INDIRECT EFFECTS OF TEACHER SUPPORT ON EMOTIONAL AND ACADEMIC OUTCOMES FOR ENGLISH LANGUAGE LEARNERS

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Sofia Pham
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Dissertation Committee:

Laura L. Pendergast, Ph.D., College of Education, Temple University

Catherine A. Fiorello, Ph.D., College of Education, Temple University

Janice H. Laurence, Ph. D., College of Education, Temple University

Eran Magen, Ph.D., Center for Supportive Relationships

ABSTRACT

Indirect Effects of Teacher Support on Emotional and Academic

Outcomes for English Language Learners

Sofia Pham

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Doctoral Advisory Committee Chair: Laura Pendergast, Ph.D.

This study investigated the relationship between teacher support, internalizing symptoms, and academic achievement in a sample of English Language Learners (ELLs) and non-English Language Learners (non-ELLs). Participants were middle school students from a culturally and linguistically diverse suburban school district. Linear regressions were used to examine mediation, moderation, and moderated-mediation models of teacher support on internalizing symptoms and academic achievement. The results showed that increased teacher support was related to higher classroom grades, particularly for non-ELLs, and decreased internalizing symptoms for both ELLs and non-ELLs. Implications, limitations, and directions for future research are discussed.

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CHAPTER 1

INTRODUCTION

The needs of English Language Learners (ELLs) are not limited to English language proficiency. ELLs face a variety of stressors, including those related to language barriers and acculturation that can lead to elevated levels of psychological distress (Kulis, Marsiglia, & Nieri, 2009). Although ELLs are at high risk for developing internalizing problems such as diminished self-worth and anxiety (Suarez-Orozco & Suarez-Orozco, 2001), relatively few studies have been dedicated to understanding how to best support their emotional or internalizing needs. Appropriate supports may have the potential to enhance children's development of resilience (Masten, 2001). One protective or resilience factor against the onset of internalizing problems is social support (Cho & Haslam, 2010; Cuadrado, Tabernero, & Briones, 2014). Current research suggests that social support in the school environment may have a positive impact on non-ELL students' emotional well-being and their academic performance (Griffith, 2002), but few studies (e.g. López, 2012) have examined this finding within the ELL population. Because ELLs face unique stressors and may be prone to internalizing problems, social support is likely to be a salient protective factor.

English Language Learners and Current Outcomes

English Language Learner (ELL) is a term used to describe students in US schools who are "active learners of the English language" and "may benefit from various types of language support programs" (National Council of Teachers of English, 2008, p. 2). According to a report by the National Council of Teachers of English (2008), ELLs represent a diverse group. They differ in the ethnic group they identify with (Grigg, Donahue, & Dion, 2007), language proficiency, socio-economic status, educational expectations, background knowledge, and immigration status (National Council of Teachers of English, 2008). Approximately 57% of ELLs are born in the US to non-English speaking parents, while 43% are born in foreign countries.

Several types of language acquisition models have emerged to help support the development of ELLs' English language skills. These models range from 100% immersion in English (no instruction in the ELL's native language) to two-way bilingual education where ELLs are taught in both their native language and in English (Garcia, Kleifgen, & Falchi, 2008). According to López (2012), research on the effectiveness of these approaches has been inconclusive. There is evidence to support English-only instruction and evidence to support dual-language instruction (Brisk, 2006; Rolstad, Mahoney, & Glass, 2005; Slavin & Cheung, 2005).

It is evident that there is still a significant achievement gap between ELL students and non-ELL students. Research shows that only 4% of ELL students are proficient in reading by the time they reach the eighth grade (Batalova, Fix, & Murray, 2007). ELL students also experience a higher high school dropout rate than their non-ELL peers (Fry, 2003). The lack of a high school diploma leads to lower earning potentials. According to the US Census Bureau (U.S. Census Bureau, 2010a, 2010b), the average income for individuals without a high school diploma is $20,241 a year, whereas individuals with a high school diploma earn approximately 50% more. These statistics suggest that ELL students are at a major disadvantage which compounds later in life, and that current supports available in schools may not be adequate.

English Language Learners and Affective Variables

Incentives to address the needs of ELLs are growing as their number increases. According to The National Center for Education Statistics (2013) the percentage of ELLs in the student population has increased from 8.7 percent in 2003 to 9.1 percent in 2012. In addition to academic challenges, students who are placed in ELL programs tend to experience greater levels of internalizing problems, symptoms of anxiety and depression, than their non-ELL peers (Kulis et al., 2009). ELLs' high risk for internalizing problems may stem from the many stressors they face such as language barriers, acculturation, low socioeconomic status, and perceived discrimination (Blanco-Vega, Castro-Olivo, & Merrell, 2007; Suarez-Orozco & Suarez-Orozco, 2001). Elevated anxiety levels among ELL students, in particular, are a major concern. Anxiety induced by language barriers has been well documented (Wu, 2010). Language-based interventions alone have been unsuccessful at eliminating the achievement gap for ELLs. This is evident by the low academic achievement of ELLs discussed above. Besides language-based supports, the above evidence suggests that some ELL students may also require socio-emotional supports. It is possible that addressing the emotional needs or the internalizing symptoms of ELLs may be a viable supplement because of the relationship between internalizing problems and academic success (Berger, Alcalay, Torretti, & Milicic, 2011). There is a need to examine variables that contribute to better emotional and academic outcomes for ELL students.

A Possible Protective Factor

Social support is associated with improved socio-emotional (Khatib, Bhui, & Stansfeld, 2013) and academic outcomes (Suarez, Polo, Chen, & Alegria, 2009). This finding has been examined in the school context, but has not been examined with an ELL population specifically. Research with minority populations in general (not ELL populations specifically) has revealed that social support, specifically teacher support, is instrumental in increasing participation in learning, on-task behaviors, the use of problem-solving strategies, and interest in academic content (Fredricks, Blumenfeld, & Paris, 2004). In light of the findings that ELL students are at an increased risk of academic underachievement and the potential benefits of social support in promoting academic achievement, the benefits of social support for ELL students need to be examined.

Current Objective

The purpose of this study is to investigate the relationship between social support, academic achievement, and internalizing symptoms for students who are ELLs. Results from this study might provide educators with additional ways to promote the academic success of ELL students and inform classroom practices. Specifically, schools may allocate resources to support the emotional needs of ELLs and encourage teachers to engage in more supportive behaviors.

CHAPTER 2

LITERTURE REVIEW

Overview of Internalizing Disorders

The term "internalizing disorders" is widely used to refer to various types of mood or emotional disorders such as anxiety and depressive disorders (Beitchman, Inglis, & Schachter, 1992; Brady & Kendall, 1992; Kovacs & Devlin, 1998). In an extensive review conducted by Kovacs and Devlin (1998), internalizing disorders were found to have high predictive validity of important life outcomes. For instance, children diagnosed with a depressive disorder at a young age are more likely to experience a depressive episode at a later time. Internalizing disorders are often co-morbid with other types of disorders (Kovacs & Devlin, 1998) such as externalizing disorders (i.e. behavioral problems).

According to the Diagnostics and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5: American Psychiatric Association, 2013), anxiety disorders are characterized by excessive fear and anxiety that persists for over six months. Anxiety disorders only differ by the trigger that induces the fear or anxiety. Triggers can be objects or situations. Examples of anxiety disorders that are associated with specific objects or situations are phobias and social anxiety disorder (American Psychiatric Association, 2013). Generalized Anxiety Disorder, on the other hand, describes feelings of anxiety or apprehensive expectations that are present across multiple situations. Common symptoms of generalized anxiety include restlessness, fatigue, difficulty concentrating, irritability, muscle tension, and sleep disturbance.

The DSM-5 (American Psychiatric Association, 2013) identifies the presence of sadness, emptiness, or irritable mood as common features of depression disorders. Collectively, these features are referred to as a depressed mood. Depression disorders must also be accompanied by somatic or cognitive changes that impair an individual's capacity to function (American Psychiatric Association, 2013). Somatic changes may include weight loss or weight gain, while cognitive changes may be characterized by fatigue, loss of energy, or difficulty concentrating.

The onset of anxiety and depression can occur in childhood (Kovacs & Devlin, 1998). Anxiety has been identified as one of the most common disorders during childhood (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003; Egger, & Angold, 2006). Although depression during childhood is less common than anxiety (Carter et al., 2010), the impact of depression can be equally debilitating (Luby, 2000). Internalizing disorders during childhood have been associated with impaired academic functioning (Kristner, David-Ferdon, Lopez, & Dunkel, 2007; Strauss, 1987).

Ethnic minority children are more likely to experience internalizing problems (Anderson, 2010) when compared to children from the majority culture: European American children (Kennard, Mahtani, Hughes, Patel, & Emslie, 2006). Kennard and colleagues (2006) found that the rate of internalizing problems was higher for Native American, Latino American, Asian American, and African American adolescents than for European American adolescents.

Studies of adult (Clark & Watson, 2006), child (Higa-McMillan, Smith, Chorpita, & Hayashi, 2008), and adolescent (Angold, Costello, & Erkanli, 1999) populations suggest that there is a high rate of co-morbidity between anxiety and depressive disorders. In an attempt to account for this high rate of co-morbidity, researchers began to examine whether or not anxiety disorders and depressive disorders may be explained by a one-factor, internalizing disorder model (Krueger, Caspi, Moffitt, & Silva, 1998). Krueger et al. found that various types of anxiety disorders and depression disorders were better explained by a one-factor model than the two-factor model classification of the DSM-IV (American Psychiatric Association, 1994).

Findings from subsequent studies provide additional support for the one-factor model of internalizing disorders (e.g. Krueger & Finger, 2001; McGlinchey & Zimmerman, 2007).

Diathesis-Stress Models

The interaction of predispositions and stress, also known as the diathesis-stress model, is a framework used by researchers to understand why some people acquire mental disorders while others do not (Abramson, Metalsky, & Alloy, 1989; Beck, 1967; Monroe & Simons, 1991). Diathesis refers to a predisposition or vulnerability for developing a disorder such as an internalizing disorder. According to Butcher (2007), factors that may make individuals vulnerable to mental disorders include biological, psychosocial, and sociocultural predispositions. Stress is a response to demands that may be perceived as overwhelming for an individual (Folkman, 2013; Lazarus & Folkman, 1984); that is, stress is experienced when demands cannot be met by the personal resources an individual has at his or her disposal (Eaton & Bradley, 2008). There are four types of responses that characterize the experience of stress: disturbance in affect, changes in behavior, impaired cognitive functioning, and psychological changes (Lazarus, 1996).

According to Ingram (2005), multiple diathesis-stress models have been proposed. There are generally three classifications for these models: the additive models, the ipsative models, and the mega diathesis-stress models (Ingram & Luxton, 2005). The tenet of the additive models of diathesis-stress is that the sum of stress and vulnerability determines if an individual acquires a mental disorder. That is, the degree of vulnerability or stress is not important as long as the sum exceeds a certain threshold (Butcher et al., 2007). The ipsative models of diathesis-stress are sensitive to the degree of vulnerability and/or stress that individuals experience. In these models, there is an inverse relationship between stress and vulnerability (Monroe & Hadjiyannakis, 2002). Ipsative models of diathesis-stress would predict that the combination of high vulnerability and low stress or the combination of low vulnerability and high stress should lead an individual to develop a mental disorder. In other words, if an individual is genetically predisposed to develop a mental disorder, minimal stress is required to trigger the disorder. On the other hand, if an individual is not predisposed to developing a disorder, high stress is required to trigger the disorder. According to Ingram (2005), ipsative models may not be distinct from additive models. Because of the additive relationship between stress and vulnerability inherent in an ipsative model, it can be thought of as a sub-class of additive models. Ingram (2005) uses the term mega diathesis-stress to describe alternative models of diathesis-stress that require a high degree of both vulnerability and stress to trigger mental disorders. Regardless of which diathesis-stress model researchers subscribe to, the common feature underlying all of these models is that the interaction of predispositions (vulnerability) and stress is associated with mental disorders.

The diathesis-stress framework can be applied to the study of internalizing symptoms experienced by English Language Learners. Ethnic minorities are more vulnerable to developing internalizing problems (Kennard et al., 2006) and because most English Language Learners represent an ethnically diverse group of students (Grigg et al., 2007), English Language Learners are also likely to be predisposed to internalizing problems. More importantly, English Language Learners face additional stressors that include acculturation stress and language barriers that ethnic minority students who are not English Language Learners may not face (Blanco-Vega et al., 2007; Suarez-Orozco & Suarez-Orozco, 2001). Because of this confluence of stressors, which will now be presented in further detail, ELLs may be more likely to develop internalizing disorders regardless of predisposition.

Acculturative Stress

Acculturation is the process of cultural and psychological change that occurs when two or more groups from different cultures come in contact (Berry, 2005). Based on Folkman and Lazarus's (1984) perspective on stress, Cuadrato (2014) defines acculturative stress as intercultural contact that "gives rise to threats, changes, conflicts, and challenges that cannot easily be resolved through simple behavioral adjustments" (p. 443). Berry (2005) posits that some of the challenges ethnic minorities may encounter involve simultaneous desires to maintain their own cultures as well as to be integrated into majority culture. While these desires are not mutually exclusive, an inability to strike a balance may lead to acculturation stress. Specifically, those who cannot hold on to their own cultures or become integrated may belong to a marginalized group; they will have a difficult time identifying with people from their native culture as well as with people from the majority culture.

