How the Bronfenbrenner Bio-ecological System Theory Explains the Development of Students' Sense of Belonging to School?

Wafaa El Zaatari[1] (iD) **and Imad Maalouf[2]**

Abstract

The central concept of this review underscores the fact that the development of a feeling of belonging at school occurs because of different interactions between developing students and the school's ecological environment over time. This review argues that Bronfenbrenner's Bio-ecological Systems Theory can best explain the development of school belonging by highlighting the role of PPCT (Process, Person, Context, and Time). The *process* includes the interactions (proximal and distal) that occur between students and their school's ecological systems. The *person* considers the active role of students in influencing their development. The *context* encompasses the school's ecological systems. The *time* includes events and the chronological age of students. The review highlights the most important proximal practices and interactions that occur in school microsystems and play a significant role in enhancing students' sense of belonging. Empirical, longitudinal research that focuses on the interactions of all the components of the PPCT model is recommended.

Keywords

school belonging, school climate, Bio-ecological Systems Theory, PPCT, proximal interactions, distal interactions

Introduction

Sense of belonging to school has several advantages on students' psychosocial development (Longaretti, 2020) and academic motivation (Korpershoek et al., 2020). Several studies consistently underline the key role that various school climate factors play in enhancing students' sense of belonging (Bakır-Ayğar & Kaya, 2017; Günalan, 2018; Huang et al., 2013; Kalkan & Dağlı, 2021; Korpershoek et al., 2020). For example, Bakır-Ayğar and Kaya (2017) indicate that the school climate factors that play a significant role in enhancing school belonging include supportive teacher behaviors, achievement orientation, a safe learning environment, and positive peer interaction. Guided by the explanation that for any individual development to occur, there should be an interaction between personal characteristics and the environment over time (Bronfenbrenner, 1989), the paper suggests that Bronfenbrenner's Bio-ecological Systems Theory can provide a comprehensive understanding of the development of school belonging. This review aims to discuss how Bronfenbrenner's Bio-ecological Systems Theory, by referring to the PPCT model: Process, Person, Context, and Time, can best explain the development of school belonging. It also aims to highlight the influence of the different school climate factors, which include an effective learning environment, teacher-student relationships, safety at school, extracurricular activities, peer interactions, and parental involvement, on students' sense of school belonging.

This review can be significant for teachers, administrators, and policymakers as it reveals how different and interrelated factors can either enhance or deter students' sense of belonging. By referring to Bronfenbrenner's Bio-ecological Theory, the review provides evidence from the literature on the influencing factors that will help

[1]Al Ain University, United Arab Emirates
[2]Fatima College of Health Sciences, Al Ain, United Arab Emirates

Corresponding Author:
Wafaa El Zaatari, College of Education, Al Ain University, Al-Ain, UAE.
Email: wafaaz71@gmail.com

policymakers establish guidelines on policy and practice. Additionally, it identifies the factors to be promoted to develop students' sense of belonging to a school belonging. As such, the theory with all its interacting factors can provide guidance on the factors schools should focus on to best support students' development of school belonging.

It is interesting to note that the researchers who studied belonging have suggested different ways to fit the development of school belonging into Bronfenbrenner's ecological framework. For instance, Allen et al. (2016) have applied the socio-ecological framework of Bronfenbrenner's theory and considered several features of the broader school system and environment to explore the themes that could influence school belonging. However, this review is broader in scope as it sheds light on some other different factors and looks at the ecological system from a distinct perspective which will be elucidated in subsequent sections of the review. Thus, the Bioecological model provides a good starting point for delving into the different factors that can contribute to the development of a sense of belonging. On the other side, this review adds value to the Bioecological model as it shows its applicability, ability, and strength to comprehensively explain the development of belonging which provides priceless benefits to child development.

