods class has had, particularly on the teacher candidates' self-efficacy perceptions as teachers-in-training. In this context, the research question is as follows: Does an experiential learning project influence teacher candidates' perception about self-efficacy?

To create a clinically rich learning environment for teacher candidates, a tutoring program was estab-

lished within a graduate-level teaching methods course. The program provides opportunities for teacher candidates to interact with elementary school students, teachers, families, and brings to life the elementary school curriculum to develop effective teaching and learning strategies for diverse learners.

Method

Program

A 14-week graduate-level special education methods course met 2.5 hours once a week on Saturday mornings. Over ten sessions, a tutoring program was embedded into the class. The first hour of the class consisted of the tutoring session and the remainder of time was devoted to lectures/discussions of educational and psychological theories and the application of educational technology, special education strategies, assessment methods for best practices, and small- and large-group discussions that addressed issues and concerns about the tutoring sessions, as well as debriefing sessions.

Participants

Twenty-eight teacher candidates were enrolled in the special education methods course. These candidates had a variety of experiences interacting with students in an academic setting. Some were working in schools as head or assistant teachers, while others had never worked in a school setting.

There were 11 students in the tutoring program, ranging in ages from 5 to 13, enrolled in kindergarten through sixth grade. The participants were recruited from a local parochial school. They were invited to participate in the program based on recommendations from the administration and special education teachers at their school. Some of the students had IEPs, 504s, and others may have been considered at-risk students.

Procedures

The tutoring program took place at the college in a variety of classrooms and common spaces. Technology was available for the sessions, which included SMART Boards, iPads, desktop computers, laptops, and smartphones. Activity plans were uploaded to a learning-management system prior to the session to enable reviews and comments by the teaching faculty. The tutoring sessions included one tutee and between 1 to 3 tutors. Tutors collaboratively designed hands-on, interactive activities in the areas of math and English language arts to address the individual needs of the tutees based on data such as report cards, IEPs, 504, NWEA results, and teacher reports. Parent conferences were held with the teaching faculty and teacher candidates to better understand each child's learning needs.

Design

To assess the impact of the experiential learning experience on the teacher candidates' perceptions, a selfefficacy survey was administered. The survey selected was utilized by the London School Excellence Fund (2015) that investigated perceptions of self-effectiveness in the use of pedagogic strategies and the development of student relationships in classroom settings. The survey, adapted from Tschannen-Moran and Hoy (2001), explored aspects of efficacy in student engagement and instructional strategies. For each survey, a mean was calculated for the individual scores at baseline, which was administered after the second tutoring session and at the end of the course. If there was a difference between the mean scores of each survey, this might be due to a shift in the teachers' perspective on their effectiveness in general pedagogical skills and their relationships with students.

A reflective journal is an additional tool utilized to explore changes in teachers' perceptions of their effectiveness in pedagogical skills and relationship building with students. The reflective journal was completed after each tutoring session for a total of 10 entries. It included contemplation on the effectiveness of the activities produced and executed through the application of theory into practice. Teacher candidates were encouraged to deliberate about their strategies, methods, and assessments, including levels of engagement and instructional approaches to facilitate teaching and learning.

Results

A paired t-test was utilized to evaluate the teacher candidates' ratings on the Self-Efficacy Scale. The Scale was administered after the second tutoring session and at the end of the tutoring program. The 16 survey items were examined. Based on the paired t-test, the data are

				Paire	d Sample	es Test			
		Paired Differences							
					95% Co Interv Diffe	onfidence al of the erence			
		М	SD	Std. Error Mean	Lower	Upper	t	df	Significance (2-tailed)
Pair 1	SpringPost1 - SpringPre1	.172	1.104	.205	248	.592	0.841	28	0.408
Pair 2	SpringPost2 - SpringPre2	.276	1.556	.289	316	.868	0.955	28	0.348
Pair 3	SpringPost3 - SpringPre3	.138	1.432	.266	407	.683	0.519	28	0.608
Pair 4	SpringPost4 - SpringPre4	.310	1.391	.258	219	.840	1.201	28	0.240
Pair 5	SpringPost5 - SpringPre5	.172	1.256	.233	305	.650	0.740	28	0.466
Pair 6	SpringPost6 - SpringPre6	.172	1.627	.302	447	.791	0.571	28	0.573
Pair 7	SpringPost7 - SpringPre7	.310	1.466	.272	247	.868	1.140	28	0.264
Pair 8	SpringPost8 - SpringPre8	.276	1.509	.280	298	.850	0.984	28	0.333
Pair 9	SpringPost9 - SpringPre9	.345	1.289	.239	146	.835	1.440	28	0.161
Pair 10	SpringPost10 - SpringPre10	.000	1.069	.199	407	.407	0.000	28	1.000
Pair 11	SpringPost11 - SpringPre11	.172	0.966	.179	195	.540	0.961	28	0.345
Pair 12	SpringPost12 - SpringPre12	.276	1.437	.267	271	.822	1.034	28	0.310
Pair 13	SpringPost13 - SpringPre13	.172	1.466	.272	385	.730	0.634	28	0.532
Pair 14	SpringPost14 - SpringPre14	.034	1.658	.308	596	.665	0.112	28	0.912
Pair 15	SpringPost15 - SpringPre15	.138	1.575	.292	461	.737	0.472	28	0.641
Pair 16	SpringPost16 -	.379	1.545	.287	208	.967	1.322	28	0.197

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not statistically significant for any of the 16 questions (p < .05) on the Teacher Candidates' Self-Efficacy Scale (see Table 1). The overall average score on the pre-test was 7.319 and the post-test was 7.554, demonstrating insignificant increases in scores.

Four items on the Teacher Candidates' Self-Efficacy Scale were identified as most meaningful to the tutoring program. An item analysis of these four items was conducted. For each of the items, 3, 4, 11, and 12, there was an increase in average scores, albeit statistically insignificant. For Question 3 (How much can you do to motivate students who show low interest in schoolwork?), the pre-test average was 7.52 and the post-test average was 7.66. For Question 4 (How much can you do to get students to believe they can do well in schoolwork?), the pre-test average was 7.69 and the post-test average was 8.0. For Question 11 (How much can you do to adapt your lesson to the proper level for individual students?), the pre-test average was 7.52 and the

post-test was 7.69. For Question 12 (How much can you use a variety of assessment strategies?), the pre-test average was 7.59 and the post-test was 7.86.

To further analyze the four critical items on the Self-Efficacy Scale (Items 3, 4, 11, and 12), the data were put in Dedoose, a qualitative data analysis software that facilitates the analysis of mixed-methods research. Doing this helped examine the key items of the Teacher Candidates' Self-Efficacy Scale and the frequency of those concepts in the teacher candidates' reflective journals. Each teacher candidate's reflective log was reviewed by two readers to identify specific elements classified as promoting engagement and utilizing instructional strategies. Elements were coded into seven categories for engagement and eight categories for instructional strategies (see Table 2). The purpose of the analysis was to determine if these two major elements were evident in the tutoring program.

		Paired	Samples S	Statistics	
		м	N	50	Std. Erro
Pair 1	SpringPre1	7 24	29	1 327	246
	SpringPost1	7.41	29	1 240	230
Pair 2	SpringPro2	7.10	29	1.240	201
	SpringPost2	7.38	29	1 178	219
Pair 3	SpringPre3	7.52	29	1 271	236
	SpringPost3	7.66	29	0.897	167
Pair 4	SpringPre4	7.69	29	1 391	258
i un 4	SpringPost4	8.00	29	0.802	149
Pair 5	SpringPre5	6.90	29	1.205	.224
	SpringPost5	7.07	29	1,132	.210
Pair 6	SpringPre6	7.52	29	1 214	225
	SpringPost6	7.69	29	1.168	.217
Pair 7	SpringPre7	7.31	29	1.198	.223
	SpringPost7	7.62	29	0.942	.175
Pair 8	SpringPre8	7.14	29	1.302	.242
	SpringPost8	7.41	29	1.086	.202
Pair 9	SpringPre9	7.59	29	1.268	.236
	SpringPost9	7.93	29	0.923	.171
Pair 10	SpringPre10	7.31	29	1.228	.228
	SpringPost10	7.31	29	1.004	.186
Pair 11	SpringPre11	7.52	29	0.949	.176
	SpringPost11	7.69	29	0.761	.141
Pair 12	SpringPre12	7.59	29	1.053	.195
	SpringPost12	7.86	29	0.915	.170
Pair 13	SpringPre13	7.21	29	1.292	.240
	SpringPost13	7.38	29	0.820	.152
Pair 14	SpringPre14	7.14	29	1.274	.237
	SpringPost14	7.17	29	1.002	.186
Pair 15	SpringPre15	7.45	29	1.325	.246
	SpringPost15	7.59	29	0.825	.153
Pair 16	SpringPre16	7.31	29	1.312	.244
	SpringPost16	7.69	29	0.891	.165

Item 3 on the Teacher Candidates' Self-Efficacy Scale addressed the impact of the teacher candidate to motivate students who show low interest in schoolwork. In the journal entries dated February 4, 2017, "motivation" was mentioned 76 times; on April 1, 2017, it was mentioned 99 times. Item 4 on the Teacher Candidates' Self-Efficacy Scale addressed the impact of the teacher candidate to get students to believe they can do well in schoolwork. In the journal entries dated February 4, 2017, "instilling belief" was mentioned 0 times; on April 1, 2017, it was mentioned 6 times. Item 11 on the Teacher Candidates' Self-Efficacy Scale addressed the teacher candidates' adjustment of the lesson to the proper level of students' functioning. In the journal entries dated February 4, 2017, "adjusting lesson" was mentioned 5 times; on April 1, 2017, it was mentioned 65 times. Item 12 on the Teacher Candidates' Self-Efficacy Scale addressed the teacher candidates' use of a variety of assessment strategies. In the journal entries dated February 4, 2017, "use of a variety of assessment strategies" was mentioned 0 times; on April 1, 2017, it was mentioned 109 times.

Based on the journal entries, there appeared to be a shift in the teacher candidates' attention to pedagogical skills and their relationships with their tutees. Based on the frequency in which the teacher candidates mentioned key skills, it appears that they demonstrated taking more time to engage their tutees in the thinking and learning process and utilizing instructional strategies to teach and assess learning.