Certain minorities may be more vulnerable to this stress. Ethnic minority immigrants report elevated levels of acculturative stress relative to immigrants of European descent (Hawley, Chavez, & Romain, 2007; Slonim-Nevo, Sharaga, Mirsky, Petrovsky, & Borodenko, 2006). Research suggests that acculturative stress is related to negative outcomes for ethnic minorities. A study of 114 Mexican immigrants between the ages of 17 and 77 revealed that acculturation stress significantly predicted depression and suicidal ideation (Hovey, 2000). Similarly, in a study of 881 youths of Mexican descent, it was found that higher stress was related to more depressive symptoms for both US born and immigrant youths (Romero & Roberts, 2003). These findings have been found in other ethnic minority groups. In a sample of Korean international students, researchers found that acculturative stress was strongly associated with mental health symptoms (Lee, Koeske, & Sales, 2004)

The relationship between acculturative stress and depressive symptoms was also implicated for Chinese international students in a study consisting of 189 Chinese international students attending a Midwestern university (Wei et al., 2007; Wei, Liao, Heppner, Chao, & Ku, 2012). As ELLs are often ethnic minorities, they are likely to experience acculturative stress and the negative outcomes associated with it.

In sum, internalizing disorders refer to symptoms of anxiety and depression. Certain groups of people may be more likely to experience internalizing problems. The diathesis-stress model explains why ethnic minorities who are also ELLs may be more vulnerable to internalizing problems. Internalizing disorders have an early age of onset and tend to be more prevalent in ethnic minorities. Certain types of stressors, such as acculturation stress, may further increase the risk of developing internalizing disorders among ethnic minorities who are also ELLs.

Language Barriers

In addition to adapting to a new culture, ELLs face language barriers. Perceived lower English proficiency has been linked to acculturative stress and psychological distress (Wei, Tsai, Chao, Du, & Lin, 2012; Zhang, Hong, Takeuchi, & Mossakowski, 2012). Additionally, lack of English proficiency among immigrants is related to somatic and internalizing symptoms, such as lack of well-being, fatigue, pain, lack of appetite, anxiety, and feeling depressed (Yi, Swartz, & Reyes-Gibby, 2011). In a sample of 320 African, Asian, and Latin American international students, those who perceived themselves as having less English proficiency or rated themselves as less fluent in English reported more depressive symptoms (Constantine, Okazaki, & Utsey, 2004). Lower English proficiency appears to be a primary source of acculturative stress (Lin & Yi, 1997; Nwadiora & McAdoo, 1996) for non-native students. This research suggests that while language proficiency is linked to academic performance (Grigg et al., 2007; Kim & Herman, 2009; Schiller & Muller, 2000), it also has significant implications for one's emotional functioning.

Limitations to Language-Based Interventions

Attempts to improve language proficiency include the placement of students in English language development programs. According to Kena et al. (2014), an estimated 4.4 million public school students participate in programs for ELLs. Despite the availability of English support programs there is still a huge achievement gap between ELL students and non-ELL students. Research shows that only 4% of ELLs are proficient in reading in eighth grade (Batalova et al., 2007). ELLs consistently experience a higher high school dropout rate than their non-ELL peers (Fry, 2003). A study consisting of 2,352 language minority students from 523 schools found that placement in English development programs did not correlate with academic achievements over time, especially for students who were not recent immigrants (Callahan, Wilkinson, & Muller, 2010). Furthermore, there seems to be a negative relationship between students' ability to overcome stress or adversity and the amount of time they spent in English language development programs, according to a small sample of Latino ELL middle school students (Castro-Olivo, Preciado, Sanford, & Perry, 2011). In other words, extended time in language support programs may increase ELLs' risk for experiencing internalizing problems. This risk may stem from stigma associated with placement in a language development program. It is possible that the emotional consequences of these placements exceed the benefits over a long period of time. One study found that students who have been in ELL programs for "sustained periods of time" are at-risk for internalizing problems such as anxiety and depression (Castro-Olivo et al., 2011). These studies suggest that English language development programs alone may not be the best way to help bridge the achievement gap. Because extended periods of time in these programs can lead to negative outcomes, it is important to understand other variables that contribute to language learning and academic achievement of ELLs. One important variable that should be considered is internalizing symptoms. Although few studies have examined the relationship between internalizing symptoms and academic achievement in ELLs, our review of the challenges ELLs experience suggests that internalizing symptoms play an important role in their academic success.

Affective Filter Hypothesis

Krashen (1981) postulates that language acquisition is governed by an affective filter and that this filter is particularly relevant to successful language acquisition in adolescence. Affective filter refers to people's openness to learning a new language (Dulay & Burt, 1977). Krashen (1981) theorized that affective variables such as anxiety and self-confidence can block out language input, whether it is direct instruction in English or informal input through daily interactions. That is, even if ELLs have high exposure to proper English in class or in the community, anxiety and low self-confidence can hinder their ability to process and learn the language. Adolescents are likely to have a high affective filter because they are developmentally more likely to engage in social comparisons that make them vulnerable to feelings of inadequacy (Seltzer, 2009). Therefore, ELLs who are also adolescents may be more likely to experience internalizing symptoms and, in turn, to have more difficulty achieving language proficiency.
As discussed, ELL students have the tendency to experience acculturative stress in addition to struggling academically. The Affective Filter Hypothesis is helpful in bridging the gap between ELL students' emotional and academic concerns. Specifically, the affective filter may explain why English language supports have not led to increased academic performance and language

proficiency for ELLs. Although some language supports are available to ELLs, either through dual language programs or education in English only ESOL classes, there may not be supports in place to address their emotional needs. Based on Krashen's framework (1981), students who experience internalizing problems will not acquire English proficiency even if they are receiving quality instruction as long as their emotional needs are not addressed.

ELLs' Anxiety

The affective filter hypothesis has been captured by the research on language anxiety (Aida, 1994; Cheng, 2002; Horwitz, Horwitz, & Cope, 1986). Horwitz and Cope (1986) were the first researchers to isolate language anxiety: anxiety specific to learning and speaking a new language, from other forms of anxiety (Wu, 2010). Furthermore, they identified three related anxieties: communication apprehension, test anxiety, and fear of negative evaluation. Communication apprehension refers to the fear of speaking in the target language, test anxiety refers to the fear of taking tests in the target language, and fear of negative evaluation refers to the apprehension of being judged by others.

These anxieties related to language can impact language acquisition and academic achievement (Wu, 2010) as well as affective variables such as self-esteem and self-confidence (Crookall, & Oxford, 1991). Horwitz and Cope (1986) found that as many as one-third of foreign language students experience some form of language anxiety. Many studies that have been conducted with international university students have established the prevalence of language anxiety and its effect on academic performance (Elkhafaifi, 2005; Ewald, 2007; Sellers, 2000), but few studies have examined this construct in a sample of adolescents. It is important to understand how affective variables such as internalizing problems influence language acquisition and academic performance in this age group, for they are most vulnerable to school dropout. As mentioned before, higher high school dropout rates are problematic because students without a high school diploma tend to have lower earnings potential (U.S. Census Bureau, 2010b).

Resilience Factors

Resilience has broadly been defined as the ability to achieve positive outcomes in the face of adversities and risk factors (Masten, 2001). According to Masten, resilience is defined by dual criteria. First, evidence of risk must be present. Second, the developmental outcome must be considered good or positive. While early research on resilience seems to suggest that only extraordinary individuals can be resilient (e.g. Pines, 1975; Garmezy, 1971), Masten argues that resilience is a common phenomenon. Furthermore, researchers have identified internal and external factors that predict resilience, which include self-regulation skills, motivation, presence of caring adults, and parenting styles (Luthar, Cicchetti, & Becker, 2000; A. S. Masten & Coatsworth, 1998). The risk factors experienced by ELLs have been discussed in previous sections. The remaining sections will focus on protective factors that may foster ELLs' resilience.

Several variables have consistently mediated and moderated the effects of acculturative stress and the process of acquiring language proficiency, in turn producing better academic outcomes. Younger age at the time of arrival, longer length of stay, and higher socio-economic status have been found to be negatively associated with acculturative stress in a group of 506 Chinese adolescents living in Canada (Kuo & Roysircar, 2004). Younger age at time of arrival also predicted reduced symptomatology of distress in 83 refugees and immigrants from Vietnam (Brown, Schale, & Nilsson, 2010). These findings may generalize to ELLs from other ethnicities, as acculturative stress and language proficiency are difficulties faced by other ethnicities (e.g. Constantine et al., 2004). A study consisting of 78 Mexican American immigrants and 83 native

Mexican Americans revealed that Mexican American immigrants experienced higher levels of anxiety and loneliness than native Mexican Americans (Polo & López, 2009), suggesting that time spent in the US is likely to explain this difference. While these findings can inform which populations of ELLs are most at-risk, educators cannot alter age at time of arrival, length of stay, and socio-economic status. There is, however, a variable within an educator's control that has been associated with reduced psychological distress and increased academic achievement: social support, defined as when an "individual's needs or requirements are met through social relationships, and those relationships are specialized for what they provide" (Jacobson, 1986; p. 251). This factor is likely to function as a mediator between ELL status, internalizing symptoms, and academic outcomes.

Social Support

Jacobson (1986) identifies three types of social support: emotional, cognitive, and material. Emotional support refers to a social relationship that makes someone feels comforted, valued, and respected. Cognitive support refers to gaining information or useful knowledge through a social relationship. Material support refers to goods or services someone receives through a social relationship (Jacobson, 1986). While there are different types of support, our discussion of social support mainly refers to emotional support because we are interested in improving the emotional functioning of ELL students.

Benefits of Social Support

The presence of social support has been linked to many positive outcomes. In particular, Calvete and Connor-Smith (2006) found that perceived social support is related to successful coping and less severe symptoms of distress in both Americans and Spanish undergraduate students. In samples of adolescents diagnosed with a chronic illness, those who reported greater satisfaction with social support (Murphy, Moscicki, Vermund, & Muenz, 2000) and perceived more social support reported lower scores on measures that assessed depressed mood and anxiety (Corey, Haase, Azzouz, & Monahan, 2008). According to a study conducted with 3,012 Mexican Americans, physical health also appears to be positively associated with social support (Finch & Vega, 2003). Correspondingly, a longitudinal survey of 821 adolescents reveals that lower levels of social support are associated with an increased risk of depressive symptoms (Khatib et al., 2013).

The benefits of social support are also applicable in the context of acculturative stress. Research indicates that perceived social support can mediate the effects of acculturative stress (Cuadrado et al., 2014) and psychological distress (Cho & Haslam, 2010). Higher levels of social support tend to be related to lower levels of acculturative stress (Lee, 2004). Based on these findings, it is reasonable to postulate that social support matters in the school context and may serve as a protective factor for ELLs against internalizing symptoms

Social Support in the School Context

Social support can exist at the school level and has useful implications for academic and emotional outcomes. Social support at the school level includes the perception that there are teachers and adults in the school who care about the students; that is, someone students can talk to if they have a problem (Griffith, 2002). Based on a survey completed by 25,087 elementary students on school learning and social environments, Griffith (2002) posits that a positive school environment can enhance the academic performance of racial and ethnic minority students. It is also suggested that attending a school with a socially supportive climate may lead to decreased school-related stress; as do perceptions of acceptance and availability of help from classmates and teachers (Torsheim, Aaroe, & Wold, 2003).

Teacher support may play an integral role in enhancing a supportive learning environment and positively influencing important student outcomes. For instance, Brewster and Bowen (2004) found that teacher support had more influence than parental support on school engagement for Latino students in middle and high school who were at-risk for school failure. A supportive school environment, which includes the perception of support from teachers and peers, is also thought to help reduce school mobility: the rate of transferring schools, among racial minority elementary school students (Fiel, Haskins, & Turley, 2013). According to a review by Fredricks (2004), teacher support and caring has been correlated with various aspects of behavioral engagement, including higher participation in learning and on-task behaviors, lower disruptive behavior, and a lower probability of dropping out of school among samples of ethnically diverse elementary, middle, and high school students. When students are less afraid of being judged by a teacher or peer, they are more likely to participate and ask questions (Crombie, Pyke, Silverthorn, Jones, & Piccinin, 2003; Dallimore, Hertenstein, & Platt, 2004; Fassinger, 2000) This promotes learning and better communication skills (Dancer & Kamvounias, 2005). Teacher support may be particularly important for ELLs as they may have more difficulty in these areas due to language barriers.

A meta-analysis examining the effect of school environment on the emotional health of adolescents found that school connectedness and teacher support are associated with future mental health (Kidger, Araya, Donovan, & Gunnell, 2012). In particular, teacher support has been linked to fewer depressive symptoms (Joyce & Early, 2014) and less academic anxiety (Connors, Miles, & Pope, 2014).