Definitions and the Importance of School Belonging

A sense of school belonging is defined as the "extent to which students feel personally accepted, respected, included, and supported by others in the school social environment" (Goodenow, 1993b, p. 80). Allen et al. (2021) defined a sense of belonging as "the subjective feeling of deep connection with social groups, physical places, and individual and collective experiences [and it] is a fundamental human need that predicts numerous mental, physical, social, economic, and behavioral outcomes" (p. 87). In the same vein, Longaretti (2020) thought of "belonging at school in terms of relational, behavioral and emotional aspects, namely belonging as being and doing, felt or lived, relating and acceptance." (p. 41).

A sense of belonging depends on how accepted and valued the students feel (Aliyev & Tunc, 2015). Once students feel that they are supported when they are struggling and congratulated for their accomplishments, their well-being and sense of belonging to school will also improve (Dehuff, 2013). A feeling of belonging strongly predicted youth life satisfaction and well-being (Arslan et al., 2020) and positively correlated with positive affect and self-esteem (Ammar, 2022). It is also associated with various positive psychological and behavioral changes (Longaretti, 2020). These include abiding by school rules, adapting to the school's community (Dehuff, 2013), and experiencing less violence and other deviant behaviors (Aliyev & Tunc, 2015), as well as increasing the desire to attend college (Steiner, 2011). The reason behind the increasing desire to attend college could be attributed to the long and short-term impact of the school belonging on students' psychological and academic outcomes (Allen et al., 2021). School belonging is also strongly associated with many positive outcomes that are related to students' well-being (Porter et al., 2021) which, during childhood, predicts positive adulthood well-being as indicated by Richards and Huppert (2011) in their longitudinal birth cohort study.

Findings from several studies showed that a sense of belonging could indirectly enhance student achievement. Allen et al. (2018) and Goodenow (1993b) explained that feelings of belonging can increase the students' academic motivation to work harder. This means that they will be happier, experience greater satisfaction (Fong Lam et al., 2015) and school engagement (Korpershoek et al., 2020) together with keeping up on less truancy (Korpershoek et al., 2020; Şahin et al., 2016), drop-out rates (Korpershoek et al., 2020; Koyuncu, 2021), and violence involvement (Henry et al., 2021). As such, motivated students would academically achieve more than those who are not as motivated, committed, or successful (Fong Lam et al., 2015; Longaretti, 2020). In the same manner, Martin and Dowson (2009) indicated that feeling connected to the academic domain, "teaches students the beliefs, orientations, and values needed to function effectively in academic environments. In turn, these beliefs, if positive and adaptive, direct behavior in the form of enhanced persistence, goal striving, and self-regulation" (p. 329). Moreover, Korpershoek et al. (2020), in their meta-analytic review, spotted an interesting small positive correlation between school belonging and school grades and an even smaller correlation between school belonging and standardized test scores. A plausible explanation could be that school grades do not only represent achievement, but also more subjective assessments of student functioning. School grades may, to some extent, be based on the teachers' perception of students' motivation and/or behavior and their assessment of students' actual performance.

Even though a considerable body of research reveals that a higher sense of school belonging leads to better school grades, which was recognized in no less than 67 tests reported in primary studies (Korpershoek et al., 2020), the role of academic proficiency and the other factors should not be overlooked. According to Martin and Dowson (2009), relatedness, with all its advantages, is essential but not a sufficient condition in itself for explaining variations in educational outcomes. Academic

proficiency has an impact on motivation, engagement, and achievement as it "encompasses general skills such as critical thinking, self-regulation, and metacognition, as well as more specific skills, such as decoding texts, comprehension, and mathematical reasoning" (Martin & Dowson, 2009, p. 332). Furthermore, better performance can be attributed to the students' current stage of development. For example, Grade 12 adolescent students are more concerned about their future and put more effort into finishing school successfully (Martin & Dowson, 2009).

The Development of Bronfenbrenner's Theory

Unlike other psychological theories which study individuals in laboratories or in isolation from their surroundings with little attention given to the influence of context, Bronfenbrenner's theory studies the development of individuals in their natural milieu. Bronfenbrenner's work was central to a shift in interest in the ecological approach (Hayes et al., 2017, pp. 1–6). Hayes et al. (2017), and Tudge and Rosa (2013) identified three specific phases in the development of Bronfenbrenner's Theory.