Discussion

Summary

The purpose of this study was to research the impact that the introduction of a clinically rich teacher education methods class has had on the effects of teacher candidates' self-efficacy perceptions as teachers-in-training. In this context, the research question was, "Does an experiential learning project influence teacher candidates' perception about self-efficacy?" To create a clinically rich learning environment for teacher candidates, a tutoring program was established within a graduate-level teaching methods course. The program provided opportunities for the teacher candidates to interact with elementary school students, teachers, and families, and bring to life the elementary school curriculum to develop effective teaching and learning strategies for diverse learners.

Teacher candidates completed a survey from the London Schools Excellence Fund (2015) that investigated perceptions of self-effectiveness in the use of pedagogic strategies and the development of relationships with students in classroom settings. The survey, adapted from Tschannen-Moran and Hoy (2001), explored aspects of efficacy in student engagement and instructional strategies. A paired t-test analysis did not demonstrate a significant difference in pre-test and post-test results on the self-efficacy survey. The mean scores on the pre-tests items were lower than post-test means, suggesting a shift in teachers' perspective on their effectiveness in general pedagogical skills and relationships with students. A limitation of this survey is teacher candidates' concern that their survey scores may affect their course grade despite assurances from the instructors that this would not be the case. In addition, teacher candidates completed the post-test survey at the end of the semester when many teacher candidates are under pressure and stress to complete coursework and prepare for final exams.

Teacher candidates completed a reflective journal to document the effectiveness of the activities produced and executed through the application of theory into practice. They

Table 3: Tutors' Reflections Qualitative Analysis for	s as Analyzo or Tutoring	ed on Dedo Sessions	ose:
Strategies, Methods & Assessments	Feb. 4, 2017	April 1, 2017	Total
Engagement			
Think critically	3	22	25
Motivate	76	99	175
Instill belief	0	6	6
Value learning	0	33	33
Foster creativity	34	28	62
Improve understanding	64	75	139
Assist families	1	0	1
Total Engagement	178	263	441
Strategies, Methods & Assessments	Feb. 4, 2017	April 1, 2017	Total
Instructional Strategies			
Respond to difficult questions	0	11	11
Monitor student understanding	9	136	145
Craft good questions	2	12	14
Adjust lessons	5	65	70
Use a variety of assessments	0	109	109
Alternative explanations	0	51	51
Alternative strategies	22	202	224
Appropriate challenges	12	112	124
Total Instructional Strategies	50	698	748
Total Engagement & Instructional Strategies	228	961	1189

Directions for Scoring the Teachers' Sense of Efficacy Scale¹

Adapted from Megan Tschannen-Moran, College of William and Mary Anita Wollfolk Hoy, the Ohio State University.

Construct Validity

For information on the construct validity of the Teachers' Sense of Teacher Efficacy Scale, see: Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing an elusive construct. Teaching and Teacher Education, 17, 783-805.

Subscale Scores

To determine Efficacy in Student Engagement and Efficacy in instructional Practices subscale scores, compute unweighted means of the items that load on each factor. Generally, these groupings are:

Efficacy in Student Engagement: Items 1, 2, 3, 4, 6, 9, 10, 14 Efficacy in Instructional Strategies: Items 5, 7, 8, 11, 12, 13, 15, 16

Using this survey

This survey should be conducted at least twice, once prior to the intervention and once after the intervention. You may wish to create an online version of the survey (i.e. using survey monkey) to avoid manually collecting survey results. However, if you do so please make sure the questions and rating scale are accurately replicated. All collection and analysis of survey responses will need to be conducted by program staff or their evaluators. Project Oracle will not be able to support direct evaluation activities.

Analyzing Results

Mean scores should be collected across all respondents for each question to demonstrate the average 'sense of efficacy' each time the survey is conducted. The mean scores from the first and the second time the survey was conducted can then be compared to show distance travelled.

Where the numbers of teachers completing surveys are particularly large, evaluators may wish to calculate the reliability (Cronbach's alpha) across the set of responses for each category of questions. If reliability scores are high (i.e. 0.8 or above) they may then wish to calculate the mean from a sample of guestions, rather than analyzing the data for all 16 questions. Evaluators should be able to calculate the alpha from the survey data collected.

were also encouraged to deliberate about their strategies, methods, and assessments, including levels of engagement and instructional approaches to facilitate teaching and learning. Journal entries were analyzed for specific themes related to the self-efficacy survey and analyzed in Dedoose. The shift in the frequency that the teacher candidates mentioned specific levels of engagement and instructional strategies suggested that they were increasingly thinking about pedagogical skills and relationships with their tutees during the semester.

This clinically rich experience was a valuable opportunity for the teacher candidates to interact with a student under the direct supervision and guidance of a faculty member. Through coursework and mentoring, teacher candidates began to develop activities and implement strategies to facilitate teaching and learning. While

this experience represents only the beginning stage of the teacher candidates' journey to becoming a certified teacher, it seems to be a positive step toward this goal.

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	<u>REFLECTIVE LOG</u>
Name:	
Current Course: EDU 572	
Date of this session	Time: 9 AM to 10 AM
Grade level:	
dated entry into a <u>one-word document</u>	a reflection paper about each session. Please save each reflective t.
Added entry into a <u>one-word document</u> <u>Here are some questions to guide you</u> How receptive were the students to the you do differently if you repeated the ac the students ask? What kind of questi think you challenged your students? V to gauge student comprehension? If s could you implement in the future to f	a reflection paper about each session. Please save each reflective t. <u>ur reflection</u> e activities? Did you feel the session was successful? What would trivity? Did the students value the lesson? What kind of questions did ions did you ask? Were you able to differentiate on the fly? Do you Vhat was your biggest challenge during the session? Were you able so, how did you do this (what tools did you implement)? If not, what facilitate your understanding of your students' comprehension?

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Teacher Candidates' Perception of Acquiring TPACK in the Digital Age through an Innovative Educational Technology Masters Program

By Maria Esposito, Ed.D., and Rickey Moroney, M.S.

Abstract

The TPACK (Technological Pedagogical Content Knowledge) model is a technology integration framework that identifies three types of knowledge that educators need to bring together for successful edtech (educational technology) integration - technological, pedagogical, and content knowledge (a.k.a. TPACK). This model used by educators when they implement digital tools and strategies to support teaching and learning. TPACK was developed by educational researchers Kohler and Mishra (2005) and is designed with the concept that content (what we teach) and pedagogy (how we teach) is the basis for any technology that teachers plan to use in their classroom to enhance learning. The purpose of this research was to investigate how the TPACK model helped teacher candidates acquire knowledge for teaching with technologies.

Introduction

In a local college's School of Education and Human Services, teacher candidates are prepared to use best practices of integrating technology into their classrooms or their future classrooms through hands-on projects and technology service learning in both the graduate and undergraduate technology courses, as well as through a new, innovative graduate educational technology program and in methods courses. The educational technology program's focus is on the TPACK model, in which integrated technologies are developed and transformed through learning experiences that are blended throughout a two-year cohortbased program. According to Maeng, Mulvey, Smetana, and Bell (2013), preservice teachers develop their expertise by selecting and using technology appropriately. They use technology for inquiry to present and engage, to facilitate data collection and data analysis, as well as to communicate and discuss results. Technology is essential to the teacher candidates' success as well as the overall program success in their preparation.

Teacher candidates come from various disciplines as content experts, thus the TPACK model fits well into each content area and facilitates the honing of their technology pedagogy. The TPACK model is seen through the use of individualized and cooperative group lesson and unit planning, course development, research- based cutting- edge technology projects such as 3D printing, electronic portfolios, e-textbook chapters, virtual reality, artificial intelligence and robotics along with ISTE (International Society for Technology in Education) guidelines. By designing technological artifacts or tasks to solve instructional problems, teacher candidates learn to teach with the TPACK model (Koehler & Mishra, 2005). This process facilitates teacher candidates' transformation of their content knowledge using the TPACK model to enhance their teaching.

Research supports student-driven programs to develop successful TPACK model programs. For example, Lu and Lei (2012) stated that "to help preservice teachers develop TPACK in a learner-centered, project-based, learning environment, we propose to integrate into this environment a Live Dual Model (LDM) strategy, which involves both live behavior modeling and cognitive modeling" (pp. 14-15). The combination of a student- driven approach, a blended delivery system, and a sequential course design, TPACK for technology integration is an effective model for instruction. In a blended learning environment, teacher candidates communicate, collaborate, and create integrated, interactive technology learning applications for course requirements in a series of technology-based courses that prepare candidates in areas such as technology foundations, digital literacy, mobile learning, integrating digital age tools, technology leadership, interdisciplinary studies, observation and practicum, and assistive technologies to name a few. The series of technology-based courses is devised of foundations, applications, leadership, and scholarship. This sequential technology education program (STEP) approach has courses designed to ensure teacher candidates are building the requisite skills as they advance to the next level.

The purpose of this paper was to assess teacher candidates' perceptions of successful technology integration of the TPACK model using three methods: (a) hybrid delivery system using the Canvas Learning Management (LMS), (b) the STEP approach, which is a sequential program design of foundations, applications, and leadership and scholarship, and (c) a student driven method of content delivery. The following research question was explored: Do the blended learning experience, the STEP sequential program design, and a student driven approach promote the teacher candidates' perceptions and their acquiring of knowledge for teaching with technologies through TPACK?

Literature Review

Our review of the literature indicated that there is emerging research that supports the design models for successful TPACK technology integration. The TPACK model is "effective in helping preservice teachers develop TPACK in a technology integration course. The findings showed that the preservice teachers demonstrated the initial ability to transfer what they learned in the modeling to classroom teaching" (Lu, & Lei, 2012, p.14). Developing a responsive program that meets the needs of teacher candidates is an important component in training future teachers to successfully replicate the TPACK model as they progress through an educational technology program. Student-driven teaching and learning meets the needs of teacher candidates because it allows for individualization of the TPACK model in a variety of content areas. Assignments in the sequential educational master's program follow a student- driven design in allowing teacher candidates a way to model this teaching method in developing their TPACK method of technology integration. "With the advent of the technology, a salient component of teaching is not only to use technological gadgets to teach but also to integrate technological knowledge into pedagogy in order to offer quality student learning" (Szeto, & Cheng, 2017, p. 348).

Maeng et al. (2013) supported learner-centered and reform-based instruction to integrate technology into a graduate teaching program to support teacher candidate's use of the TPACK model in their student teaching. The authors' goal was to use educational technology to support students and demonstrate their development of TPACK technology enhanced instruction. Their data points included observations, lesson plans, interviews and reflections. Their results indicated their preservice teachers were successful incorporating technology appropriate to their "content and context" of their teaching and learning (p. 838). They concluded that their study's "realistic and practical examples of technology-enhanced inquiry offer insight that may ease the necessary transition teacher-centered, lecture-style teaching to more learner-centered, reform-based teaching" (Maeng et al., 2013, p. 855). Further, they emphasized that the lesson examples both developed and implemented by preservice teachers may be attainable for both experienced and inexperienced preservice and in-service teachers. Maeng et al. (2013) suggested that research in the future should develop a better understanding of the decision-making process for technology integration that supports teaching and learning for preservice and in-service teachers.