On the other hand, the lack of supportive relationships in schools may be a risk factor for behavioral and internalizing problems. According to a study conducted by Nation, Vieno, Perkins, and Santinello (2008) in a population of 11-, 13-, and 15-year olds, students who feel disempowered by teachers may compensate by oppressing or bullying other students. Nation et al. (2008) defined empowerment by teachers as “students’ perceptions that teachers encourage them to express themselves” (p. 217). Overall, Nation et al. (2008) found that empowerment by teachers had a stronger correlation with bullying behaviors than empowerment by friends. Students who perceived less or no teacher support reported higher frequencies of internalizing symptoms when compared to students who perceived having teacher support (Connors et al., 2014). In a longitudinal study conducted by Wit, Karioja, Rye, and Shain, (2011), 2,616 students were followed for 12 months. Results from the study showed that a significant decrease in teacher support was associated with an increase in mental health issues. Similarly, an earlier three year longitudinal study of 2,585 students conducted by Reddy, Rhodes, and Mulhall (2003) showed that depressive symptoms were inversely related to the perception of teacher support. That is, those who perceived an increase in teacher support reported a decrease of depressive symptoms and those who perceived a decrease in teacher support reported an increase in depressive symptoms.

These findings from more general populations may be applicable to ELL students. In a sample of 995 students, of which 62% were ELL students, researchers found that emotional warmth from teachers was especially salient for ELL students in producing better reading outcomes (López, 2012). While such research shows that social support produces positive outcomes for ethnic and racial minority students, there is not enough confirmatory evidence to determine if social support, in particular teacher support, can benefit ELL students in similar ways.

In addition to the lack of research on the emotional needs of ELLs, methodological limitations of existing studies further limit educators' knowledge on how to best support ELL students. Such limitations include, small sample size (e.g. Castro-Olivo et al., 2011; Lee et al., 2004; Polo & López, 2009), the use of ethnically homogenous samples (e.g. Lee et al., 2004; Romero & Roberts, 2003; Wei et al., 2007; Wei, Tsai, et al., 2012), and a reliance on cross-sectional data (e.g. Calvete & Connor-Smith, 2006; Griffith, 2002; López, 2012). More importantly, previous studies have not investigated teacher support, internalizing symptoms, and academic achievement within the ELL population.

Present Study

The relationship between internalizing symptoms and academic outcomes has been well-documented in non-ELL students (Masten et al., 2005). It also is clear that there is a link between social support and internalizing symptoms, as well as academic outcomes for non-ELL students. There is, however, a gap in the literature. The extent to which perceived teacher support can decrease internalizing symptoms and improve academic outcomes for ELLs has not been examined longitudinally. It is important to investigate protective factors such as teacher support against internalizing symptoms and poor academic outcomes because ELLs are at risk for experiencing these conditions.

Longitudinal studies allow researchers to establish whether or not the relationship between variables remains stable across different time points. Furthermore, the role of teacher support has not been investigated in a sample of ethnically diverse ELL students. This shortcoming makes it difficult to discern which findings are generalizable to ELL students of different ethnic and racial backgrounds.

The purpose of the present study was to examine whether or not teacher support can mediate and/or moderate the relationships between ELL status, internalizing symptoms, and academic achievement. Data were collected from two middle schools of an ethnically and linguistically diverse school district in Pennsylvania. The sample consisted of 533 students, with an estimate of 83 racially and ethnically diverse ELL students. Longitudinal data were collected over two time points. Participants were asked to complete surveys that consisted of measures of perceived teacher support and internalizing symptoms. Academic outcome data were acquired from the school district.

Based on the knowledge accumulated in the existing literature, it is hypothesized that (1a) ELL students would report higher levels of internalizing symptoms than non-ELL students at T1 (1b) and T2, (2a) ELL status would be related to lower academic performance at T1 (2b) and T2, (3a) there would be a negative relationship between perceived teacher support and students' internalizing symptoms at T1 (3b) and T2, (4a) there would be a positive relationship between perceived teacher support and students' academic performance at T1 (4b) and T2, (5a) the relationship between ELL status and internalizing symptoms would be partially mediated by perceived teacher support at T1 (5b) and T2, (6a) the relationship between ELL status and academic performance would be mediated by perceived teacher support at T1 (6b) and T2, (7a) the relationship between ELL status and internalizing symptoms would be moderated by perceived teacher support at T1, (8a) the relationship between ELL status and classroom grades would be moderated by perceived teacher support at T1, and (9a) teacher support would moderate the indirect relationship of ELL status and academic achievement through internalizing symptoms at T1 (9b) and T2.

CHAPTER 3

METHODS

Participants

Participants were 6th Grade students from a suburban school district in Pennsylvania. This particular age group is important to study because they are reaching adolescence and, accordingly, are predisposed to a high risk of developing internalizing problems (Pine, Cohen, Garley, Brook, & Ma, 1998). The sample consisted of 533 participants (56.48% female, 43.29% male), of which 83 students were classified as ELLs. In regard to race/ethnicity, 29.12% of all participants self-identified as White, 37.02% self-identified as Black, 4.21% self-identified as Hispanic/Latino, 13.16% self-identified as Asian, and 12.63% self-identified as multiracial. Participants were between the ages of 10 to 14 (M = 11.26, SD = 0.48). See Table 1 for sample characteristics.

Participants were from a diverse suburban school district. There are fourteen schools within the school district, one kindergarten center, ten elementary schools, two middle schools, and one high school. The district serves over 12,000 students. Approximately 800 students are served in the English Language Learner program and 1,300 are served in special education programs. According to Pennsylvania Department of Education Approximately 60% of the students are considered economically disadvantaged. The 12,000 students represent over 60 birth countries, 70 home languages and have the following ethnic distribution: 43% Black, 39% White, 13% Asian, 4% Hispanic, and 1% other. Demographics of the participants will be reported.

Table 1. Sample Characteristics

	ELL		Non-ELL		Overall	
	N	%	N	%	N	%
Gender						
Female	34	54.84	186	55.86	244	56.48
Male	28	45.16	147	44.14	187	43.29
Ethnicity						
White	2	2.56	155	35.15	166	29.12
Black	20	25.64	166	37.64	211	37.02
Hispanic	12	15.38	10	2.27	24	4.21
Asian	40	51.28	30	6.80	75	13.16
Native American	0	0	3	0.68	4	0.70
Native Hawaiian	0	0	1	0.23	1	0.18
Multiracial	1	1.28	63	14.29	72	12.63
Other	3	3.85	12	2.72	16	2.81
Age						
10	1	1.25	4	0.92	7	1.24
11	56	70	319	73.17	408	72.08
12	23	28.75	110	25.23	146	25.80
13	0	0	3	0.69	4	0.71

Measures

Perceived Teacher Support

The Multidimensional Scale of Perceived Social Support (Zimet, Dahlem, Zimet, & Farley, 1988) was modified to assess the extent to which participants felt that their teachers were supportive of them. The original scale consisted of 12 items that measure social support from family, friends, and significant others. The reliability of the total scale was .88 according to Zimet et al. (1998). (Zimet et al., 1988) established construct validity with correlations between the Multidimensional Scale of Perceived Social Support and Depression and Anxiety subscales from the Hopkins Symptoms Checklist.

Four items were selected and modified: “My family really tries to help me,” “I can count on my friends when things go wrong,” “I have friends with whom I can share my joys and sorrow,” and “I can talk about my problems with my family.” The words “family” and “friends” were replaced by the word “teachers.” The final items were, “My teachers really try to help me,” “I can count on my teachers when things go wrong,” “I have teachers with whom I can share my joys and sorrows,” and “I can talk about my problems with my teachers.” Participants endorsed each item on a 7-point Likert-type scale ranging from “Disagree Strongly” to “Agree Strongly.” The current study assessed the reliability of the modified scale with Cronbach’s alpha. Structural validity was examined using exploratory factor analysis (EFA), see preliminary analysis section.

Internalizing Symptoms

A scale of internalizing symptoms was created from three separate existing scales. Five items from the Screen for Child Anxiety Related Emotional Disorders (Birmaher et al., 1999) were used to assess the degree to which participants experienced symptoms of anxiety. Participants rated whether each statement was “Not True or Hardly Ever True,” “Sometimes

True," or "True or Often True". The items are: "I get really frightened for no reason at all," "I am afraid to be alone in the house," "People tell me that I worry too much," "I am scared to go to school," and "I am shy". The original scale consisted of 41 items; however, Birmaher et al. (1999) created the five-item version to serve as a brief screening tool. According to Birmaher et al. (1999), the psychometric properties of the abbreviated scale was similar to the extended scale, $\alpha = .90$. Two items from the Patient Health Questionnaire-2 were used to assess the degree to which participants experienced symptoms of depression. Participants rated whether each statement was, "Not At All," "Several Days," "More Than Half the Days," or "Nearly every Day." The items were: "Little interest or pleasure in doing things" and "Feeling Down, Depressed, or Hopeless." Four items from the Perceived Stress Scale (S. Cohen, Kamarck, & Mermelstein, 1983) were used to assess the degree to which participants experienced symptoms of stress. Participants rated whether each statement was, "Never," "Almost Never," "Sometimes," "Fairly Often," or "Very Often". The items were: "In the last month, how often have you felt that you were unable to control the important things in your life," "In the last month, how often have you felt confident about your ability to handle your personal problems," "In the last month, how often have you felt that things were going your way," and "In the last month, how often have you felt difficulties were piling up so high that you could not overcome them".

Exploratory factor analysis (principle axis extraction) was used to examine the latent factor structure of all the items combined. A total of 533 participants were included in this analysis. Parallel analysis (Horn, 1965; Watkins, 2006), minimum average partials (MAP; Velicer, 1976), and the visual scree test (Cattell, 1966) were procedures used to determine the number of factors to retain. Minimum average partials and the visual scree test indicated a one factor model. All eleven items were included in the initial analysis. Four items were not retained; communality was $\leq .2$ and factor loading $\leq .4$. The final one factor model consisted of seven items with an internal reliability score of $\alpha = .70$.

ELL Status

English language learners are identified by the school district upon admission to their schools. Placement in an ELL program is based on the student's home language preference, educational background, English proficiency, and academic content knowledge in English. The school district uses the WIDA-ACCESS Placement Test to identify incoming students who may be ELLs (Upper Darby School District, 2015).

Academic Achievement

There were multiple indicators of academic achievement: standardized test scores and classroom grades. The information was provided by the school district.

Standardized Test Scores

Participants' performance on the PSSA, was used as an objective measure of achievement at time 2 (T2). Scores were the sum of PSSA Reading and PSSA Math scores.

Classroom Grades

The sum of students' grades in reading and math were used to provide a measure of classroom grades at time 1 (T1) and time 2 (T2).

Demographic Measures

Participants reported their gender, ethnicity, and age.

Procedures

This study was conducted online during school hours. The data were collected by Dr. Eran Magen as part of The Supportive Relationships Program, a grade-wide intervention project.

There were two data collection periods. The first data collection occurred near the middle of the school year and the second collection period took place during the last month of the school year. The school coordinated when each homeroom would complete the survey for each collection period because the availability of laptops was limited. Each data collection phase was completed within two weeks' time.

As this was part of a school intervention evaluation project, parents received passive consent forms and students who chose to opt out were given an alternative activity by their teachers and were not asked to complete the survey. Participants were asked to report school, homeroom number, and student ID number. Student ID numbers were used to identify English Language Learner status and were not used for other identification purposes. Participants were then presented items from the internalizing symptoms scale and the perceived teacher support scale. Demographic information was collected at the end of the survey.

CHAPTER 4

RESULTS

Preliminary Analysis

Descriptive Statistics

Participant characteristics are presented in Table 1. While the distribution of gender did not differ by status (i.e. ELL versus non-ELL), the distribution of ethnic backgrounds was different. In the ELL sample, approximately 97% of the participants were racial/ethnic minorities. In the non-ELL sample, less than 75% of participants were racial/ethnic minorities. In both groups, most of the participants reported that they were 11 years old at Time 1. There were no differences between ELL and non-ELL students' mean age.

Variable means and standard deviations are reported in Table 2. On average, ELLs (M = 3.97, SD = 2.79) reported higher scores in the internalizing symptoms scales than non-ELLs (M = 3.40, SD = 2.61) at Time 1, $t(500) = -1.77$, $p < .05$, $d = 0.21$. At Time 2, ELLs' scores were not different from non-ELLs' scores on the internalizing symptoms scale. On measures of teacher support, ELLs' responses did not differ from non-ELLs' responses.

On average ELLs obtained higher grades in reading (M = 91.86, SD = 6.83) than non-ELLs (M = 87.54, SD = 8.46), $t(528) = -4.10$, $p < .01$, $d = 0.56$. Similar findings emerged at Time 2, where ELLs (M = 89.37, SD = 9.27) obtain higher reading grades than non-ELLs (M = 85.56, SD = 10.73), $t(516) = -2.81$, $p < .01$, d = 0.38.