Phase one (1973–1979) drew on the original Ecological Systems Theory of Human Development. In this phase, Bronfenbrenner (1979) showed that a developing individual is contained within four systems. These systems are the microsystem, mesosystem, exosystem, and macrosystem (see Figure 1). While the relations between different settings can indirectly influence developing individuals, the interactions at the microsystem level can directly will influence them directly. As such, the ecology of human development encompasses the scientific study of the progressive and mutual relationships between an active, growing human being, and the changing properties of the immediate settings in which the developing person resides (Bronfenbrenner, 1979).

During the second phase (1980–1993), Bronfenbrenner paid more attention to the role of developing individuals in influencing their development and focused more on the biological influences. The theory was named the Bioecological Systems Theory of Human Development. Unlike the previous model, this one focuses on the active role of developing individuals.

During the third phase (1993–2006), several changes took place and more emphasis was put on the proximal process which was considered an essential element of the Bioecological Systems Theory. Moreover, Bronfenbrenner emphasized the use of the PPCT model in research to show how interactions between process, person, context, and time could explain the development of individuals (Hayes et al., 2017; Tudge & Rosa, 2013).
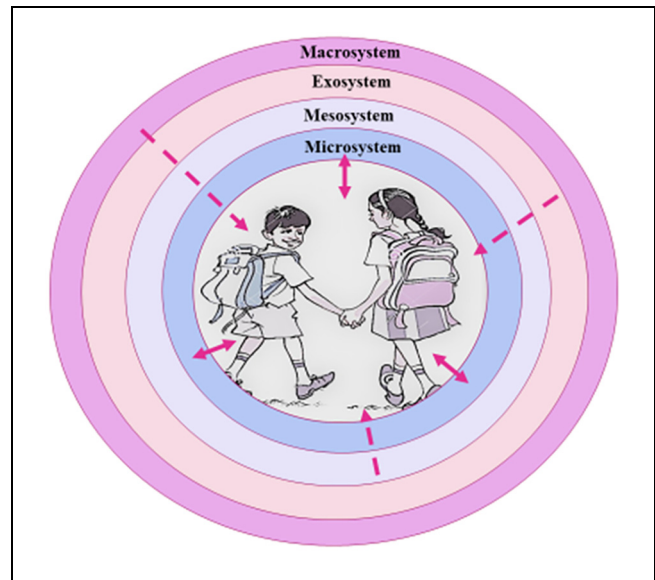

Figure 1. Ecological model of human development.

Bronfenbrenner's Bioecological Systems Theory

After reviewing the three phases of Bronfenbrenner's theory, we have found that Bronfenbrenner's Bioecological Systems Theory could comprehensively explain the development of students' sense of belonging at school. The theory focuses on the interactions between *Process, Person, Context, and Time* (PPCT) in influencing the development of individuals (Hayes et al., 2017).

Krishnan (2010) explains that the first component, the *process*, includes all the interactions (from the proximal to the distal) that occur between developing individuals and their surroundings. As shown in Figure 2, the dotted arrows from the macrosystem, exosystem, and mesosystem, toward the students represent the distal interactions. These interactions have an indirect influence on individual development. Moreover, the two-headed arrows refer to the proximal interactions which have a direct influence on developing individuals (Krishnan, 2010). This can be achieved by reciprocal and continuous interactions with the immediate environment, and between an individual and the various subsystems (school, home, neighborhood, etc.) within the microsystem, over an extended period of time (Bronfenbrenner, 1993).