In an attempt to help preservice teachers learn about teaching with technology Lu and Lei (2012) developed the Live Dual Model (LDM). The purpose of their study was to develop a program, Live Dual Modeling through which preservice teachers would model teaching to peers in their courses. Live Dual Model was a studentcentered approach to help students integrate TPACK into their teaching experiences (Lu, & Lei, 2012) Their results indicated that "LDM helped the preservice teachers bridge their content knowledge and their pedagogical knowledge, expand their understanding in pedagogical knowledge, and transfer the technology integration ideas from the modeling to real-world classroom teaching..." (Lu, & Lei, 2012 p. 20).

Technology integration is evident in schools across Long Island, New York. According to a study of middle school teachers across Nassau and Suffolk Counties on Long Island, New York, teachers use technology integration aligned with ISTE technology standards but not equally balanced across the recommended indicators (Esposito, 2013). According to Esposito,

...teachers use digital tools to promote student learning and reflection often, promote digital citizenship often, use digital tools to communicate and collaborate with parents and community often, agree that principals support their technology efforts, use digital tools to communicate and collaborate with peers and colleagues sometimes, promote global awareness sometimes, and strongly agree their school supports their technology efforts. (p. 92)

Esposito (2013) recommended teacher preparation programs incorporate ISTE standards into practice and consider adopting the TPACK model for technology integration to support the needs of the students who are "global citizens in the 21st century" (p. 92). Built upon previous research this current study is designed to further develop the idea that teacher preparation programs that are carefully designed in a STEP format, offer flexibility in a hybrid delivery system, and focus on student-centered learning will promote successful technology integration using the TPACK model of instruction.

Background

Hybrid Delivery

"'Hybrid' or "Blended" are names commonly used to describe courses in which some traditional face-to-face "seat time" has been replaced by online learning activities. The purpose of a hybrid course is to take advantage of the best features of both face-to-face and online learning" (Learning Technology Center, 2018, p. 1).

Hybrid course models are pedagogically flexible and can vary greatly depending on how the instructor schedules and structures on campus face-to-face and off campus web-based sessions. These decisions are based on course objectives, learning goals, course content, and available resources. Pedagogical decisions on schedules for delivery method vary according to the needs and schedules of students, instructors, academic calendars, classroom space, and computer lab availability.

Table 1. STEP S	equence Courses in the Masters' of Education	nal Technology Program
STEP	Courses Titles	TPACK Development
Foundations	 Foundations of Educational Technology Analyzing Digital Media in Teaching and Learning Assessment Tools for Educational Technology Interdisciplinary Curriculum and Methods in Educational Technology 	CK of the TPACK model TK of the TPACK model • Student discussion directors established • Educational technology theories explored and shared using digital age tools • Digital literacy research based discussions presented in multimedia formats • Evaluate a variety of secure online assessment tools • Infusing cutting edge technology in all curriculum areas developing appropriate digital age technology tools to deliver content
Application	 Instructional Applications of the Internet- Integrating Digital Age Tools into Instruction, Classroom Management, Communication and Collaboration Educational Website Design, Video Integration, Distance Learning, Blended and Virtual Schools Mobile Learning and Teaching With Social Media For Educational Technology 	PK of the TPACK model TK of the TPACK model • Lesson and unit planning is developed following the PK and TK of the TPACK instructional model • Teacher candidate create websites that are designed to facilitate collaboration and instruction rich in technology integration • Curriculum and course design is developed • Policies for social media and mobile learning are created to use in schools
Leadership and Scholarship	 Educational Technology Practicum Seminar Educational Technology Practicum Developing Reflective Research Practice in the Educational Technology Rich Classroom Environment Teacher as Researcher in the Educational Technology Rich Classroom Environment 	 TPACK model emphasized Observations of best practices, unit and lesson planning, integrating technology, and implementation during the practicum K-12 field placement Reflections of professional practice Formal year long research thesis with an IRB

Courses are designed using modules which can be configured by either the sequence of sessions throughout the semester or by topics covered during the course. The learning modules should be consistent in their approach and configuration. They may contain an overview of the module including learning objectives, support materials such as videos and readings, assignments, quizzes, surveys, and discussions.

The advantage of a hybrid delivery system to the students is that they can learn at times that are most convenient to their schedules "anytime, anywhere learning.". It is truly a student driven system. The hybrid format on our Canvas Learning Management System (LMS) encourages both synchronous and asynchronous communication and collaboration among students and faculty through a variety of available user-friendly tools including announcements, discussions, conferences, peer review, group projects, collaboration among groups through third party apps such as Google docs, and live chat.

Project-based, real-world learning is the basis for assignments in each course. Classrooms are open and all participants contribute to the body of knowledge being built in a learning community that often includes cutting edge ideas and the newest technology. A few examples are student Edcamps and discussion directors. Edcamps are participant-driven events allowing attendees to collaboratively determine the session topics and are presented by and for students.

STEP Sequential Course Design

Careful consideration of emerging technologies and current pedagogies helped design the sequence of courses. In obtaining the New York state approval for a master's program in educational technology, a needs-assessments of classroom teachers assisted and fostered the development of course design and sequence. Both faculty and teacher candidates in the educational technology master's program use TPACK model of instruction in course delivery. Teacher candidates hold an initial teaching certificate and have a concentration in a specific content area. The pedagogy presented to teacher candidates in this program is student driven and collaborative in nature, with a strong TPACK model of instruction for the purpose of technology integration in subject areas or in the area of teaching teachers how to integrate technology into core-content area teaching. This is accomplished by faculty modeling TPACK and student- driven, models of instruction for technology integration. Similarly, Szeto and Cheng (2017) shared their view of the importance for preservice teachers to have the ability to "explore and integrate technology in their pedagogical and content knowledge" (p. 351). The authors designed a four-themed approach of TPACK development for preservice teachers to include curriculum and assessment, learning, teaching, and access (Szeto, & Cheng, 2017). The STEP design includes foundations, application, leadership, and scholarship. Each of the areas include specific courses that assist in the development of skills that foster each step and build greater understanding of TPACK design and technology integration. In the first set of courses, foundations, the CK (content knowledge) and the TK (technology knowledge) are emphasized in the delivery and curriculum of study. For this master's program, the content knowledge developed is the theories, applications, and assessment tools common to educational technology. The technology knowledge is developed in all three sections related to the student needs and content. The second, applications, the PK (pedagogical knowledge) skills are developed as teacher candidate's work on lesson and unit planning rich in integrating technology. In the last set of courses, leadership and scholarship, the TPACK model is wholly developed and practiced in a professional practicum experience. Teacher candidates spend 50 hours in the K-12 field classroom environment. Table 1 shows the STEP design for the master's of educational technology.

Student Driven Learning Environments (SCLEs)

Hannafin and Land (2000) defined student-centered learning environments (SCLEs) as ones that "provide complimentary activities that enable individuals to address unique learning interests and needs" (p. 4). They found that important thinking processes, and learner engagement-when coupled with technology-are essential. Hannafin and Land concluded that student-centered learning environments may have emerged because of the advances of technology and that educators must continue to be aware of the changes in technology and optimize new ways of teaching for teacher candidates. As technology advances and new ways of communication and collaboration become more readily available, advances in the way professors interact with teacher candidates will also evolve.

The Canvas Learning Management System permits professors to incorporate online tools and outside applications into courses facilitating more collaboration, such as Prezi (www.prezi.com) and other presentation tools. Teacher candidates can collaborate on presentations and post their work on discussion boards in Canvas. Google applications are also integrated, external tools that promote document sharing and collaborating. Student-driven course assignments can be found in multiple sections. modules, assignments, and pages. Some examples of student driven assignments include lesson/unit planning using website design, interviewing educational technology professionals in a K-12 environment, and course design for professional development or higher education. Utilizing the TPACK model for technology instruction, teacher candidates develop lessons and unit plans in most of the educational technology courses. Lesson planning for teacher candidates may be student- driven through choices that can include topic, standard addressed, strategy, method, technology, activity, and/or assessment selections. Before presenting lessons in class in a modeling format, teacher candidates discuss the TPACK model and address the intersections of TK, CK, and PK in small group discussions and help in developing technology-rich plans.

Methodology

The main purpose of the study was to determine whether or not there was evidence of (a) teacher candidates' perception of development of their knowledge for teaching with technologies through TPACK through their experiences in the hybrid LMS delivery system and method, (b) course design in their progression of TPACK modeling for instruction, and (c) student-centered approach. Professional standards for managing and conducting research was obtained through the IRB (Institutional Review Board). A survey was administered to study participants who comprised of students in the master's of educational technology program with New York State certification in a range of initial and professional certification areas and content areas. Participation was voluntary and anonymous.

Students were asked 19 Likert-scale questions to determine their perceptions on how they rated the hybrid blended delivery system, STEP design including the areas of theory, using TPACK model of integration for lesson design and implementation, and leadership and scholarly roles in the local and greater community. Justification for an online survey included that students were accustomed to online surveys in their studies for all classes they attended. Response categories ranged from not at all to always for all questions in the three categories. In addition, demographic questions about subject area concentration, teaching level, and number of years teaching were also included.

Data Collection

This study was conducted using an online survey to identify teacher perceptions of the hybrid learning management system, the STEP course design features, and the student- driven approach in learning and applying the TPACK model of technology integration into their teaching. Teacher candidates were sent an email with a link to the online survey using the Canvas LMS. An educational technology program TPACK Pre-Professional Student Survey administered online to the first cohort group of 15 teacher candidates in the educational technology program via Survey Monkey to evaluate the perceptions of the teacher candidates in the three areas of the program's concentration: the hybrid nature of course delivery; the program's course sequencing designed to take teacher candidates from course on a foundational level, through an application level, and culminating in a scholarship and

leader level; and finally the student-driven nature of the program. Demographic questions were used to gather vital information about the candidates and to get a sense of who they are and what their teaching experience in the field might be.