On average ELLs obtained higher grades in math (M = 89.60, SD = 8.13) than non-ELLs (M = 86.33, SD = 9.60), $t(536) = -2.89$, $p < .01$, $d = 0.37$. The results were consistent at Time 2, where ELLs (M = 88.81, SD = 9.11) obtain higher math grades than non-ELLs (M = 85.15, SD = 10.65), $t(516) = -2.81$, $p < .01$, $d = 0.37$. Overall academic performance was obtained by combining reading and math grades. At both Time 1 and Time 2, ELLs outperformed non-ELLs. On PSSA Reading, PSSA Math, as well as combined PSSA scores ELLs' scaled scores were not significantly different from non-ELLs' scaled scores ($p = .21$).

Participants' performance on PSSA Reading and PSSA Math were categorized as Below Basic, Basic, Proficient, and Advanced. A summary of participants' performance is presented in Table 3. Among non-ELL students 25% scored below basic, 19% scored basic, 29% scored proficient, and 27% scored advanced on PSSA Reading. Among ELL students, 29% of students scored below basic, 18% scored basic, 29% scored proficient, and 24% scored advanced on PSSA Reading.

Among non-ELL students 32% scored below basic, 17% scored basic, 27% scored proficient, and 24% scored advanced on the math section of the PSSA. Among ELL students, 23% of students scored below basic, 19% scored basic, 31% scored proficient, and 27% scored advanced on the math section of the PSSA.

Bivariate correlations between continuous measures for non-ELLs are presented in Table 4 and bivariate correlations between continuous measures for ELLs are presented in Table 5.

Measurement Statistics

As the internalizing symptoms scale and teacher support scale were modified, the reliability and validity of participants' responses were examined. The reliability of the scores on the internalizing symptoms scale was 0.70 at T1 and 0.76 at T2. Exploratory factor analysis was used to examine the structural validity of the scores on the internalizing symptoms scale. At T1, all items of the scale fit a one factor model. Factor loadings are presented in Table 6. The results were consistent at T2.

The reliability of the scores on the teacher support scale was 0.86 at T1 and 0.91 at T2. Exploratory factor analysis was used to examine the validity of the scores on the teacher support scale. At T1, all items of the scale fit a one factor model. Factor loadings are presented in Table 7. The results were consistent at T2.

Table 2. Variable Means and Standard Deviations

	ELL		Non-ELL		Overall	
	Mean	SD	Mean	SD	Mean	SD
Age	11.28	0.48	11.26	0.47	11.24	0.65
Internalizing Symptoms (T1)	3.97	2.79	3.40	2.61	3.55	2.71
Internalizing Symptoms (T2)	2.98	2.73	2.48	2.74	2.61	2.74
Teacher Support (T1)	21.31	6.54	21.17	6.26	21.26	6.19
Teacher Support (T2)	18.00	7.36	17.87	7.23	18.03	7.23
Reading (T1)	91.86	6.83	87.35	9.38	88.12	8.38
Reading (T2)	89.37	9.27	85.56	10.74	84.77	14.91
Math (T1)	89.60	9.13	86.33	9.60	86.83	9.46
Math (T2)	88.81	9.11	85.17	10.65	85.71	10.50
Classroom Grades (T1)	172.03	30.67	173.91	14.97	173.64	18.10
Classroom Grades (T2)	178.23	14.92	170.70	18.84	171.72	18.52
PSSA Reading Scaled Score	1269.92	239.57	1301.12	239.16	1296.52	239.25
PSSA Math Scaled Score	1360.34	217.12	1378.68	269.80	1375.85	262.28
PSSA Total Scaled Score	2633.11	421.07	2679.8	476.60	2672.91	468.74

Table 3. PSSA Performance Level

	ELL		Non-ELL	
	N	%	N	%
PSSA Reading				
Below Basic	23	29	116	25
Basic	14	18	83	18
Proficient	23	29	135	29
Advanced	19	24	122	27
PSSA Math				
Below Basic	19	23	114	32
Basic	16	19	90	17
Proficient	26	31	91	27
Advanced	22	27	161	24

Table 4. Bivariate Correlations between Continuous Measures for Non-ELLs

	Measure	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Age													
2	Internalizing Symptoms (T1)	-0.02												
3	Internalizing Symptoms (T2)	0.05	0.51*											
4	Teacher Support (T1)	-0.08	-0.20*	-0.10										
5	Teacher Support (T2)	-0.09	-0.11	-0.05	0.37*									
6	Reading (T1)	0.02	-0.19*	-0.09	0.11*	0.12								
7	Reading (T2)	0.03	-0.09	-0.11	0.02	0.04	0.60*							
8	Math (T1)	0.08	-0.18*	-0.00	0.13*	0.12	0.38*	0.42*						
9	Math (T2)	-0.04	-0.09	-0.10	0.07	0.11	0.40*	0.54*	0.64*					
10	Classroom Grades (T1)	0.07	-0.22*	-0.05	0.14*	0.14*	0.80*	0.60*	0.85*	0.64*				
11	Classroom Grades (T2)	-0.04	-0.10*	-0.1	0.06	0.09	0.58*	0.88*	0.60*	0.88*	0.71*			
13	PSSA Math Scaled Score	0.01	-0.25*	-0.01	0.04	0.03	0.43*	0.45*	0.52*	0.50*	0.58*	0.54*		
12	PSSA Reading Scaled Score	-0.03	-0.25*	-0.08	-0.00	0.07	0.39*	0.40*	0.44*	0.44*	0.49*	0.48*	0.75*	
13	PSSA Total Scaled Score	-0.02	-0.27*	-0.05	0.02	0.05	0.44*	0.46*	0.52*	0.50*	0.57*	0.55*	0.94*	0.93*

* $p < .05$

Table 5. Bivariate Correlations between Continuous Measures for ELLs

	Measure	1	2	3	4	5	6	7	8	9	10	11	12	
1	Age													
2	Internalizing Symptoms (T1)	0.18												
3	Internalizing Symptoms (T2)	0.05	0.51*											
4	Teacher Support (T1)	-0.05	-0.18	-0.13										
5	Teacher Support (T2)	-0.12	-0.21	-0.38*	0.52*									
6	Reading (T1)	-0.25*	-0.13	0.19	-0.04	-0.10								
7	Reading (T2)	-0.23	-0.03	-0.18	0.05	0.10	0.37*							
8	Math (T1)	-0.06	-0.06	0.51	-0.07	-0.03	0.09	0.31*						
9	Math (T2)	0.06	0.05	0.06	-0.11	0.04	0.14	0.32*	0.57*					
10	Classroom Grades (T1)	-0.22	-0.12	0.20	-0.09	-0.12	0.96*	0.40*	0.35*	0.34*				
11	Classroom Grades (T2)	-0.16	-0.02	-0.08	-0.06	0.02	0.43*	0.82	0.55*	0.81*	0.59*			
13	PSSA Math Scaled Score	-0.17	-0.17	-0.14	0.03	0.05	0.28*	0.47*	0.48*	0.40*	0.48*	0.53*		
12	PSSA Reading Scaled Score	-0.20	-0.21	-0.24	-0.05	0.06	0.36*	0.46*	0.35*	0.27*	0.46*	0.47*	0.71*	
13	PSSA Total Scaled Score	-0.23*	-0.23*	-0.20	0.00	0.06	0.35*	0.52*	0.43*	0.35*	0.50*	0.55*	0.92*	0.93*

* $p < .05$

Table 6. Internalizing Symptoms Scale Factor Loadings

	T1		T2	
	Factor 1	Uniqueness	Factor 1	Uniqueness
Item 1	0.51	0.74	0.59	0.65
Item 2	0.59	0.66	0.58	0.66
Item 3	0.44	0.81	0.47	0.78
Item 4	0.56	0.68	0.61	0.63
Item 5	0.48	0.77	0.59	0.66
Item 6	0.40	0.84	0.52	0.73
Item 7	0.48	0.77	0.54	0.71

Table 7. Teacher Support Scale Factor Loadings

	T1		T2	
	Factor 1	Uniqueness	Factor 1	Uniqueness
Item 1	0.75	0.44	0.78	0.39
Item 2	0.83	0.32	0.89	0.21
Item 3	0.76	0.43	0.85	0.28
Item 4	0.77	0.41	0.85	0.27

In order to examine the validity of the responses provided by ELLs, separate analyses were conducted with only data collected from the ELL participants. The reliability of the scores on the internalizing symptoms scale was 0.71 at T1 and 0.77 at T2. Exploratory factor analysis showed that all items of the internalizing symptoms scale fit a one factor model for T1 and T2.

Factor loadings are presented in Table 8. The reliability of the scores on the teacher support scale was 0.84 at T1 and 0.91 at T2. Exploratory factor analysis showed that all items of the teacher support scale fit a one factor model for T1 and T2. Factor loadings are presented in Table 9

Table 8. Internalizing Symptoms Scale Factor Loadings for ELLs

	T1		T2	
	Factor 1	Uniqueness	Factor 1	Uniqueness
Item 1	0.62	0.62	0.62	0.62
Item 2	0.54	0.71	0.54	0.71
Item 3	0.54	0.71	0.54	0.71
Item 4	0.47	0.78	0.47	0.78
Item 5	0.59	0.65	0.59	0.66
Item 6	0.44	0.81	0.44	0.81
Item 7	0.39	0.85	0.39	0.85

Table 9. Teacher Support Scale Factor Loadings for ELLs

	T1		T2	
	Factor 1	Uniqueness	Factor 1	Uniqueness
Item 1	0.69	0.52	0.71	0.50
Item 2	0.75	0.44	0.90	0.19
Item 3	0.74	0.46	0.88	0.22
Item 4	0.82	0.33	0.91	0.18

Differential item functioning (DIF) analysis was conducted to assess bias in test items. DIF analysis examines participants' response patterns and determines if the probability of certain responses are related to group identity (i.e. ELL vs non-ELL) and ability level (Swaminathan & Rogers, 1990). When controlling for overall score on the internalizing scale, no differences in response pattern were detected. Similarly, when controlling for overall score on the teacher support scale, no differences in response patterns were detected.

Missing Data

With the exception of ELL status, no other variable had more than 5% of its data missing. To examine if missing ELL status was related to important demographic variables, multiple t-tests were conducted. Students who could not be identified showed no distinct ethnic profile. They tended to be slightly younger (M = 11.06, SD = 1.56), on average, than those who could be identified (M = 11.26, SD = 0.47), $t(564) = -2.09$, $p < .05$).

Students who could not be identified tended to report higher scores (M = 4.23, SD = 3.25) on the internalizing symptoms scale than students who could be identified (M = 3.49, SD = 2.65), $t(548) = 1.81$, $p < .05$). No differences on the teacher support scales were detected. Missing ELL status could be due to human error. Students were asked to enter their ID number on the survey; some students may have entered their ID numbers incorrectly.

Data Analysis

To examine the relationship among ELL status, teacher support, internalizing symptoms, and academic achievement, tests of mediation, moderation, and moderated mediation were conducted. PROCESS, developed by Preacher, Rucker, and Hayes (2007) was used to run those analyses. For the following analyses, the statistical significance threshold was set at $p = .05$. Per Hayes's recommendation on regression models with dichotomous independent variables, standardized beta weights will be reported throughout (Hayes, 2013). The interpretation of effect sizes follows Cohen's criteria for effect size magnitude, where 0.02 is a small effect, 0.13 is a medium effect, and 0.26 is a large effect (Cohen, 1988).

Test of Mediation

A multistep process, as specified by Hayes (2013) was used to explore whether teacher support mediated the relationship between ELL status and internalizing symptoms. In step 1, a model was tested that included teacher support at time 1 (T1) and internalizing symptoms at T1 (Figure 1). In step 2, a model was tested that included teacher support at T1 and internalizing symptoms at T2 controlling for internalizing symptoms at T1 (Figure 2). The same procedure was used to examine classroom grades as the outcome variable. As classroom grades are assigned by teachers, more supportive teachers may assign better grades. For this reason PSSA scores were also examined at T2.

Internalizing symptoms at T1

To examine whether teacher support mediates the relationship between ELL status and internalizing symptoms at T1 (conceptual model shown in Figure 1), two linear models were examined. The first model included teacher support at T1 and ELL status, where teacher support was the outcome variable and ELL status was the predictor variable. This model showed that ELL status did not predict teacher support (p = .86, r^2 =. 00).

The second model included ELL status, teacher support at time 1, and internalizing symptoms at time 1, where internalizing symptoms was the outcome variable and ELL status and teacher support acted as predictor variables. Because the data in this study were not normally distributed (based on graphical analysis), bootstrapping (Preacher, Rucker, & Hayes, 2007), a resampling technique, was used to assess the strength of the indirect or mediational effects of teacher support. This model was statistically significant (p<.001) with a small effect (r^2= .05). The direct effect, or the effect of ELL status on internalizing symptoms when teacher support was held constant, was not significant, β = .61, $t(489) = 1.88$, $p = .06$. The direct effect of teacher support on internalizing symptoms when ELL status was held constant, was significant β = -.08, $t(489) = -4.48$, $p < .001$. The indirect effect, or the effect of ELL status on internalizing symptoms through teacher support, was non-significant β = -.01. The full mediation model is shown in Table 10.

In summary, increased teacher support at T1 predicted fewer internalizing symptoms at T1 ($p < .001$). ELL status appeared to predict increased internalizing symptoms, but the relationship was non-significant ($p = .06$). Accordingly, teacher support had a direct effect only but was not a significant mediating variable.

Table 10. Mediation Model of Teacher Support (T1) on Internalizing Symptoms (T1)

Model 1	β	*SE*	*T*	*P*
Constant	21.1779	0.3103	68.2561	0.0000
ELL Status	0.1379	0.7894	0.1747	0.8614
Model 2	β	*SE*	*T*	*P*
Constant	5.1773	0.413	12.5353	0.0000
ELL Status	0.6088	0.3242	1.8778	0.061
Teacher Support (T1)	-0.0832	0.0186	-4.4834	0.0000
R^2	.05			
Direct Effect	.61			
Indirect Effect	-.01			

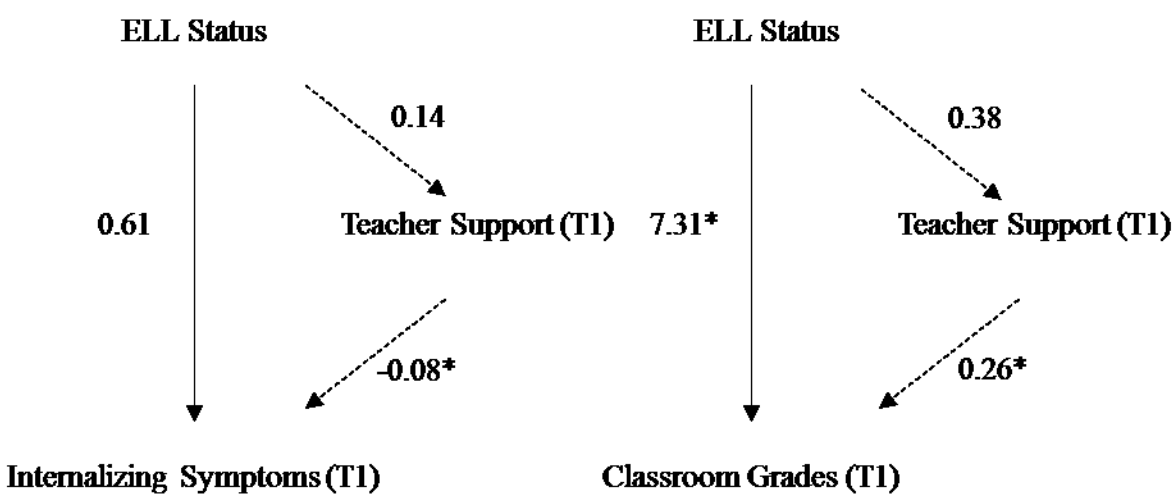


Figure 1. Mediation Models of Teacher Support
Note. These models depict teacher support mediating the relationship between ELL status, internalizing symptoms, and classroom grades. Unstandardized beta weights are reported.
*$p < .05$

Internalizing symptoms at T2

To assess if teacher support mediates the relationship between ELL status and internalizing symptoms over time (conceptual model shown in Figure 2), the hierarchical linear model consisted of ELL status, teacher support at T1, and internalizing symptoms at T2. The results showed that neither ELL status (p = .16) nor teacher support at T1 (p =.09) predicted internalizing symptoms at T2. The model had a small effect (r^2 = .02). The full longitudinal mediation model is shown in Table 11. Similar results were obtained after controlling for internalizing symptoms at baseline (see Table 12). After controlling for internalizing symptoms at T1, neither ELL status (p = .41) nor teacher support at T1 (p =.74) predicted internalizing symptoms at T2; however, this model accounted for 26% of the variance in the data (r^2 = .26)

In other words, teacher support at T1 was not related to internalizing symptoms at T2 even though teacher support at T1 was related to internalizing symptoms at T1. The level of teacher support reported at one point in time is related to the level of internalizing symptoms measured at the same point in time, but not to the level of internalizing symptoms measured at a later time point.

Table 11. Mediation Model of Teacher Support (T1) on Internalizing Symptoms (T2)

Model 1	*β*	*SE*	*T*	*P*
Constant	20.8711	0.4346	48.0273	0.0000
ELL Status	0.0112	1.0109	0.0111	0.9911
Model 2	*β*	*SE*	*T*	*P*
Constant	3.3953	0.5617	6.0451	0.0000
ELL Status	0.5989	0.4258	1.4067	0.1606
Teacher Support (T1)	-0.0439	0.0254	-1.7238	0.0859

R^2	.018
Direct Effect	.599
Indirect Effect	-.0005

Table 12. Mediation Model of Teacher Support (T1) on Internalizing Symptoms (T1 & T2)

Model 1	*β*	*SE*	*T*	*P*
Constant	22.599	0.6768	33.3889	0.0000
Internalizing Symptoms (T1)	-0.4649	0.1404	-3.3115	0.0011
ELL Status	0.1241	1.0341	0.12	0.9046
Model 2	*β*	*SE*	*T*	*P*
Constant	0.8252	0.5984	1.3791	0.1691
Internalizing Symptoms (T1)	0.4987	0.0547	9.1176	0.0000
ELL Status	0.3266	0.3945	0.828	0.4084
Teacher Support (T1)	-0.0081	0.0239	-0.338	0.7357
R^2	0.263			
Direct Effect	0.327			
Indirect Effect	-0.001			

Classroom Grades at T1

The same procedures were used to examine whether or not teacher support at T1 mediated the relationship between ELL and classroom grades at T1. Classroom grades are the sum of participants' math and reading grades in a given marking period. The first model included teacher support at T1 and ELL status, where teacher support was the outcome variable and ELL status was the predictor variable. This model was not statistically significant and had a small effect (p = .64, r^2 =. 00); ELL status did not predict teacher support.

The second model included ELL status, teacher support at time 1, and classroom grades at time 1, where classroom grades at T1 was the outcome variable and ELL status and teacher support acted as predictor variables. This model was statistically significant ($p < .001$) with a small effect (r^2 =. 04). The direct effect, or the effect of ELL status on classroom grades when teacher support was held constant, was significant, $\beta = 7.31$, $t(512) = 3.86$, $p < .001$. The direct effect, or the effect of teacher support on classroom grades when ELL status was held constant, was also significant, $\beta = .26$, $t(512) = 2.53$, $p < .05$. The indirect effect, or the effect of ELL status on internalizing symptoms through teacher support, was not significant, $\beta = .10$. The full mediation model is shown in Table 13.

In summary, increased teacher support at T1 predicted higher classroom grades at T1 ($p < .05$). ELL status also predicted higher classroom grades ($p < .001$). Accordingly, teacher support had a direct effect only but was not a significant mediating variable.

Classroom Grades at T2.

To assess if teacher support mediates the relationship between ELL status and classroom grades over time (conceptual model shown in Figure 2), the hierarchical linear model consisted of ELL status, teacher support at T1, and classroom grades at T2. The results showed that ELL status predicted classroom grades at T2 ($p < .05$), but teacher support at T1 did not (p =.35). Additionally, the model had a small effect ($r^2 = .02$). The full longitudinal mediation model is shown in Table 14. Similar results were obtained after controlling for classroom grades at baseline (see Table 15). After controlling for classroom grades at T1, neither ELL status (p =

.55) nor teacher support at T1 (p =.12) predicted classroom grades at T2; however, this model accounted for 51% of the variance in the data (r^2 = .51).

Table 13. Mediation Model of Teacher Support (T1) on Classroom Grades (T1)

Model 1	*β*	*SE*	*T*	*P*
Constant	21.157	0.2991	70.7359	0.0000
ELL Status	0.3793	0.8171	0.4642	0.6427
Model 2	*β*	*SE*	*T*	*P*
Constant	168.5017	2.2702	74.2227	0.0000
ELL Status	7.3079	1.8917	3.8631	0.0001
Teacher Support (T1)	0.2585	0.1022	2.5296	0.0117
R^2	.04			
Direct Effect	7.31			
Indirect Effect	0.10			

In other words, teacher support at T1 had no direct effect on classroom grades at T2 even though teacher support at T1 had a direct effect on classroom grades at T1. The level of teacher support reported at one point in time is related to participants' classroom grades measured at the same point in time, but not to their classroom grades at a later point in time. While the longitudinal mediation model for predicting classroom grades was not statistically significant, the effect size suggested that 51% of the variance in the data can be explained by the model. According to Kirk (1996), an effect size that large has practical significance.

Standardized Test Scores at T2

Because teachers assign classroom grades, more supportive teachers may tend to give higher grades; thus it was necessary to examine a standardized measure of academic achievement. As such, standardized test scores, the sum of PSSA reading and math scores, were examined while controlling for classroom grades at T1 (see Figure 2). The results showed that ELL status had a direct effect on standardized test scores, $\beta = -114.10$, $t(504) = -2.22$, $p < .05$, but teacher support at T1 did not predict standardized test scores or mediate the relationship between ELL status and standardized test scores ($p = .18$). The model accounted for 32% of the variance in the data ($r^2 = .32$). The full longitudinal mediation model is shown in Table 16.

In summary, teacher support at T1 had no direct effect or indirect effect on PSSA scores, but ELL status had a direct effect on standardized test scores. It is important to note that although teacher support at T1 did not emerge as a statistically significant predictor or mediating variable, this model has practical significance because it accounted for 32% of the variance in the data.

Table 14. Mediation Model of Teacher Support (T1) on Classroom Grades (T2)

Model 1	β	*SE*	*T*	*P*
Constant	21.2202	0.2998	70.78	0.0000
ELL Status	0.316	0.8111	0.3897	0.6969
Model 2	β	*SE*	*T*	*P*
Constant	168.1242	2.9122	57.7301	0.0000
ELL Status	7.5315	2.3802	3.1643	0.0016
Teacher Support (T1)	0.123	0.1308	0.94	0.3476
R^2	.021			
Direct Effect	.0389			
Indirect Effect	.0021			

Table 15. Mediation Model of Teacher Support (T1) on Classroom Grades (T1 & T2)

Model 1	*β*	*SE*	*T*	*P*
Constant	11.6154	3.2962	3.5239	0.0005
Classroom Grades (T1)	0.0551	0.0189	2.9207	0.0037
ELL Status	-0.0684	0.8173	-0.0837	0.9333
Model 2	*β*	*SE*	*T*	*P*
Constant	20.055	6.9418	2.889	0.004
Classroom Grades (T1)	0.8842	0.0396	22.3503	0.0000
ELL Status	1.026	1.7001	0.6035	0.5465
Teacher Support (T1)	-0.146	0.0931	-1.5682	0.1175
R^2	0.513			
Direct Effect	1.026			
Indirect Effect	0.010			

Table 16. Mediation Model of Teacher Support (T1) on Standardized Test Scores (T2)

Model 1	*β*	*SE*	*T*	*P*
Constant	12.9681	3.3231	3.9024	0.0001
Classroom Grades (T1)	0.0471	0.019	2.4754	0.0136
ELL Status	-0.1433	0.8438	-0.1698	0.8652
Model 2	*β*	*SE*	*T*	*P*
Constant	-349.3954	205.8808	-1.6971	0.0903
Classroom Grades (T1)	17.8898	1.1679	15.318	0.0000
ELL Status	-114.0959	51.506	-2.2152	0.0272
Teacher Support (T1)	-3.6277	2.7163	-1.3355	0.1823
R^2	0.3179			
Direct Effect	-114.0959			
Indirect Effect	.5199			