Data Analysis and Findings

This survey was administered to teacher candidates in their last semester of the first educational technology cohort group. It was used to evaluate the program on all three levels of the program's design. Question 1 was designed to evaluate experiences using blended or hybrid learning tools, question 2 evaluated the program's course sequence design, and question 3 assessed the student-driven attributes of the program and Questions 4 through 8 gather demographical data.

The results of the educational technology program TPACK Pre-Professional Student survey are: the responses Not at All has been assigned a 1; Rarely a 2; Sometimes a 3; Most of the Time a 4; and Always a 5. Questions 1 to 3 in this section of the survey referenced the program's three areas of focus: the blended or hybrid deliver system, the sequential nature of the program, and the student- driven pedagogy.

Question 1 solicited teacher candidates' perceptions on the blended or hybrid delivery system, asking questions about their feeling of success in the blended learning environment, the tools available to them in the LMS to navigate, organize, manage their course work, usage of online discussions in the LMS, ease of communicating and collaborating with course mates utilizing the LMS, submission of assignments, checking course grades and getting feedback from peers and instructors through the LMS. The overall average response from the teacher candidates was 4.77 out of 5.

Question 2 asked teacher candidates to evaluate the STEP progressive sequencing nature of the program including the importance and the necessity of integrating technology into teaching and learning; their understanding of the TPACK model and the theory behind its use; designing, developing, implementing lessons, and leading based on sound scholarly research practices using the TPACK model within their content area and preferred teaching method. The overall average response from the teacher candidates was 4.8 out of 5.

Question 3 invited teacher candidates to rate the program's student- driven coursework by applying the TPACK design model through the use of collaborative tools, the LMS, the hybrid course format, the program's course sequence, the application of prior knowledge, theory, methods, strategies, and best practices, the program's unique activities such as Edcamp and discussion directors, as well as their confidence in accepting leadership roles and doing scholarly research. The overall average response from the teacher candidates was 4.917 out of 5.

Questions 4 through 8 deal with the demographical data of the first educational technology cohort group which consisted of fifteen teacher candidates. Students were spread throughout the disciplines, with eight from the concentration of math, four teaching English, seven social studies teachers, four science teachers, five special education teachers and one teaching assistant. The average age of the teacher candidates sampled was 25 years 8 months, with the oldest candidate being 34 and the young-est 23 years old.

Implications for Practice

The implications of this study inform the educational technology community of the importance of meeting the needs of the non-traditional teacher candidates. By offering hybrid courses at non-peak times for on campus meeting, shrinking course durations to seven-week semesters, and running courses continuously and concurrently throughout the year. As well as reducing costs drastically so that teacher candidates can complete the program in as little as 20 months and can apply for an individual path to state certification is essential. We hope to eventually go fully online as well as offer the program at various satellite center throughout an expanded yet localized area.

Conclusion

The purpose of the educational technology master's program is to develop teachers TPACK model of instruction into teaching and learning. The combination of the hybrid delivery, STEP course design, and the student driven approach has positively been evidenced as a one way to advance TPACK knowledge for teacher candidates. The purpose of this study was to include teachers' perception of the program components related to their own TPACK model of instruction technology integration for future program development. As discussed in the data analysis section, teacher candidates agree the components in the educational master's program have contributed to their development of the TPACK model of instruction in their teaching and learning. This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors; however, the research was supported by this College.

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Abstract

The purpose of this article is to examine the compelling evidence of childhood obesity across the world and within the United States and the major contributors to this health crisis. Factors contributing to the obesity health crisis and potential interventions are given a preliminary analysis within related research literature.

Overview of the Issue

According to the Center for Disease Control's most recent data, the prevalence of obesity is now 18.5% among youth (compared to 39.8% in adults). This statistic is slightly higher (20.6%) if one considers adolescents aged 12-19. Based on ethnicity, rates are highest for Hispanic (25.8%) and Non-Hispanic Black (22%) whereas Non-Hispanic Asians have the lowest rate (11%). Non-Hispanic white rates fall in between at 14.1% (Hales, Carroll, Fryar, & Ogden, 2017). These data are based on the National Health and Nutrition Examination Survey (NHANES), a survey research program conducted by the National Center for Health Statistics to longitudinally assess the health and nutritional status of adults and children in the United States.

According to the World Obesity Foundation: Atlas of Childhood Obesity, October 2019, the current number of children ages 5-19 years old living with obesity is 158 million individuals. This number is predicted to rise to 254 million by 2030 (retrieved from www.worldobesity.org 10/15/19).

Tim Lobstein, the director of Policy at the World Obesity Federation, was a contributing editor for this WHO document. He has been a tireless advocate in combating childhood obesity, focusing efforts on the marketing of food and beverages to children, nutritional policies and programs and on health inequalities and income disparities. Obesity, previously believed to be a factor of over-nutrition, currently is strongly associated with poor diet. New research is now linking obesity with under-nutrition. Known as the double burden of malnutrition, obesity, and under-nutrition are often seen in the same person (Dietz, 2017). This problem among U.S. children has become a health crisis within the last three decades (Tim Lobstein et al., 2015). According to Lobstein et al in the 2015 study, it is the energy-rich but nutritionally poor diet that leads to rapid weight gain. He suggests a need for improvements to governmental nutrition policies, commercial food promotion and marketing to children. Despite documented childhood weight gain, significant nutritional deficiencies co-exist, often leading to stunting (short stature).

Most Americans consume the Standard American Diet (SAD) which is very high in ultra- and highly processed foods. These food choices are very unbalanced, nutritionally speaking and can sometimes contribute to 60% of daily calories and 90% of added sugars (Eurídice Martínez Steele et al., 2016). Most ultra-processed foods are high in sugar, refined carbohydrates (like sugar and grain-based foods) and chemically altered industrial seed oils (canola, soybean and other seed oils). This phenomenon seems to be increasing worldwide. According the findings from Euridice et al., ultra-processed foods are cheap and of lower quality ingredients. However, factors like a pleasant mouth feel, enjoyable taste, palatability and sensory enjoyment make them highly desirable.

In contrast, these food choices have little-to-no nutritional value and are very high in calories. Food manufacturers work very hard to showcase the positive (taste) to disguise the negative aspects (excessive sugar leading to weight gain, poor nutritional value) of their products (Euridice Martínez Steele, Popkin, Swinburn, & Monteiro, 2017). It appears that it is the hyper-palatability, long shelf-life and portability which makes these foods so attractive to busy families and children.

Despite the fact that processed foods are easy and fast to prepare and to consume, it is this very convenience that is hurting our children. Problems cascade from these conveniences. Consumption of these convenience foods are believed to alter the brain's perception of appetite, reward and cognitive control and appears to lead to additional cravings associated with convenience foods. Obesity is often the result. Manipulation by food manufacturers goes mostly undetected by most Americans (Blechert, Klackl, Miedl, & Wilhelm, 2016). Foods like sodas and other sweetened beverages (includes fruit juice), sweet or savory snacks, reconstituted meat products, prepared frozen meals, sweetened yogurts, boxed and bagged foods like chips, pretzels, cookies, crackers and cereals all fall into this category. Mostly all of these food choices are made with artificial ingredients (sweeteners, flavors and colors) as well as with highly oxidizable fats like seed oils and trans-fats. They are also poor sources of healthy fats, protein and fiber as well as of important micronutrients like potassium, iron, calcium and magnesium.

Efforts to try to achieve improved food fortification through enrichment have failed miserably. Lobstein et al participated in a study in conjunction with the World Obesity Federation, (2019) asserting that reducing the obesity rates (and associated under-nutrition) targets for 2025 are likely to fail. He warns those in the medical field to expect an increase in significant obesity linked health problems, especially in children (T. Lobstein & Jackson-Leach, 2016).

Health Effects associated with Obesity

Health problems traditionally only seen in the adult population like hypertension are increasingly found in children (Samuels, Bell, Samuel, & Swinford, 2015). They are often associated with obesity. Type 2 Diabetes (T2DM), a dangerous metabolic disease previously only diagnosed in adulthood, is now often found common in children and adolescents. The development of T2DM in youth is particularly dangerous for the cognitive abilities of our young people, but also for their overall health.

A study by M. Constantino, et al. on the relationship of T2DM diagnosed in youth comparing complication risk and mortality, found that the progression of complications (kidney disease and neuropathy) occurred faster and more aggressively than in adults (AI-Saeed et al., 2016). Constantino first identified this problem in a prior study about the dangers of T2DM in youth compared to type 1 diabetes and found T2DM to be the far more aggressive type of diabetes (Constantino et al., 2013).

"Treatment Options for T2DM in Adolescents and Youth" (the TODAY study), a large-scale study from 2007, examined the benefits of intensive and sustained lifestyle interventions to children from mainly racial/ethnic minorities with T2DM. It found that despite good glycemic control (blood sugar control), the metabolic abnormalities of abdominal adiposity, hyperlipidemia, hypertension and early kidney disease were not ameliorated (Zeitler, P., Epstein, L., Grey, M., Hirst, K., Kaufman, F., Tamborlane, W., & Wilfley, D. (2007). A 2013 follow up study on TODAY found that hypertension and early kidney disease progresses despite adequate glycemic control (Lynch, J., Elghormli, L., Fisher, L., Gidding, S. S., Laffel, L., Libman, I., Pyle, L., Tamborlane, W. V., Tollefsen, S., Weinstock, R. S., & Zeitler, P. (2013). Glycemic control is achievable by using pharmaceuticals however their use is limited in the pediatric population compared to their use in adults. This study suggests that lifestyle interventions (improving diet and increasing daily activities) to gain glycemic control will help preserve the health and cognitive function of our young people. Merely achieving glycemic control with pharmaceuticals only addresses the symptom of the problem.

The cause of the problem, rooted in poor food choices, too little physical activity and subsequent obesity must be addressed to adequately improve health outcomes.

In addition, poor childhood nutrition is associated with increased risk of health problems when entering adulthood (Banfield, Liu, Davis, Chang, & Frazier-Wood, 2016). Poor dietary patterns that start in infancy, can also be associated with poor learning and cognitive abilities later in life. Poor school performance and low academic achievement have been linked to overconsumption of high energy foods and excess body mass (obesity) (Pearce, Scalzi, Lynch, & Smithers, 2016). This Australian study found that children who are obese in their first year of school may be exhibiting a lower level of cognition compared to their healthy weight peers. This phenomenon is believed to be evolutionary.

A 2019 paper in Trends in Cognitive Sciences authored by Mark Mattson discussed how it is not consistent with our DNA to overconsume on dietary energy (mainly sugar and carbohydrates) with little energy output (daily activity). However, that pattern appears to be very consistent with modern human lifestyles. Over several million years, humans have evolved specific eating patterns with frequent periods of food scarcity, that is not consistent with the current paradigm of eating "three meals a day."