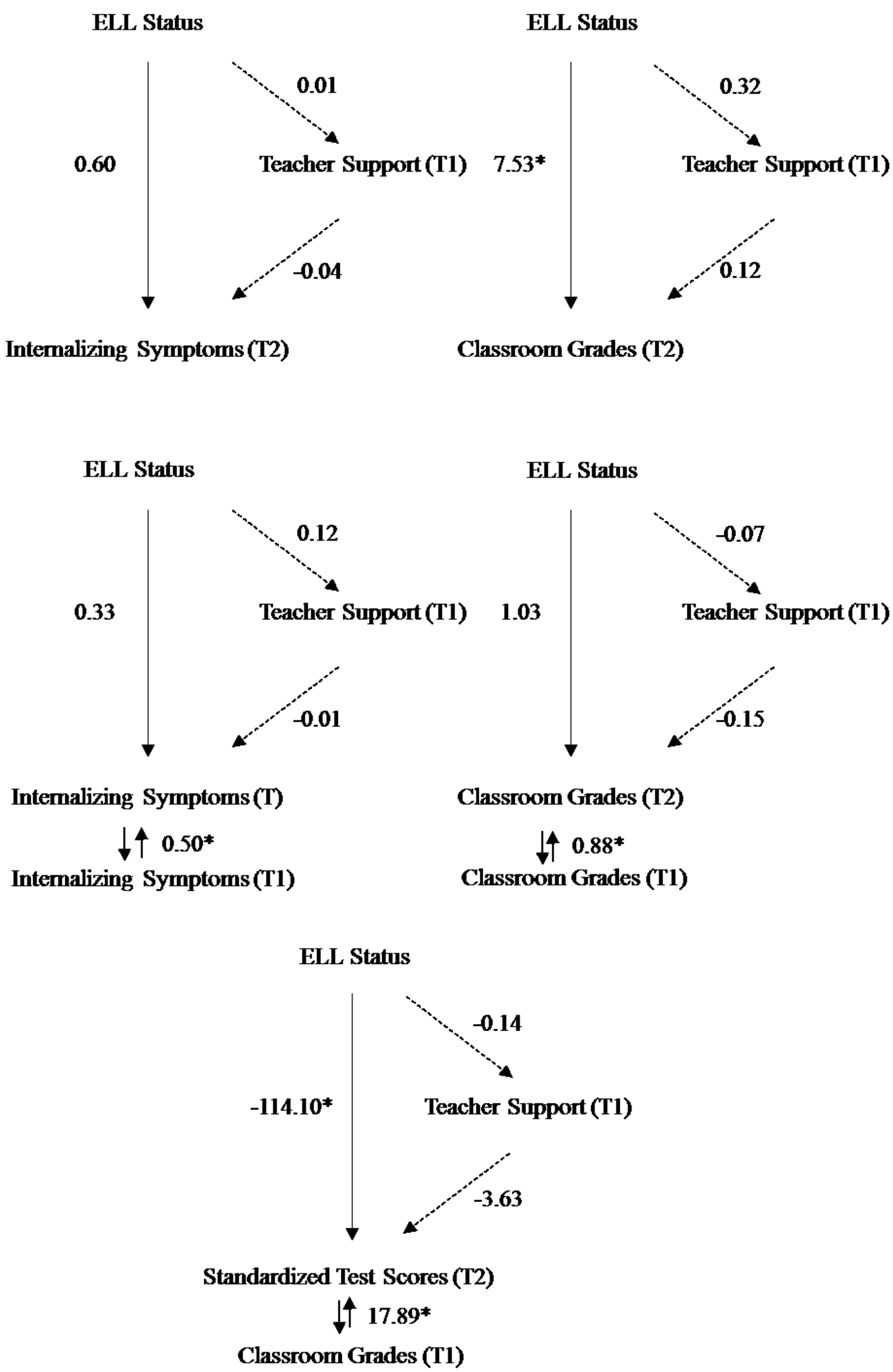


Figure 2. Longitudinal Mediation Models of Teacher Support
Note. These models depict teacher support mediating the relationship between ELL status, internalizing symptoms, classroom grades, and standardized test scores over time. Unstandardized beta weights are reported.
*$p < .05$

Test of Moderation

The hypothesis that teacher support moderates the relationship between ELL status and internalizing symptoms or academic achievement will be supported if a change in ELL status was associated with a change in internalizing symptoms or classroom grades depending on the level of teacher support. In order to determine whether or not teacher support acts as a moderator in these relationships, a hierarchical linear regression model that included an interaction term was tested. That is, the predictor variables in the model consisted of ELL status, teacher support, and the product (interaction term) of ELL status and teacher support. The same approach was taken to examine classroom grades as the outcome variable.

According to Hayes (2013), one way to probe for an interaction effect is to use the Johnson-Neyman technique. This technique allows researchers to determine the range of values for when teacher support moderates the relationship between ELL status and internalizing symptoms or academic achievement.

Internalizing Symptoms at T1

While teacher support predicted internalizing symptoms at T1, β = -.08, $t(488)$ = -4.16, $p < .001$, ELL status and the interaction term were not statistically significant predictors of internalizing symptoms and had a small effect ($r^2 = .05$). The full moderation model is shown in Table 17.

Classroom Grades at T1

The same procedure was utilized to test the whether or not teacher support moderated the relationship between ELL status and classroom grades. In this model, the main effects and the interaction effect were significant ($r^2 = .05$). A summary of the model is displayed in Table 18. The results showed that both ELL status ($p < .01$) and teacher support ($p < .01$) predict classroom grades. The interaction suggests non-ELL students obtain lower grades when they perceive less teacher support and they obtain higher grades when they perceive more teacher support. On the other hand, there were no differences in classroom grades depending on the level of perceived teacher support among ELL students (see Figure 4). It is important to note that this model had a small effect (r^2 = .05). This suggests that while the model has statistical significance, it may lack practical significance.

Table 17. Moderation Model of Teacher Support (T1) on Internalizing Symptoms (T1)

	β	*SE*	*T*	*P*
Constant	5.2093	0.4499	11.5792	0.0000
ELL Status	0.4182	1.1036	0.3789	0.7049
Teacher Support (T1)	-0.0847	0.0204	-4.157	0.0000
Interaction	0.009	0.0495	0.1807	0.8567
R^2	0.046			

Table 18. Moderation Model of Teacher Support (T1) on Classroom Grades (T1)

	β	*SE*	*T*	*P*
Constant	166.7377	2.4361	68.4434	0.0000
ELL Status	19.3857	6.442	3.0093	0.0027
Teacher Support (T1)	0.3419	0.1104	3.096	0.0021
Interaction	-0.5623	0.2868	-1.9608	0.0504
R^2	0.048			

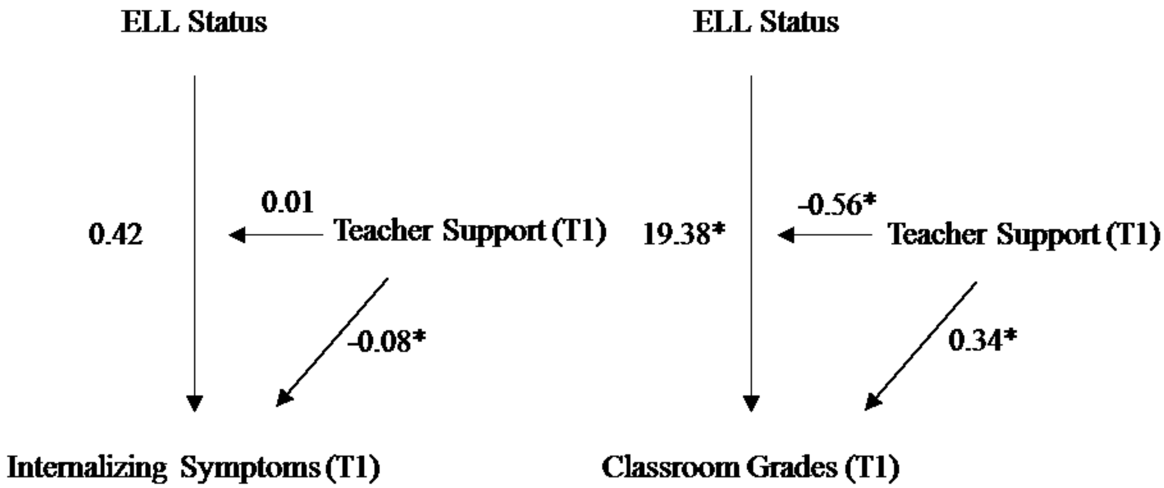


Figure 3. Moderation Models of Teacher Support
Note. These models depict teacher support moderating the relationship between ELL status, internalizing symptoms, and classroom grades. Unstandardized beta weights are reported.
*$p < .05$

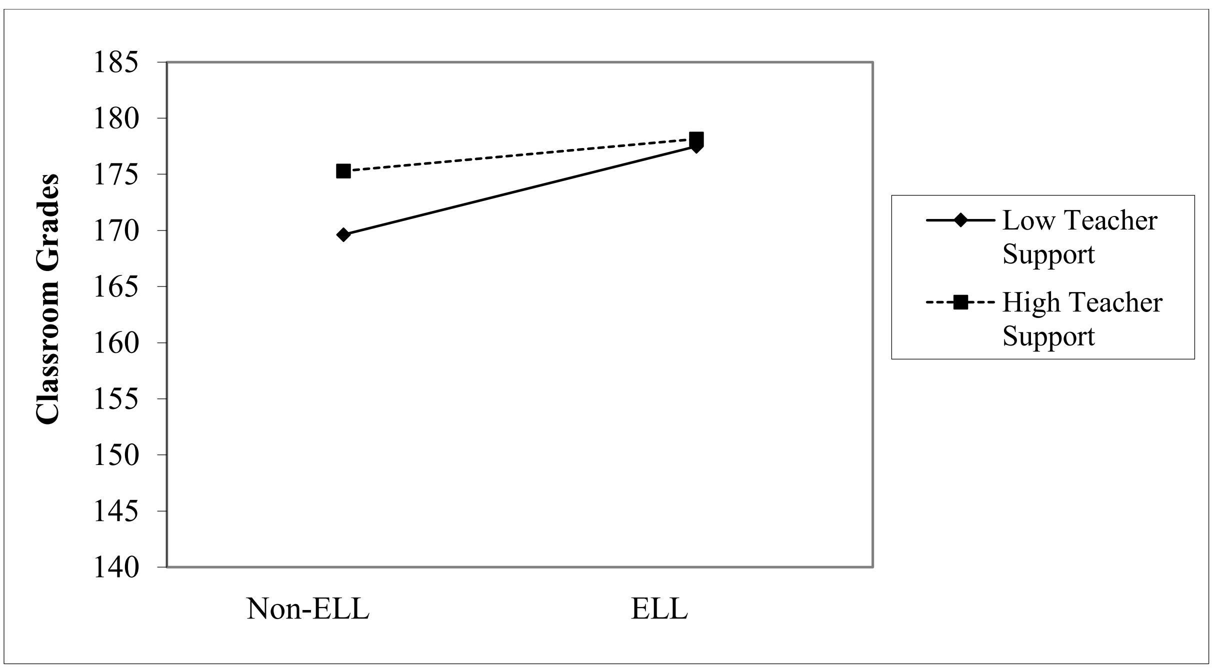


Figure 4. Teacher Support Moderates ELL Status and Classroom Grades

In summary, the interaction between ELL status and teacher support did not predict internalizing symptoms, but the interaction did predict classroom grades. The results suggest that more teacher support was related to higher classroom grades for non-ELLs, but not for ELLs. Although the interaction was significant, it may not be practical as the model had a small effect.

Test of Moderated Mediation

A conceptual moderated mediation model is shown in Figure 5. In this model, teacher support was hypothesized to moderate the indirect relationship of ELL status and classroom grades through internalizing symptoms. There were two pathways that need to be examined; as such, two regression models were required. The first model included internalizing symptoms and ELL status. Internalizing symptoms was the outcome variable and ELL status was the predictor variable. The second model included ELL status, teacher support, internalizing symptoms, the interaction between teacher support and internalizing symptoms, and classroom grades. While classroom grades was the outcome variable, all the other variables in the model are predictor variables.

Classroom Grades at T1

A moderated mediation macro, PROCESS, developed by Preacher, Rucker, and Hayes (2007) was used to test the degree to which teacher support at T1 mediated the indirect relationship between ELL status and classroom grades at T1 through internalizing symptoms at T1. As recommended by Preacher, Rucker, and Hayes (2007), the results were verified with bootstrapping. The moderated mediation model showed that ELL and internalizing symptoms at T1 predicted classroom grades at T2, but the interaction between teacher support at T1 and internalizing symptoms at T1 as well as the indirect effect of internalizing symptoms at T1 did not predict classroom grades (see Table 19). The moderated mediation model also had a small effect (r^2 = .07).

Table 19. Moderated Mediation Model of Teacher Support (T1) on Classroom Grades (T1)

Model 1	*β*	*SE*	*T*	*P*
Constant	5.165	0.4446	11.6184	0.0000
ELL Status	0.6256	1.1571	0.5406	0.5890
Teacher Support (T1)	-0.083	0.0201	-4.1189	0.0000
Interaction	-0.0101	0.0514	-0.1962	0.8446
Model 2	*β*	*SE*	*T*	*P*
Constant	178.1046	1.1109	160.328	0.0000
Internalizing Symptoms (T1)	-1.1031	0.2516	-4.3849	0.0000
ELL Status	8.1318	1.9169	4.2421	0.0000
R^2	0.070			
Direct Effect	8.1318			
Indirect Effect	-.5245			

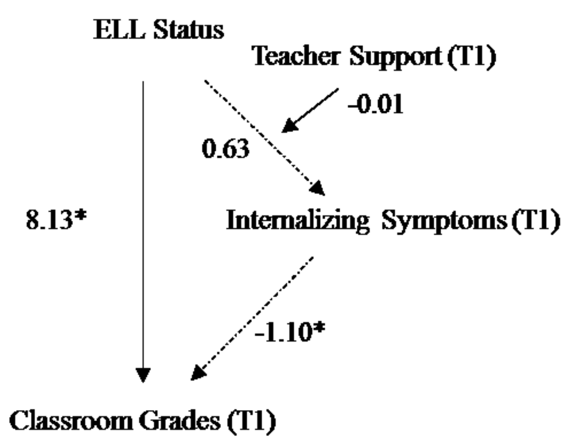


Figure 5. Moderated Mediation Model of Teacher Support on Classroom Grades (T1)
Note. This model depicts teacher support mediating the indirect relationship between ELL status and classroom grades through internalizing symptoms. Unstandardized beta weights are reported.
*$p < .05$

Classroom Grades at T2

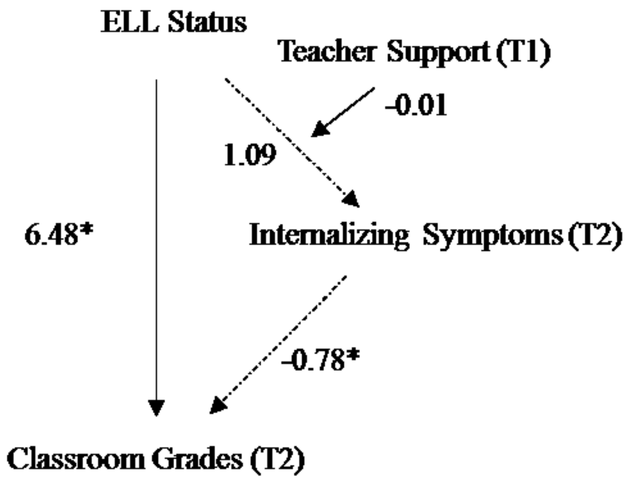
To determine if the moderated mediation was significant over time, internalizing symptoms at T2 and classroom grades at T2 were substituted in the moderated mediation model (see Figure 6). Teacher support at T1 did not moderate the indirect relationship between ELL status and classroom grades at T2 through internalizing symptoms at T2 (see Table 20). The model also had a small effect (r^2 = .03). When controlling for internalizing symptoms at T1 and classroom grades at T1, internalizing symptoms at T2 predicted classroom grades at T2, but the interaction between teacher support at T1 and internalizing symptoms at T2 as well as the mediating effects of internalizing symptoms at T2 did not predict classroom grades at T2 (see Table 21). The model, however, may have practical significance (r^2 = .48).

Table 20. Moderated Mediation Model of Teacher Support (T1) on Classroom Grades (T2)

Model 1	*β*	*SE*	*T*	*P*
Constant	3.351	0.6393	5.2415	0.0000
ELL Status	1.0901	1.4483	0.7527	0.4523
Teacher Support (T1)	-0.0422	0.0292	-1.4434	0.1501
Interaction	-0.0136	0.0656	-0.2072	0.8360
Model 2	*β*	*SE*	*T*	*P*
Constant	175.4515	1.4868	118.0052	0.0000
Internalizing Symptoms (T2)	-0.7833	0.3797	-2.0631	0.0401
ELL Status	6.4756	2.8544	2.2686	0.0241
R^2	0.031			
Direct Effect	6.4756			
Indirect Effect	-.7006			

Table 21. Moderated Mediation Model of Teacher Support (T1) on Classroom Grades (T1 & T2)

Model 1	*β*	*SE*	*T*	*P*
Constant	-2.6811	2.0537	-1.3055	0.1929
Internalizing Symptoms (T1)	0.5654	0.0574	9.848	0.0000
Classroom Grades (T1)	0.0181	0.011	1.6486	0.1005
ELL Status	0.4109	1.2895	0.3187	0.7503
Teacher Support (T1)	-0.0047	0.0269	-0.1731	0.8627
Interaction	0.0056	0.0583	0.0963	0.9233
Model 2	*β*	*SE*	*T*	*P*
Constant	28.8906	10.1546	2.8451	0.0048
Internalizing Symptoms (T1)	0.9398	0.3407	2.7586	0.0062
Classroom Grades (T1)	0.8207	0.0561	14.6332	0.0000
ELL Status	-0.2764	2.1565	-0.1282	0.8981
Internalizing Symptoms (T2)	0.5654	0.0574	9.848	0.0000
Classroom Grades (T2)	0.0181	0.011	1.6486	0.1005
R^2	0.482			
Direct Effect	-.2764			
Indirect Effect	-.5620			



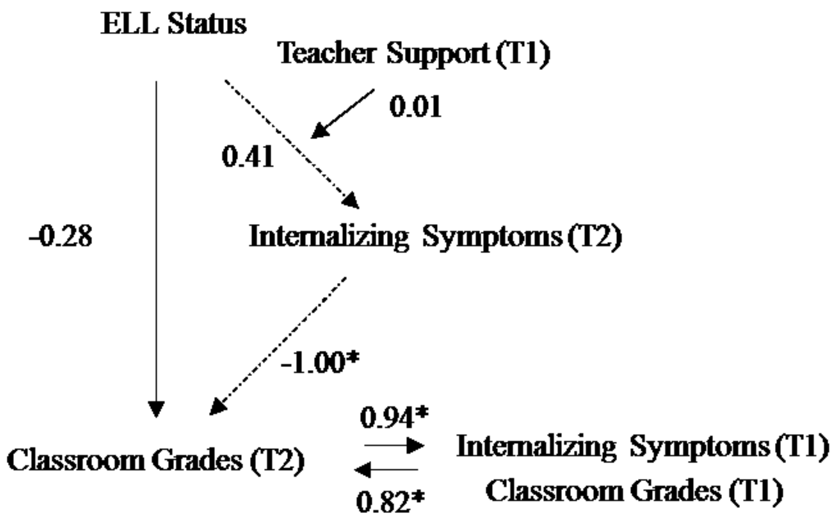


Figure 6. Moderated Mediation Models of Teacher Support on Classroom Grades (T2)
Note. This model depicts teacher support mediating the indirect relationship between ELL status and classroom grades through internalizing symptoms over time. Unstandardized beta weights are reported.
**p* < .05

Standardized Test Scores at T2

Another moderated mediation model examined standardized test scores as the outcome variable to determine if the moderated mediation model predicted standardized test scores (see Figure 7). In this model, ELL status, internalizing symptoms at T2, and the interaction variable (teacher support at T1 X internalizing symptoms at T2) did not predict standardized test scores.

The model also lacked practical significance, as it had a small effect (r^2 = .01). The results of the moderated mediation model are displayed in Table 22. When controlling for internalizing symptoms at T1 and internalizing symptoms at T2, the results remained the same; however, the fit of the model increased to 32% (r^2 = .32). The results of the moderated mediation model are displayed in Table 23.

Table 22. Moderated Mediation Model of Teacher Support (T1) on Standardized Test Scores (T2)

Model 1	*β*	*SE*	*T*	*P*
Constant	3.3577	0.627	5.355	0.0000
ELL Status	0.8054	1.3978	0.5762	0.5650
Teacher Support (T1)	-0.042	0.0287	-1.4609	0.1452
Interaction	-0.0097	0.0634	-0.1524	0.8790
Model 2	*β*	*SE*	*T*	*P*
Constant	2744.5551	39.0638	70.2582	0.0000
ELL Status	-33.5735	71.1473	-0.4719	0.6374
Internalizing Symptoms (T2)	-13.033	9.9399	-1.3112	0.1909
R^2	0.008			
Direct Effect	-33.5735			
Indirect Effect	-8.6877			

Table 23. Moderated Mediation Model of Teacher Support (T1) on Standardized Test Scores (T2) with Baseline

Model 1	β	*SE*	*T*	*P*
Constant	-2.7343	2.0461	-1.3363	0.1827
Internalizing Symptoms (T1)	0.5685	0.0573	9.9236	0.0000
Classroom Grades (T1)	0.0183	0.0109	1.6796	0.0943
ELL Status	0.4026	1.2811	0.3143	0.7536
Teacher Support (T1)	-0.0044	0.0265	-0.166	0.8683
Interaction	0.0057	0.058	0.0989	0.9213
Model 2	β	*SE*	*T*	*P*
Constant	7.5956	301.0531	0.0252	0.9799
Internalizing Symptoms (T1)	-24.0664	10.1379	-2.3739	0.0184
Classroom Grades (T1)	15.924	1.662	9.5813	0.0000
ELL Status	-94.5903	63.9438	-1.4793	0.1404
Internalizing Symptoms (T2)	3.106	9.7167	0.3197	0.7495
R^2	0.322			
Direct Effect	-94.5903			
Indirect Effect	1.7381			

In summary, ELL status and internalizing symptoms at T1 had a direct effect on classroom grades at T1, but the moderated mediation was non-significant. Teacher support at T1 did not moderate the indirect relationship between ELL status and classroom grades at T1 through internalizing symptoms at T1. Internalizing symptoms at T2 predicted classroom grades at T2 after controlling for internalizing symptoms at T1 and academic achievement at T1. Neither the longitudinal models for classroom grades nor standardized test scores were statistically significant, but after controlling for internalizing symptoms and classroom grades at baseline, those models appear to have practical significance.

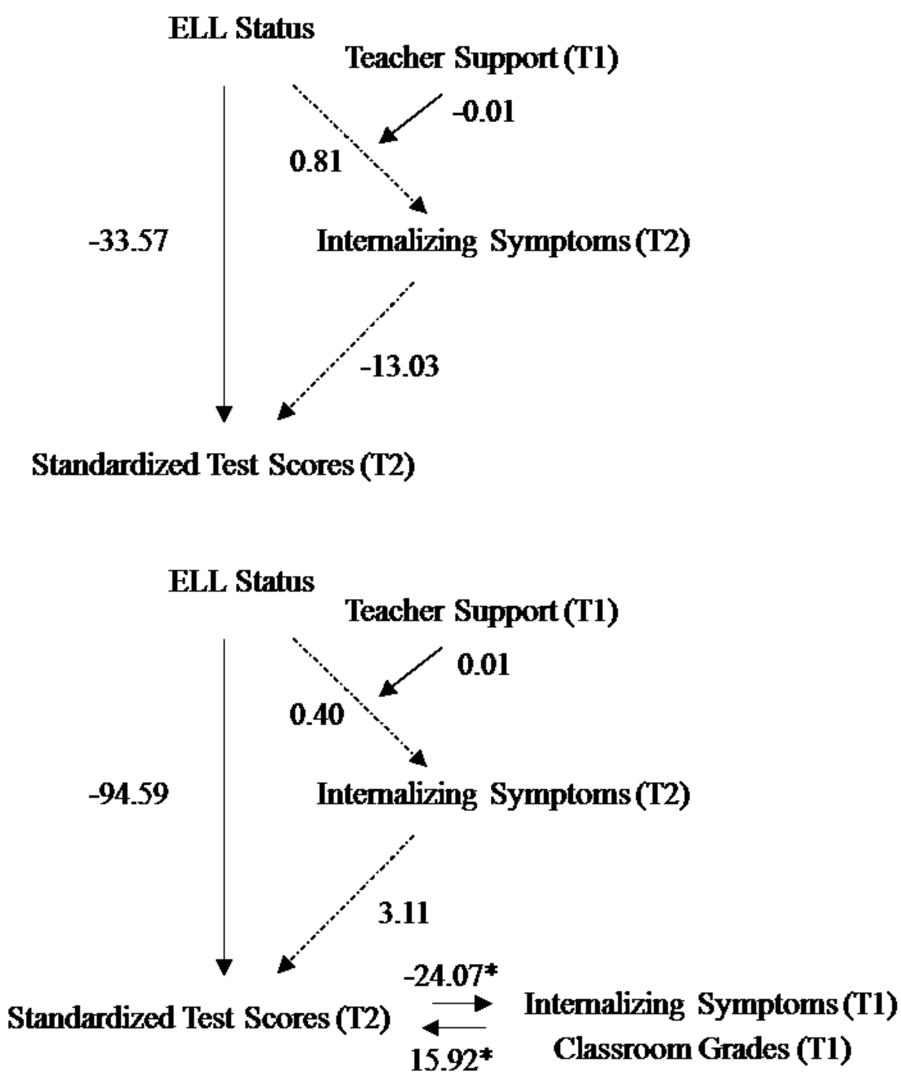


Figure 7. Moderated Mediation Models of Teacher Support on Standardized Test Scores (T2)
Note. This model depicts teacher support mediating the indirect relationship between ELL status and standardized test scores through internalizing symptoms over time. Unstandardized beta weights are reported.
*$p < .05$

CHAPTER 5

DISCUSSION

This study examined the role of teacher support in predicting internalizing symptoms and academic achievement (grades and state standardized test scores) in a sample of ELLs and non-ELLs. The relationships among ELL status, teacher support, internalizing symptoms, and academic performance were examined at two points in time. Baseline data were collected at time 1 (T1) and follow-up data were collected at time 2 (T2). It was hypothesized that (1a) ELL students would report higher levels of internalizing symptoms than non-ELL students at T1 (1b) and T2, (2a) ELL status would be related to lower academic performance at T1 (2b) and T2, (3a) there would be a negative relationship between perceived teacher support and students' internalizing symptoms at T1 (3b) and T2, (4a) there would be a positive relationship between perceived teacher support and students' academic performance at T1 (4b) and T2, (5a) the relationship between ELL status and internalizing symptoms would be partially mediated by perceived teacher support at T1 (5b) and T2, (6a) the relationship between ELL status and academic performance would be mediated by perceived teacher support at T1 (6b) and T2, (7a) the relationship between ELL status and internalizing symptoms would be moderated by perceived teacher support at T1, (8a) the relationship between ELL status and classroom grades would be moderated by perceived teacher support at T1, and (9a) teacher support would moderate the indirect relationship of ELL status and academic achievement through internalizing symptoms at T1 (9b) and T2.