An overconsumption of calories when eating the SAD is inconsistent with a frequent human evolutionary metabolic state known as "ketosis". Ketosis is a metabolic switch in energy utilization from sugar to fat, which cannot happen when consuming a diet high in sugar and carbohydrates and eating three or more times a day. Mattson concludes that chronic excessive energy intake is associated with impaired cognition. Specifically children's excessive abdominal adiposity in children associated with insulin resistance is the driving force in impaired cognitive function, poorer academic and occupational achievement compared to normal weight classmates (Mattson, 2019). This state of excessive abdominal adiposity in children leads to type 2 diabetes (T2DM) in youth; a more dangerous metabolic state for children than for adults since childhood, a progressive and dynamic stage of human development, is highly sensitive to nutritional needs. This condition profoundly affects cognitive development as well as physical growth.

Brain Development and Cognition in Youth

Evidence suggests that improving brain development in our children should be of utmost priority. In a study in 2016 "The Role of Nutrition in Brain Development", Cusick and Georgieff identified that children's diets often mirror their parents (Cusick & Georgieff, 2016). Poor parental food habits are passed on to their children. The long-term consequences of poor nutrition (from gestation through toddlerhood) and subsequent poor cognitive performance will cost society profoundly. They identify poor quality protein, low intake of healthy fats and poor intake of important micronutrients (iron, zinc and iodine) in the SAD to be contributing factors (see Table 1).

Micronutrient	Essential For:	Dietary Sources	Special Notes:
IRON	Necessary for oxygen transport in Hemoglobin – red blood cells Prevents Anemia	Heme-Iron: Well-absorbed by humans Animal Products: Red Meats, Organ Meats, Seafood and Shellfish <u>Non-Heme-Iron: Not well- absorbed by humans</u> Spinach, Kale, Collard Greens Legumes (beans, lentils)	Iron supplementation is essential in Vegans and Vegetarians. Many common iron supplements associated with constipation and dark stools Vitamin C enhances iron absorption
IODINE	Critical for fetal and brain development Essential for proper reasoning and overall cognitive function in youth	Wild-caught seafood Seaweed Eggs	Iodine supplementation is essential in Vegans and Vegetarians. Also recommended for general population if not obtained from dietary sources to support healthy thyroid function
Vitamin A	Essential for eyesight and immune function Supports cellular growth and cell differentiation	Associated with foods high in Beta-Carotene: Carrots Sweet Potatoes & Yams Winter Squash Spinach, Kale, Collard Greens	Prior attempts to fortify foods have not adequately reduced vitamin A deficiency problems world-wide - mainly due to poor absorption issues
ZINC	Immunity and resistance to infection Proper neurological growth, protein synthesis and cell division	Animal products: Meats and Eggs Shellfish Legumes Nuts & Seeds	Main ingredient in many cold lozenges. To be taken at first onset of common cold symptoms
FOLATE (Vitamin B9)	Essential for fetal neurological development (brain, spinal cord, nerves) Adequate levels known to reduce fetal neural tube defects Necessary for adequate red blood cell production	Liver and Organ Meats Legumes Asparagus Spinach Artichokes	Folate supplements VASTLY differ from Folic Acids supplements. Folate is best obtained from a healthy diet, but folate supplements may be absorbed adequately Folic Acid is synthetic and many consider toxic – not recommended

Table 1 **Common Nutritional Deficiencies associated with SAD****

** Obtaining these necessary micronutrients from "enriched" grain products (like breads, crackers, pasta, noodles and other sources like legumes) are not absorbed well in the human gastrointestinal tract due to high levels of naturally occurring phytates. Therefore, the bioavailability of these essential micronutrients from these sources will be lower than from other sources like animal products and vegetables.

Chronic undernutrition including iron and iodine deficiencies have been found to further contribute to poor child brain and neurological development (Grantham-McGregor, Fernald, Kagawa, & Walker, 2014). This study found that children benefited from nutritional interventions including supplementation for both their development and nutritional status.

This problem is noted to begin in infancy as nutrition is important for cognitive development starting from the beginning of life. Brain development is enhanced from early childhood, having long-term effects on cognitive performance through adolescence (Nyaradi, Oddy, Hickling, Li, & Foster, 2015). Poor quality foods, processed foods, fast foods, high carbohydrate and sugary foods are not associated with a healthy brain. Healthy fats have been extensively studied to be associated with overall health and brain and neurological development (Gershuni, 2018). However, the rapidly developing brain during adolescence is particularly vulnerable to poor nutrition and it is this time of life that requires the most nutritious foods for adequate brain development (Reichelt & Rank, 2017).

Unhealthful dietary patterns were found to be associated with poorer academic achievement in an independent study done in 2019 (Bleiweiss-Sande et al., 2019). The researchers used a diverse sample of over 860 children obtained from 3rd and 4th grade in an urban school in the Boston area. When unhealthful foods like sweet snacks, salty snacks sweetened beverages and even fruit were highly consumed, math and English standardized test scores were lower compared to controls. They were surprised to find fruit to be associated similar to other sweet foods. This was not expected since fruit is generally considered to be a healthy food, although it may be overconsumed by children. Based on these findings, it may be assumed that dietary changes may positively influence child academic achievement and development.

In a systemic review from 2013, both math and language learning were found enhanced by both physical activity and improved nutrition among school age children. The implementations of school health promotion interventions was encouraged (Pucher, Boot, & De Vries, 2013). A study done on Korean children found that diet impacts cognition and learning in profound ways. Kim & Kang found a link between overconsumption of carbohydrates, specifically noodles, white rice and ramyeon (Korean instant noodle) and impairment of verbal memory, test scores and reasoning. It also found increases in inattention and impulsivity. Their study also found that the consumption of fast food and Coca-Cola was related to poor cognitive function, especially working memory, test scores and reasoning (Kim & Kang, 2017).

It is not just school work that suffers for obese and malnourished children, but also behavior issues. There is evidence that obese children have more behavior problems than non-obese children (Carey, Singh, Brown III, & Wilkinson, 2015). These researchers cited internalizing problems (low self-esteem, sadness, acting withdrawn) and externalizing problems (arguing, fighting, disobedience) along with school disciplinary problems (detentions and suspensions) more prevalent among obese children.

In light of the SAD in the U.S., Florence et al found a strong association between childhood overweight, underlying poor dietary habits and poor school performance (Florence, Asbridge, & Veugelers, 2008). Their findings suggest enhanced learning as an additional benefit of a healthy childhood diet. They also identified overweight children to have lower levels of academic achievement. Their findings affirmed that it was not specifically the weight of the child, but the poor nutrition associated with being overweight that was the problem. Overall, the daily intake of healthy foods will have the most impact on improving cognitive function in youth. Their suggestions call for improvement of school nutrition programs that also have potential to improve student's academic performance. Since this study was conducted in 2008, many schools have already started to implement nutritional improvement programs.

How Can Schools and the Government Help?

In a study conducted in Oregon in 2015, teachers were asked how to incorporate nutritional knowledge into current curriculum. Most teachers reported that current approaches to nutritional education during childhood and adolescence have been largely ineffective in changing current students' food choices. They cited barriers to change to be: competing academic expectations, lack of suitable curricula and food environment at school and home that does not support what is taught in class (Perera, Frei, Frei, Wong, & Bobe, 2015).

Despite these difficulties, schools in the U.S. are the ideal setting to implement interventions to promote nutrition and physical activity. One such school district in Chicago decided to implement their own experiential learning program to incorporate hands-on cooking for students to improve nutrition knowledge (Jarpe-Ratner, Folkens, Sharma, Daro, & Edens, 2016). This 10-week after-school cooking and nutrition course was taught at each of the 17 schools using professional chefs. Chefs completed a standardized training and were issued a curriculum upon training completion. The curricula were reviewed by a registered dietician and related to the premise that a home food environment high in accessibility of vegetables and other healthy foods predicts diet quality in children.

Parents have a strong influence on the food choices made by their children and were included in the treatment by encouraging them to attend a special presentation. This study, sensitive to cultural food variations, found that it is possible to increase healthy behaviors within a family based on an experiential cooking and nutrition education program. According to their findings, although behavior change is not easy, children's exposure to new foods, different ways to prepare them and the positive

	Carbohydrates	Fats	Protein
GO	Non-starchy Vegetables:	<u>SFA*:</u> Coconut oil, palm	Animal Sources:
Green Enjoy Daily!	Like artichokes, asparagus, beets, Brussels sprouts, broccoli, carrots, cauliflower, celery, cucumber, eggplant, green beans, leafy greens*, jicama, leeks, mushrooms, okra, onions, peppers, radishes, snap peas, sprouts, summer squash, spaghetti squash, tomato, turnips, zucchini <u>Eat fruit in-season:</u> Like blueberries, blackberries, strawberries, raspberries are best. Other low sugar fruits include pears, apples, peaches, lemons, limes, oranges, grapefruit, avocado, green bananas	kernel oils, grass-fed butter, ghee, fatty fish*, eggs, dark chocolate <u>MUFA*s:</u> Olives, olive oil, avocado, avocado oil <u>PUFA*:</u> Flax, leafy greens*, fatty fish*, chia seeds Some full-fat dairy (plain yogurt, cheese)	Grass-fed* and organically raised meats, wild-game meats*, pasture- raised poultry, wild- caught fish, seafood, pasture- raised eggs, liver, organ meats, unprocessed bacon <u>Vegetable Sources</u> Nuts*, seeds
CAUTION	Starchy Vegetables:	Flaxseed and hempseed	Factory raised
Yellow	Like beans and lentils (legumes) corn, peas, white potatoes, parsnips, plantains, sweet	oils	grain-fed beef, lamb, pork, poultry
Eat on Rare Occasions	Quinoa, Buckwheat, Wild Rice <u>Avoid fruit out of Season:</u> most too high in sugar content for all year consumption Rarely eat melons and tropical fruit (ripe bananas, pineapple, papaya) - high in sugar		fish Factory raised eggs Legumes, beans lentils, peanuts Fermented soy
STOP	Processed, Prepackaged & Fast-Foods:	Chemically-Altered Oils:	Highly processed
Red	Anything from a bag, box, bottle, package and most cans. Includes Pizza and most take-out & convenience foods	Canola, soybean, sunflower, safflower, corn, cottonseed, grapeseed, peanut oils	meats (hot dogs, bacon, ham, corned beef, pastrami, salami) made with
ever, eat these dangerous,	<u>Grains & Grain Products:</u> Like wheat, rice, corn, oats, rye, millet, bulgur, amaranth, barley, farro, triticale, teff, spelt	Partially-hydrogenated trans-fats	chemicals, dried- meats, deli meats, chicken nuggets
nutritionally boor & highly nflammatory foods	This includes bread, cereal, pasta, noodles, crackers, cookies, muffins, cake, wraps, tortillas	Margarines Low-fat & non-fat dairy (yogurt, cheese)	Unfermented soy
	Sweets:		

*<u>Fatty Fish</u> – Include mackerel, salmon, anchovies, sardines, tuna, herring, squid, shellfish; <u>Grass-fed meats</u> – Beef, Lamb, Pork, Bison; <u>Leafy greens</u> – Include beet greens, cabbage, collards, dandelion, endive, kale, lettuce, parsley, spinach, Swiss chard, turnip greens, micro-greens, watercress; <u>MUFA</u> – Monounsaturated Fatty Acids; <u>PUFA</u> – Polyunsaturated Fatty Acids; <u>Tree nuts</u> – macadamia, walnuts, coconut, pecans, almonds, pistachios, hazelnuts, brazil nuts; <u>SFA</u> – Saturated Fatty Acids; <u>Wild-game meats</u> – Include venison, rabbit, pheasant, wild duck, bison, elk, caribou, wild boar; <u>Winter squash</u> – Acorn, Butternut, Pumpkin social aspects associated with these activities can have a profound effect in changing the current situation of obese children and their families. (see Table 2).

Since 1980, the U.S. government became involved in setting public nutrition recommendations. Dietary guidelines for Americans have been published and updated every five years since 1980 in an attempt to guide healthy food choices. Unfortunately, this government policy lead by the United States Department of Agriculture (USDA) has not ameliorated the obesity epidemic. The U.S. government has also tried to implement policies to address the obesity problem among children by focusing on food at school. The USDA also sponsored the National School Lunch Program which provides nutritionally balanced, free or low-cost meals to millions of children. However, this is only one part of the solution.

The Centers for Disease Control and Prevention provides recommendations for Coordinated School Health approach, coordinating health and physical education as well as nutrition services into the school environment (Carey et al., 2015). These services are available in schools. However these interventions need to be supported both within the community and in the home. Socio-economic inequities, parental education about the importance of nutrition and physical activity may be lacking and could be addressed in a school setting as a community public service. Until nutrition education produces healthier children, parental involvement may be of specific benefit for implementation in a school setting. A structured approach is crucial to not only improving outcomes in these children, but in preventing long-term costs associated with poor student outcomes and future health problems associated with a lifetime of obesity and malnutrition.

This article outlines compelling evidence for a pervasive problem. Over the last two decades, childhood obesity remains on an upward trajectory for all age groups with obese children often becoming obese adults. The forseable future does not seem to currently be turning the tide. The continued increase in childhood obesity is likely to overwhelm the current medical systems in many countries throughout the world. There is much more to be done to mitigate obesity, the subsequent health problems, and the cognitive issues that seem to coincide in occur with too many children. In light of the presented evidence in this article, the cognitive, social and behavioral problems associated with obese children is a problem that will not likely be solved in the short term without schools becoming more involved with nutrition.

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The Impact of Project-Based Learning on Student Content Knowledge in an Undergraduate, Teacher Preparation, Foundations of Education Course

By Patricia N. Eckardt, Ph.D., Madeline Craig, Ed.D., and Linda Kraemer, Ed.D.

Abstract

This hypothesis-generating research study provided insight into the impact of project-based learning on student content knowledge in an undergraduate, teacher preparation, Foundations of Education Course. Two instructors and 44-students participated in this mixed methods study. Data were collected over the course of 14-weeks and consisted of instructor field notes, two student reflective surveys, and a single-point project rubric scored by the instructors; the philosophy of education rubric was also considered, as this end of semester assignment assessed content knowledge. Themes pertaining to pedagogy, learning, and community emerged from data analysis. Once triangulated, data revealed that project-based learning may facilitate a deep understanding of content knowledge, and supportive learning communities may be cultivated through productive academic struggle while engaged in project-based learning experiences.

Purpose of the Study

The purpose of this study was to determine the impact of project-based learning (PBL) on student knowledge acquisition and students' and researchers' perceptions of the use of PBL as a pedagogical tool. This hypothesis-generating study sought to discover the value of using PBL as a strategy in three undergraduate Foundations of Education courses in a teacher education program during the Spring 2019 semester. With the intent of adding to the quality of educational practices and student learning, this research study provided insight into the impact of PBL as a pedagogical approach that assisted student conceptual understandings.

Research Question

The following questions served as the catalyst for research:

- What are the benefits and drawbacks of using PBL as a pedagogical tool for learning?
- In what way does PBL impact student learning of course content?
- What are undergraduate teacher candidates' and the researchers' perceptions of PBL as a tool in the classroom?

Theoretical Framework

Project-based learning is based on constructivist learning theories by well-known educational theorists such as Dewey, Vygotsky, Piaget and Freire. Specifically, PBL has its roots in inquiry- based learning, a pedagogical method that stems from constructivism. Inquiry-based learning is active learning, and hence a student-centered approach that focuses on critical thinking, questioning, and problem-solving (Barron & Hammond, 2008). It is intended to involve students in a deeper level of learning than traditional approaches to learning, such as lecture. "The inquiry-based model is more consonant with key principles of how people learn, including the need for relevance; explicit development of metacognition, creativity, and the ability to transfer skills and knowledge; and direct attention to misunderstandings" (Lucas Education Research, 2017). One method of inquirybased learning is Project Based Learning (PBL).

A student-centered pedagogy, PBL involves exploration of real-world problems and challenges in order for students to acquire a deeper level of learning. According to Thomas (2000), these projects often involve students in design, problem-solving, decision making and investigation over an extended period of time. Students are given autonomy by a teacher-facilitator, and the projects usually culminate in a presentation or realistic product. Research on project-based learning found that students who engaged in PBL learned more factual knowledge than those students engaged in traditional learning (as cited in Barron & Hammond, 2008).

The Buck Institute for Education, a leading researcher in the field of PBL, analyzed literature reviews, spanning 30 years from 1984 to 2017 and found that PBL can promote student learning in social studies and science and to a lesser degree in mathematics and literacy (Kingston, 2018). Another literature review conducted and published through Lucas Education Research and MDRC found that PBL's effectiveness in improving students' outcomes is "promising but not proven" (Condliffe et al., 2017, p. iii). Condliffe's working paper did find that PBL approaches have had positive effects on students' engagement, motivation, and self-efficacy (Condliffe et al., 2017). Implementers of PBL should note that there are significant challenges to its successful implementation. Barron and Darling-Hammond (2008) share that PBL requires diligent planning, collaboration strategies to enhance small group interaction, and ongoing assessment through formative feedback. More research is needed to link PBL to improved student outcomes and to establish best practices for implementation at various grade levels.

Method

Participants

Participants included two instructors and 44-students enrolled in EDU 3600, a Foundations of Education class required for all teacher candidates. We, the professors of the course, sought to enhance student engagement, inquiry, and creativity through the use of PBL with the intent of solidifying student content knowledge. Dr. Craig created the Design-A-School PBL assignment and implemented it for one semester. Following this initial experience, Drs. Craig and Eckardt decided to look more deeply into the impact of PBL on student conceptual understandings the following semester. For this reason, we investigated the impact this project based assignment had on our pedagogical approach and on student content knowledge.

Students. Students were undergraduate childhood and adolescent pre-service teachers. A total of 44 students were divided into three sections. Dr. Craig taught two sections of the course; Dr. Eckardt taught one.

Course EDU 3600

A required course for teacher candidates, this Foundations of Education class presents an overview of historical, sociological, and philosophical influences that are the foundation of American education. Candidates demonstrate awareness of the interdependence of education and society, critically examine educational issues, and compose a personal philosophy of education.

Design-A-School Project Description

Working in small groups, this semester long project asked students to design a new elementary or secondary school using information learned throughout the course and constituted 20% of a student's grade. This PBL assignment required students to collaborate outside of the classroom when designing a school that incorporates best practices as well as content from EDU 3600, including culturally responsive teaching, history, diverse learners, philosophy, purpose, reform, technology, finance, and governance. The assignment consisted of an initial and ending reflection, four project updates, the creation of a school website and one other creative outcome, a group presentation, question and answer to an audience of educators, and completion of a mid-project and end of project survey. The essential question guiding this assignment was: *How* can we improve (elementary or secondary) schools to better meet the needs of a diverse population of 21st century learners?

"Cognitive science indicates that we learn more effectively when we see how ideas are conceptually connected to one another, when our minds are fully engaged, and when the tasks we encounter are motivating because they are interesting and accessible" (Darling-Hammond, Flook, Cook-Harvey, Barron, & Osher, 2019, p. 19). This notion was the impetus behind the PBL assignment.

Data Sources

The research design for this mixed methods study was hypothesis generating. Gathered over the course of a semester, data included: researchers' field notes, student reflective surveys administered mid-semester and at the culmination of the project, the PBL single point rubric, and the philosophy of education rubric.

Field notes. We, the researchers, compiled field notes throughout the duration of the semester which pertained to assignment design and student progress. Data were analyzed and coded based on emerging themes and patterns.

Student reflective surveys. Students were asked to respond to the Reflective Survey twice during the semester. Surveys were administered anonymously during midproject in October and at the end of the project in December. Reflection topics were not guided or influenced in an attempt to allow for authenticity. Reflective Surveys were analyzed for emerging themes.

Project-based learning single point rubric. Following instructors' assessments, the associate dean of the undergraduate program was asked to review all assignments to check for content knowledge and further interrater reliability.

Philosophy of education rubric. The philosophy of education rubric consists of five areas of assessment. Two of the five elements pertaining to content knowledge are pedagogy and theoretical connections; these were considered for data analysis. Performance levels are based on a four-point scale as follows: level 1 emerging, level 2 developing, level 3 meeting expectations, level 4 exceeding expectations.

Interrater Reliability

When analyzing data, themes of pedagogy, learning, and community emerged. We compared analyses to determine reliability and examined discrepancies if present. Following triangulation of data, researchers generated two hypotheses which may be applied to student learning and classroom culture. **Table 1** presents characteristics of each category.