Summary of Results and Explanations

Hypothesis 1 stated that ELL students would report higher levels of internalizing symptoms than non-ELL students at T1 and T2. This hypothesis was supported. ELLs reported higher levels of internalizing symptoms than non-ELLs. Hypothesis 2, ELL status would be related to lower academic performance at T1 and T2, was not supported. ELL status was not related to lower academic performance. ELLs, on average, obtained higher classroom grades in reading and math than non-ELL students. On a standardized measure of academic achievement however, ELLs' scores were not different from non-ELLs' scores.

Perhaps the most unexpected finding from this study is that ELLs achieve higher classroom grades in both math and reading when compared to non-ELLs regardless of their level of perceived teacher support. These differences, however, were not present when standardized test scores were compared. The reasons for these differences are unclear. Possible explanations, albeit speculative ones, are discussed hereinafter.

One possible explanation involves teacher support. As discussed in Chapter 2, teacher support may impact students' behavioral engagement (e.g. Fredricks et al., 2004) such as higher participation in learning and on-task behaviors. It is possible that ELLs perform better in the classroom than on standardized tests because teachers are appropriately accommodating ELLs in the classroom. Unlike standardized measures of achievement, teachers are permitted to thoroughly explain concepts using language that matches ELLs' English proficiency in the classroom. This type of teacher support may allow ELLs to demonstrate their skills in the classroom, but not on standardized tests.

An alternative explanation is that teachers may have lower expectations for ELLs and adjust their grading accordingly (i.e., apply easier standards when grading). Harper and Jong (2004) posit that misconceptions about how to work with ELLs may lead teachers to have lower academic expectations for ELLs or ask them easier questions as a way to mask communication gaps. Hatch (1992) coined the term "benevolent conspiracy" (p. 67) to describe teachers who protect students from failure by lowering academic expectations. While this strategy may not be driven by ill intentions, there are unintended consequences. For instance, when students are being asked questions that require lower order skills (i.e. rote memorization), they are not being challenged to use critical thinking skills (Rice, Pappamihiel, & Lake, 2004). A case study conducted by Layzer (2000) revealed that ELLs were often placed on lower tracks of study even though they were college-bound, because teachers believed that earning higher grades in a lower track was better for these students than earning lower grades in a higher track. Layzer concluded that such practices prevented ELLs from accessing quality instruction. Similar findings have been reported with other minority groups such as African Americans (Entwisle & Alexander, 1988). According to Entwisle & Alexander (1988), even when African American students obtain higher standardized test score than their white peers prior to entering the first grade, African American students' academic achievement was significantly lower than white students by the end of first grade. Nichols and Good (2004) found that ethnic minorities were generally given less opportunity to learn, which mediated the relationship between low expectations and academic achievement. The influence of low teacher expectations on academic achievement persists when minority students enter college (Allen, 1992).

The aim of this study was not to explore the difference in academic expectations between ELLs and non-ELLs. However, the finding that ELLs obtain higher classroom grades, but not higher standardized test scores, than non-ELLs may, potentially, highlight the subjective nature of academic achievement in the classroom. More importantly, this finding is highly inconsistent with previous research regarding ELLs' academic achievement.

Demographic variables may have also influenced the results from this study. More than half of the ELL sample self-identified as Asian. Asian Americans have often been referred to as the “model minority”, as they have on average obtained higher academic achievement than other minority groups (Kao & Thompson, 2003). This stereotype may influence how teachers perceive Asian ELLs; teachers may perceive them as higher achieving students and consequently assign them better classroom grades. An in-depth look at variables that may contribute to differences in academic attainment revealed that family background, such as cultural values, familial expectations, socioeconomic status, etc. may play an integral role in the success of Asian Americans (Hurh & Kim, 1989; Kao, 1995; Takaki, 1989). The current study did not account for family background and cultural differences within the ELL sample. It is possible that the higher classroom grades exhibited by ELLs in this study was driven by these high-achieving Asian ELLs or teachers’ perceptions of their abilities.

Hypothesis 3 stated that there would be a negative relationship between perceived teacher support and students’ internalizing symptoms at T1 and T2. A mediation model showed a negative relationship between teacher support and internalizing symptoms at T1, but not at T2. Hypothesis 3 was partially supported. Hypothesis 4, which stated that teacher support would be positively associated with academic achievement, was also partially supported. There was a positive relationship between teacher support and classroom grades at T1, but not at T2. Additionally, teacher support at T1 was not related to standardized test scores at T2.

The role of teacher support was further examined using mediation, moderation, and moderated mediation models. Hypothesis 5 stated that teacher support would mediate the relationship between ELL status and internalizing symptoms at T1 and T2. Teacher support only had a direct effect on internalizing symptoms at T1, but it did not have a mediating effect at T1 or T2. Hypothesis 6 stated that teacher support would mediate the relationship between ELL status and academic achievement. At T1, teacher support and ELL status had a direct effect on classroom grades, but teacher support did not have a mediating effect on classroom grades at T1 or T2. Teacher support also did not mediate the relationship between ELL status and standardized test scores. Hypotheses 5 and 6 were not supported by the data.

Hypothesis 7 stated that the relationship between ELL status and internalizing symptoms would be moderated by perceived teacher support at T1. The relationship between ELL status and internalizing symptoms was not moderated by teacher support, but increased teacher support predicted fewer internalizing symptoms. Hypothesis 8 stated that the relationship between ELL status and classroom grades would be moderated by perceived teacher support at T1. This hypothesis was supported. A high level of teacher support is related to higher classroom grades for non-ELLs, but not for ELLs. Regardless of the amount of teacher support, ELLs were obtaining higher classroom grades than non-ELLs.

Lastly, Hypothesis 9 stated that teacher support would moderate the indirect relationship of ELL status and academic achievement through internalizing symptoms at T1 and T2. Teacher support did not moderate the indirect relationship of ELL status and academic performance (classroom grades or standardized test scores) through internalizing symptoms at T1 or T2. Hypothesis 9 was not supported by the data.

The results showed that teacher support was consistently related to an increase in classroom grades and a decrease in internalizing symptoms. Teacher support, however, did not mediate the relationship between ELL status and classroom grades or the relationship between ELL status and internalizing symptoms. Teacher support also did not moderate the relationship between ELL status and internalizing symptoms, but it did moderate the relationship between ELL status and classroom grades. More specifically, there was a positive relationship between teacher support and classroom grades for non-ELLs. For ELLs, a change in teacher support was not related to a change in their classroom grades.

This finding is interesting and theoretically inconsistent with previous research, which has suggested that ELLs should benefit more from teacher support than non-ELLs due to their high socio-emotional needs. Instead, the results showed that non-ELLs benefit from high teacher support, whereas ELLs do not. As discussed earlier, the data collected in this study revealed that ELLs obtain better grades than non-ELL students. Perhaps the influence of teacher support is less salient when students are already achieving at a high level. Based on the descriptive statistics, there is less variance in ELLs classroom grades than non-ELLs' classroom grades. It is possible that in a sample of low-achieving ELLs the effects of teacher support may be more profound. Due to the demographic characteristics of the participants in this study, these findings may not generalize to other school districts, especially in districts with few ELLs and little racial or ethnic diversity in both their ELL and non-ELL populations.

The current study asked students to rate how much teacher support they perceived overall, but students were not asked to rate a specific teacher. It is important to remember that ELLs have opportunities to interact with more teachers than their non-ELL peers. As ELLs receive academic and language support, their experience with teachers may be inherently different from non-ELLs. That is, non-ELLs typically do not have opportunities to interact with other teachers in the building and their academic progress is not being monitored as closely as ELLs. Because ELLs have been identified as students with specific academic needs, certain teachers interact differently with them (i.e. attend to their needs). For this reason, it is possible ELLs were considering support staff, rather than their general education teachers when rating perceived teacher support. Non-ELLs do not have access to ELL support staff and may have only considered general education teachers when rating perceived teacher support.

Longitudinal effects were not detected in this study. While teacher support was directly related to classroom grades and internalizing symptoms at T1, teacher support at T1 was not related to classroom grades and internalizing symptoms at T2. Similarly, the interaction of ELL status and teacher support in predicting classroom grades did not persists at T2. The following explanations might account for the lack of longitudinal effects.

First, data in this study were collected in two waves over a four month period. It is entirely possible that the elapsed time between data collection periods was not long enough to detect any longitudinal effects. It is important to note that there has been little consensus on how much time should elapse before data is collected again or how many data collections periods there should be in a longitudinal study (de Lange, Taris, Kompier, Houtman, & Bongers, 2003).

Second, a considerable amount of longitudinal data was lost due to attrition. While some students may have had a change in placement, it is more likely that the attrition rate is related to logistical reasons, as some classrooms did not complete the follow-up survey. Because T2 data were collected at the end of the school year, some classroom teachers may not have had enough time to facilitate the data collection. As students were required to complete the survey online, teachers were responsible for taking their students to the computer lab. This additional step may have been difficult at the end of the school year, when teachers have much to accomplish.

Lastly, baseline data included as covariates in the statistical models may have masked the longitudinal effects. Teacher support might have immediate effects on internalizing symptoms. In turn, current internalizing symptoms might predict future internalizing symptoms. Thus, future studies should test internalizing symptoms at T1 as a mediator for internalizing symptoms at T2 instead of as a covariate. Similarly, teacher support might have immediate effects on classroom grades, which in turn predicts classroom grades at T2. Classroom grades at T1 should also be tested as a mediator for classroom grades at T2 instead of as a covariate.

Other Limitations

There were several limitations related to the current sample. First, there was a small number of participants who identified as Hispanic. The findings from this study may not generalize to schools with a larger percentage of Hispanic students. Second, the participants attended a suburban school district, where more abundant resources may be available in comparison to urban school districts. The financial standing of a school district may impact the generalizability of the results. Third, there was a small number of ELLs across time points. For this reason, this study could not account for nesting by classroom.

Baseline data were collected for internalizing symptoms and classroom grades, but there were no baseline data for other indicators of academic achievement. For instance, the current study only had access to standardized test scores for one time point and collected no data on ELLs' language proficiency. Given that adequate language proficiency is one of the main predictors of academic achievement for ELLs (Graham, 1987), language proficiency would have provided a better estimate of the ELLs academic abilities at baseline.

Although this study established that there are relationships among teacher support, internalizing symptoms, and classroom grades, these relationships may not have been sustained over time. Two data collection periods over 4 months may not have allowed enough time for longitudinal effect to be detected. Future studies should address these aforementioned limitations when examining group differences in the function of teacher support.

Conclusion and Directions for Future Research

Previous research indicated that internalizing symptoms and academic outcomes are primary concerns for ELLs. Among general education students (i.e., non-ELLs), research has shown that teacher support is related to a decrease in internalizing symptoms and an increase in academic achievement. However, few studies have examined the role of teacher support in a sample of ELLs and non-ELLs. Although there are many limitations to the current study, there are also a number of notable strengths. Unlike previous studies of ELLs, this study utilized a quantitative approach. Quantitative studies are more objective, utilize structured questionnaires, and typically include a larger sample size (Sale, Lohfeld, & Brazil, 2002). This study also recruited participants from a racially and ethnically diverse school population. It is easier to generalize findings from a study with a racially and ethnically diverse sample to other populations, as the study sample is more closely representative of the general population. Previous studies have relied on homogenous ELL samples and qualitative approaches (e.g. Lee et al., 2004; Romero & Roberts, 2003; Wei et al., 2007; Wei, Tsai, et al., 2012). Despite its limitations, this study offers some insight into the influence of teacher support on all students, including ELLs. Overall, the results of this study suggest that teacher support is related to an increase in classroom grades and a decrease in internalizing symptoms for both ELLs and non-ELLs. For Non-ELLs, in particular, high classroom grades were associated with a high level perceived teacher support. ELLs, on the other hand, obtained high classroom grades regardless of the level of perceived teacher support.

To build on findings from this study, future studies should consider the following directions. Future studies need to examine participants' family background. Variables of interest include socioeconomic status, cultural values, and familial support. As ELLs represent a racially and ethnically diverse group, it is important to examine differences between racial and ethnic groups within the ELL population. Researchers may also want to map out the source of students' perceived teacher support by specifying which teachers they should rate and acquire academic outcome data related to the subject taught by said teacher. This method may eliminate some confounds associated with differential access to teacher support, as ELLs logically have access to more teachers due to their need for academic and language related supports.

In addition to classroom grades, researchers should seek to examine standardized measures of achievement over multiple time points. As classroom grades are assigned by teachers, there is a certain degree of subjectivity involved. That is not to say that classroom grades do not provide meaningful information. Rather, the supplement of standardized measures of academic achievement may provide confirmatory evidence.

As discussed earlier, internalizing symptoms and classroom grades at T1 may impact internalizing symptoms and classroom grades at T2, respectively. Instead of including T1 data as covariates in the longitudinal models, future studies should examine T1 data as mediators of internalizing symptoms and classroom grades at T2.

Although longitudinal relationships were not detected in this study, the current findings provide cautionary advice on teachers' interactions with students. Teacher support is related to important student outcomes. More teacher support is related to higher classroom grades and less internalizing symptoms. Conversely less teacher support is related to lower academic achievement and more internalizing symptoms. Regardless of a students' ELL status, the perception of how supportive their teachers are is likely to influence important life outcomes.

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