	Pedagogy, Learning, and Community evidenced in data				
Categories	Characteristics				
Pedagogy	Professors model use of PBL as instructional practice that might be evidenced in the elementary and/or adolescent classroom. Professors employ PBL to engage learners and foster inquiry.				
Learning	Rubric scores on the philosophy of education pertaining to content and pedagogy reflected conceptual understanding. Student scores on the PBL rubric and survey responses indicated theoretical connections.				
Community	Instructor field notes and student reflective responses highlighted collaboration, productive academic struggle, and learning through uncertainty and challenges.				

Evidence and Analysis

Pedagogy

The instructional practice employed in this PBL demonstrates active learning and student engagement as the project involves hands-on creation of a school based on course content. Students work together in class and outside of class to research, design, and present a new school. When the project was first introduced, students were shown short video clips of PBL in use in elementary and secondary classrooms. Benefits of PBL were discussed, and students were encouraged to read research that supports PBL in K-12 classrooms.

This project included frequent check-ins between the instructor and the groups through four blog posts demonstrating their progress in meeting the project outcomes. For example, one group stated in their blog post,

We share a similar outlook on education and believe that every student is entitled to a quality education that brings out the best in him or her. We also embrace the principles of diversity and inclusion, and seek to create a welcoming environment that celebrates both our differences and our similarities. This philosophy will be the basis of our Mission statement, which will be completed in due time.

If the instructor noticed that groups were struggling, she would offer insights in the form of online feedback or meet with groups face-to-face. Blog updates and feedback from the instructor aimed to help alleviate student stress during their first time experiencing the freedom and decision making involved in PBL.

Instructor field notes kept the faculty members engaged in the semester-long process of the project. By noting their observations throughout the 14-weeks, instructors had the opportunity to reflect on their own assumptions about learning and make improvements for the use of the project

in future semesters. Early in the project, Dr. Craig wrote in her field notes, "Group projects seem to conjure up negative feelings of, perhaps, bad past experiences working in groups. Consider allowing self-selection of groups rather than assigned groups; take a look at the research on this when time permits."

Students' written responses to the essential question at the beginning of the project and written reflection at the end of the project provided opportunities for students to consider their own school experiences from a student perspective and how they might use PBL in their future classrooms as a teacher. One student wrapped up her final reflective paper by stating, "Overall, I think project-based learning is a great tool to use in the classroom. This was the first time I was introduced to it, and I can honestly say I will use it in my classroom when I become a teacher."

Learning

Evidence of student learning presented itself through student reflective surveys and responses, philosophy of education rubrics, and the single-point Design-A-School rubric. On the philosophy of education rubric, 31% of students met expectations in the area of theoretical connections, and 62% exceeded expectations. Pertaining to pedagogical understandings, 31% of teacher candidates scored a level 3 while 55% of teacher candidates achieved a score of four points. Only two percent of students scored on the emerging level in the area of pedagogy, and seven percent of learners scored on the developing level in the area of theory.

In order to successfully complete the Design-A-School project, students were required to cover areas of pedagogy and theory as outlined in the required course readings. The Philosophy of Education paper is a benchmark assignment and due one month before the end of the semester. The Design-A-School project is the culminating activity at the end of the semester. All students received a perfect score on the Design-A-School project.

Moreover, a student commented on the final reflective response, "This course really helps me understand the meaning of education and it helps me create new and unique ways of helping me form my classroom for the future." This sentiment was supported when another student commented on the end of semester survey, "I did not understand initially that the project was designing a school based on our own philosophies. Once I understood the need to connect theory with practice to form a philosophy, the process became much easier."

Community

Neurologist and teacher, Judy Willis (2007) suggested a brain state of disequilibrium stimulates the amygdala which creates an ability to "transmit data efficiently from the sensory response centers to the patterning and memory regions of the brain. The hippocampus is primed to bring 'online' any previously stored related information that may connect with the new data to ... restore equilibrium" (pp. 24-25). Teachers who stimulate disequilibrium-prompted curiosity might assist learners in achieving a brain-state conducive for learning (Willis, 2007). The notion of productive struggle echoes sentiments of disequilibrium. Referring to the role of teachers, Blackburn (2018) contends, "Rather than immediately helping students at the first sign of trouble, we should allow them to work through struggles independently before we offer assistance ... for students to become independent learners, they must learn to persist in the face of challenge" (para. 2). The Design-A-School project had the ability to prompt disequilibrium through productive struggle.

Reflecting on the project, at the end of the semester one student responded, "I loved working together with the freedom to choose how we wanted to make our school." This sentiment was supported by another student who commented the project was, "... fun, engaging, and helped me think deeper about how I want to shape future generations. The group work of this project was such a great and rewarding learning experience that really brought everyone closer together." Student responses indicated productive academic struggle fostered a state of curiosity and collaboration.

Final survey results included a sense of community and learning through peer-to-peer inquiry and academic struggle. However, when the midsemester survey was administered a teacher candidate expressed confusion stating, "I really enjoy this project but I wish there was a little more instruction so we weren't so confused with what to do next, but the rubric is helping nicely." Perhaps the sentiment of confusion resulted from teacher instruction, a lack of clarity that the purpose of the project was designing a school based on their own philosophies, or it may have stemmed from students' discomfort learning to work creatively with peers under the support of teacher guidance rather than direct instruction. Dr. Eckardt's field notes initially indicated, "Students seemed a little nervous and confused - especially about the technology integration. However, they were excited to meet group members and discuss their ideas." Dr. Craig's midsemester field notes echoed similar sentiments. However, her end of semester notes reflected supportive learning communities stating, "At the conclusion of the presentations, students demonstrated true collegiality by verbally congratulating each other, high fives, and pats on the back as gestures of a job well done. The groups appeared sincerely proud of themselves for a big accomplishment and most groups seemed like they had successfully bonded. One group indicated they were going to get Starbucks to celebrate!"

Midsemester, students were asked to evaluate the following statement: I think this project is encouraging me to think deeply; at that time, only 24.4% responded they strongly agreed. At the end of the semester, learners revisited this statement; this time, 50% of learners reported strongly agree. It is evidenced that supportive communities of learners were established through peer-to-peer productive academic struggle.

Hypotheses Generated

The hypotheses generated are as follows:

- PBL may facilitate a deep understanding of content knowledge.
- Supportive learning communities may be cultivated through productive academic struggle while engaged in project-based learning experiences.

Discussion

This student-centered, collaborative activity can serve as a model for other assignments in additional courses. The faculty have begun a dialogue to examine how they might include this form of pedagogy into future projects. This project transformed the traditionally lecture-based course into a scholarly, collegial investigation resulting in a presentation for administration and other faculty that demonstrated how students deepened their understandings of project based learning and the connection of theory and practice in this pedagogical process.

In order to share this project more widely, future exhibitions will take the form of a poster presentation to be viewed by peers and faculty from various departments throughout the college. It is hoped that this project will continue to impact the learning of course content while offering future teachers (and current faculty) a model of inquiry-based learning that they will emulate in their future work.

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Unveiling the Hidden Assets that First-generation Students Bring to College

By Lisa Minicozzi, Ed.D., and Allison Roda, Ph.D.

Abstract

The purpose of this research was to discover what specific attitudes and behaviors first year students believed were necessary to transition to college by employing a qualitative lens. We chose to explore how students describe building their identities as college students, responding to the cultural shifts between high school and college, and interacting with the power structures in five Long Island institutions of higher education. Specifically, we compared 55 students along two dimensions-first-generation students of color at public and community colleges (n=22 students), and White private college students who are non-first-generation (n=33 students).

Introduction

The feeling of being unprepared academically and social-emotionally for college life has been explored and documented in the scholarly and popular literature (Conley, 2013, 2014; Duckworth, 2016; Nagaoka et. al., 2013). J. D. Vance in his 2016 memoir, Hillbilly Elegy, describes the unforgiving reality of growing up in a poverty-stricken Appalachian culture and the anxiety he faced when he received his college acceptance letter, to which he states:

Excitement turned to apprehension, but I reminded myself that college was an investment in my future...as I worried less about the financial aid forms, I began to worry for another reason: I wasn't ready. Not all investments are good investments. All of that debt, and for what? To get drunk all the time and earn terrible grades? Doing well in college required grit, and I had far too little of it...Everything about the unstructured college experience terrified me-from feeding myself healthy food to paying my own bills (pp.155-156).

J. D. Vance's statements underscore the deficitbased assumptions some people have about low-income, first-generation students entering college as being unprepared. Indeed, research has shown that first-generation college students, defined as students whose parents (or guardians) did not complete a 4-year college degree, are systematically excluded from accessing opportunities and successfully completing college degrees (Kezar, 2010). While there is a growing number of first-generation students enrolled in U.S colleges, the number of first-generation students earning a bachelor's degree is declining: "Between 1999-2000 and 2011-2012, the proportion decreased from 37 percent to 33 percent" (Strauss, 2018, np.).

Our research examines this deficit-based view of first-generation students by showing that first-generation versus non- first-generation students enter college with different mindsets about what it takes to navigate their first year of college based on prior experiences and family influences, and that all students are lacking important knowledge of the hidden curriculum of college life.

Related Literature and Framework

While the focus of the predominant research on college readiness has emphasized academic preparation and performance, there is a new focus, which broadens the definition of college readiness beyond standardized test scores to include non-cognitive skills (Barnett, 2016; Conley, 2014; Roderick, Coca, & Nagaoka, 2011; Venezia & Jaeger, 2013). Research has shown that non-cognitive skills can be taught and are crucial for negotiating the college transition process (Farrington, et al., 2012; Duffy & Sedlacek, 2011). College students, however, continue to face many barriers to persisting in college and earning a degree.

There seems to be a disconnect between what is taught in high school and what is expected in college, and this gap is most pronounced for first-generation, low-income students and/or students of color who often take fewer advanced courses during high school (ACT, 2006). Black and Latino, and low-income students accounted for the largest numbers of students not being college ready in reading and math (NAEP, 2015). It is clear that race and ethnicity, which is often linked to poverty and access, is a defining factor in college readiness and success (Massey & Fischer, 2005).

To examine readiness for college, we wanted to discover what specific attitudes and behaviors first year students believed were necessary to transition to college by employing a qualitative lens. We chose to explore how students describe building their identities as college students, responding to the cultural shifts between high school and college, and interacting with the power structures in five Long Island institutions of higher education. Specifically, we compared 55 students along two dimensions-first-generation students of color at public and community colleges (n=22 students), and White private college students who are non-first-generation (n=33 students).

The research questions that helped guide our research include:

1. What norms, attitudes and behaviors do Long Island college students perceive as necessary for navigating the first year college experience?

1a. According to a diverse group of first-year students, how do they respond to the cultural shifts and power structures between high school and college norms and expectations?

1b. How do first-generation students of color vs. nonfirst-generation White students compare and contrast on the readiness characteristics that they believe are necessary for the high school to college transition process?

Research Methods

A case study design was used to examine this "contemporary phenomenon within its real- life context" (Yin, 2014, p. 18). Data consisted of a sample of 12 focus group interviews at the college level to gather insight into student behaviors and attitudes associated with college readiness. All focus groups were conducted by two Long Island faculty members that teach in suburban private colleges and specialize in educational inequality. Our positionality as professors and researchers gave us access to first-year students (one of us teaches a first-year seminar), and insider knowledge into the successes and challenges that first-generation students face. The inclusion criteria for students consisted of a mix of females and males, representing various racial/ethnic and socioeconomic populations. As a result, our sample included participants with a diverse and wideranging set of goals and ambitions.

Interview sessions were audio recorded and transcribed verbatim. All interviews were approximately one hour in length. The semi-structured interview protocol covered the following topics: definition of college readiness; preparation for college; attitudes and behaviors that helped with the transition; challenges faced; and coping strategies. Data analysis was ongoing throughout the data collection stage.

Much can be learned about this particular case of college readiness and the college transition process from the perspective of first-generation vs. non- first-generation college first-year students on Long Island. While we do not claim that the findings can be generalized to all students' experiences, they could be applicable to students coming from similar demographic backgrounds on Long Island, and beyond.

Findings

Our research found that students who are taught to be independent learners and workers, to interact and communicate with faculty, and to know when and where to seek help felt better prepared for the transition to college. Findings indicate that first-generation students are better prepared for independence in college because of their prior work related experiences during high school. Interestingly, these same students are less prepared for selfadvocacy in college because of their 'go it alone' mentality. Students who are non- first-generation, on the other hand, feel they do not have much experience being independent because parents and high school teachers are 'excessively babying' and protecting them. They do have experience, however, being self-advocates because they are explicitly taught how to seek help from professors and other adults in their learning communities.

Overall, the focus group data suggest that firstgeneration vs. non- first-generation students are receiving different messages from their high schools and families about college readiness, and therefore enter the first year with different assets that they bring to navigate the critical first year in college.

First-generation Students

To fully transition and overcome freshmen year challenges, the findings illustrate that students need to possess an understanding of the institution's cultural context and social structures, or rather, the hidden curriculum. Students who can readily adapt and acclimate to the norms and expectations of the institution will meet with greater success. However, first- generation students were taught to "get it on your own" and therefore they expected to figure out the hidden curriculum of college life by themselves instead of actively seeking help and advice from others as the non- firstgeneration students were taught to do.

We heard how first-generation students of color were getting different messages from their parents, communities, and high schools about what to expect in college. When asked what attitudes and behaviors will help you navigate college, a Black female student from a low-income high school replied: "growing up in a minority community, I was always told that, 'If you're not going to get it, no one's going to get it for you'. So you gotta go get it on your own. So, that's why I have that grind attitude mostly."

Another Black female student remarked about the need to have an inner drive in college when she said: "my parents worked so hard and don't have a lot of money and was even broke all the time. It gives me a drive to want to do community service, to help other people, to go to work and to get good grades." A Latino student from the community college focus group said he, and "other students who come here" are on their own and have to adjust to that: "I had to learn to be on my own" with my schoolwork. Another student said that students who make it in college all have "selfmotivation, they don't have anyone pushing them to do better, they have themselves."

First-generation students said that they learned this independent mindset inside and outside of school. For example, most students in the public university and community college focus groups spoke about having to work night shift jobs and taking care of younger siblings, and even sick parents. When asked a probing question, "is that something that you learned on your own, or did someone teach you self-motivation and independence?", one Latino student quickly responded:

I was always self-motivated I guess. When I was younger, my mother, she always worked a lot so she was like hardly home. I mean she was there, she was in my life but she was always working. So, like with me and my siblings, we were always by ourselves so we handled everything ourselves, well, most things ourselves and so I guess I always for a long time I had that self-motivating factor I think.

In other words, first-generation college students of color did not necessarily expect faculty or advisors to help them, even though that is part of their job. Instead they expected to do things on their own first because that is the only way they knew how to do it. During the community college student focus group, a Black female student explained her plan for seeking help in college: "You need to find a way. If you see yourself slacking in school, you're going to always have to find a way."

Non-First-generation Students

On the contrary, we found that college students who are not first-generation students are good at being self-advocates, but lack independence because they are used to parents and teachers hand holding. They also have not had very much work experience, even though they might have wanted a job. Indeed, students expressed interest in gaining more autonomy in high school, but often said that their parents did not want them to be overextended.

High school students understandably rely on their parents to guide their education up to this point. Yet, there seemed to be more hand holding in non- firstgeneration student households compared with first-generation students, even in college. Compared to the 'go it alone' independent attitude of first-generation students, the students who had some knowledge of college life from their families relied on their parents to help them navigate the first year college experience. Since their parents had first-hand experience in college, they had direct knowledge of the hidden curriculum of college life. A White private school student admitted that his social support person was his mother whom he face-timed from his dorm room. His mother would ask him: "Did you do this? Did you do that? Good, now go relax and have dinner." Another White student in a private school commented, parents are "a really big part of it [college transition] since they've been guiding us since we were so little."

During the focus groups, we also heard how high school teachers would give students more guidance and structure with assignments compared to college professors. As one White private college student explained, in high school, students see teachers every day so they can remind them when assignments are due, and give them help to fix mistakes, whereas in college, students see professors once a week so students have to be 'on their own' with no reminders of due dates or chances to resubmit for a higher grade:

It's like [in high school] teachers would give you an assignment, they'd give you a lot of time to do it, and they made sure that if you got it wrong, you knew how to fix it. And they like they would make you like do corrections to get a higher grade. And in college it's like you're more on your own, it's like you can't rewrite your essay, you should have done that the first time or it's like your teacher, it's like you're not seeing them every day, so they can't remind you, 'Oh yeah, you have this due'. Like it's like they tell you you had a paper due and then, 'Oh, I forgot about it', it's like oh no one ever reminded me, you know (mmm). So, it's like in high school they do a lot more like, they're careful and cautious with you.

Other students at the focus group chimed in by saying how high school teachers and parents were on top of them when they missed assignments every single day, which made it hard to fall behind. In comparison, college professors expect students to be independent and do not check up on them when they miss assignments. This new and unexpected norm in college-to be more independent and receive less hand holding from teachers and parents was the source of stress and anxiety for some students, particularly if they fell behind and were unable to catch up.

Discussion and Conclusion

This research found important differences between how first-generation students vs. students who are non- firstgeneration navigated their first year in college. We found that while first-generation students are being taught independence at home and at school, what is missing is selfadvocacy skills. This is the case because they are being taught that they need to go it alone. On the other hand, students who are non- first-generation have self-advocacy skills because they are used to teacher and parent hand holding in high school. They are explicitly being taught to seek help from adults and peers when needed. What is missing in these students' life experiences is being independent learners and workers.

This study suggests the need for a more expansive view of college readiness; one that first uncovers and secondly prepares students for the hidden curriculum of college life. Given the growing number of first-generation students on college campuses that are not receiving a degree, students need to be explicitly taught the hidden curriculum of college life, such as cultural differences between high school and college, learning how to manage their time and prioritize, communicating effectively with faculty, and seeking help when needed (instead of struggling in silence). This type of first-year seminar course geared towards the unique challenges first-generation college students experience is being offered in several colleges across the country (Chatelain, 2018).

In the end, preparing students for the college transition becomes a shared responsibility between high schools and institutions of higher education. This necessary work involves changing mindsets from a deficit-view of first-generation students to an asset-focused model that provides tailored supports and resources to create a more equitable playing field and helps ensure greater retention and student success.

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Book Review:

Developing Leadership Skills and Abilities for Student Affairs Administrators

By Jacqueline S. Hodes, Matthew R. Shupp, and Zebulun R. Davenport

Reviewed by Joseph S. Famularo, Ed.D.

Developing Leadership Skills and Abilities for Student Affairs Administrators edited by Hodes, Shupp and Davenport, is a book targeted for both new student affairs leaders as well as graduate students aspiring to become student affairs leaders in higher education. The book provides practical knowledge, skills, and experience from several authors who are either currently working or retired within the field of student affairs. The authors use a format of letters to the reader, which provides personable guidance that is easy to understand, digest and apply. Each author addresses a disposition necessary for competent leaders of student affairs as outlined in the Professional Competencies (ACPA/NASPA, 2015). The book is structured into three parts that include letters from new professionals, mid-level managers, and senior/retired administrators.

In the first section, 11 new professional leaders share their transition from graduate student to becoming a first year full time professional, with the goal of preparing the graduate student for challenges such as the interview process, navigating a new campus culture, developing a voice, balancing work and life and many more topics that will confront a new professional.

The second section features 12 mid-level managers sharing their leadership journeys to new professionals, specifically in the areas of supervision and increased scope of responsibility. These letters emphasize the importance of continuous improvement in developing one's professional identity. In the third section, five current or recently retired Senior Student Affairs Administrators share lessons on the benefits and liabilities of leading at this level with mid-level professionals.

Because an effective leader solicits input from new professionals when making important decisions, this

section offers insight regarding how to interact with senior leadership. Additionally, it is full of wisdom from these experienced professionals, such as the higher you go up in life, the more humble you must become, and how it can be lonely at the "top." Every letter ends with exercises for reflection and action, with specific tasks for the reader to accomplish to further their preparation for entry into the profession.

For both the soon to be entry level professional in the field of student affairs as well as new student affairs leaders, the information contained in this book is invaluable. Reading step by step accounts from working professionals is like stepping into the future for the graduate student and entry-level professional. The letter format provides a personal tone that offers knowledge, skills and insights concerning what lies ahead for aspiring student affairs professionals. Reading these chapters will help graduate students gain concrete information and an understanding of the disposition required of a student affairs leader. More importantly they will be prepared for the emotions and inward struggles that will invariably occur and they will have various tools to guide their reflections and to address their challenges.

Developing Leadership Skills and Abilities for Student Affairs Administrators is a powerful tool for those planning to become student affairs leaders in higher education and for new student affairs leaders in the field.

Authors: Jacqueline S. Hodes, Matthew R. Shupp, and Zebulun R. Davenport

Reviewed by Joseph S. Famularo, Ed.D., Superintendent of Schools. Bellmore UFSD

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