Bronfenbrenner (1979) emphasizes the importance of a positive relationship in overcoming the potential damage that is caused by a gloomy and ineffective environment. He claims that even a very constructive environment may not be sufficient to foster emotionally positive development without a warm and caring relationship. A relationship is a process constructed by two parties and can be altered by either one if one changes
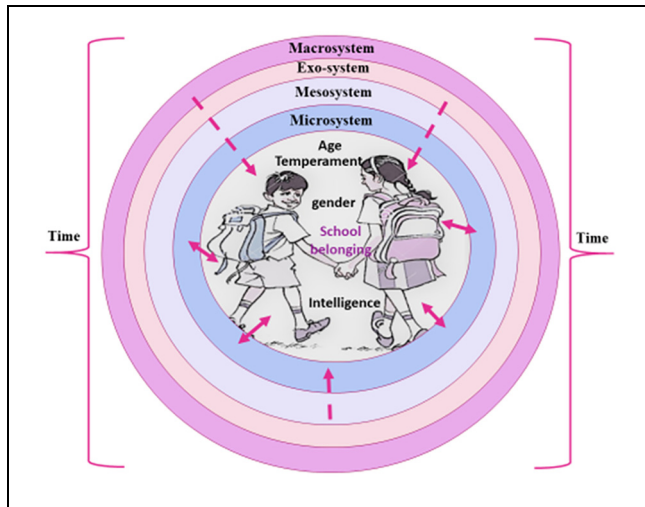
Figure 2. The bio-ecological model of human development.

his/her behavior (Shelton, 2019). Once a relationship has been established between the developing individual and another (e.g., teacher or peer), a dyad is apparent. This dyad is a crucial factor in individual development. The dyadic relationship is a fundamental element in the microsystem as it helps individuals to develop broader interpersonal relationships, known as triads and tetrads (Shelton, 2019) that is, relationships with more than one person.

The *person*, the second component of the PPCT, considers the active role of developing individuals in influencing their development and focuses more on biological influences. The proximal process varies based on the specific variations in individual personal characteristics and depending on the individual's diverse interactions with the environment (Hayes et al., 2017). This theory considers the developing individuals to be active agents in that their development is influenced by their surrounding environment and, at the same time, they influence the context in which they are living (Hayes et al., 2017).

Hayes et al. (2017) have identified three distinct characteristics of any developing individual. These are the *active behavioral disposition, resource characteristics, and demand characteristics*. These "characteristics both shape and are shaped by experiences in context" (p. 33). The *active behavioral disposition* can be positive when the characteristics of developing individuals trigger interactions with and responses from the immediate environment. Examples of these characteristics include "curiosity, tendency to initiate and engage in activity alone or with others, responsiveness to initiatives by others, and readiness to defer immediate gratification to pursue long-term goals" (Bronfenbrenner & Morris, 2006, p. 810). The disposition can also be negative when

individuals' characteristics disrupt responses or block interactions due to having aggressive nature.

The second set of the characteristics is the *resource characteristics* which include the bio-psychological properties and material resources. An example of material resources is the availability of education that can assist or deter interactions with the environment. Regarding the bio-psychological properties that enhance a person's ability to engage effectively in proximal processes include knowledge, skills, intelligence, and many other properties. For example, sociable children who have good communication skills can easily stimulate others to interact with them and the opposite is true. However, the properties that limit or disrupt proximal processes include "genetic defects, low birth weight, physical handicaps, severe and persistent illness, or damage to brain function" (Bronfenbrenner & Morris, 2006, p. 812).

The third set of characteristics is the *demand characteristics* that act as an intermediate trigger that influences various reactions from the social environment, whether in a positive or negative manner (Hayes et al., 2017). These include both active and passive activities, temperament (ranging from calmer to more aggressive), age, gender, skin color, and other factors. In terms of gender, Krishnan (2010) indicates that the sex of a child must be considered when studying childhood development as it can moderate the quality of an adult-child relationship in a way that makes behavior that is acceptable for a boy not acceptable for a girl. This is attributed to the fact that boys and girls experience different developmental processes in terms of their socialization, personality, coping skills, and cognitive abilities. In addition, children's age influences how they "experience[s] the world and so influence the way in which the world responds, which affects the development of further disposition and so on" (Hayes et al., 2017, p. 104). In this regard, it is important that the learning environments include certain characteristics that are relevant to a child's age. For example, the setting of toddlers' classroom have to be different from that of preschoolers. In terms of skin color, it can also act as a triggering factor that stimulates various reactions from the social environment. For instance, teachers may have false assumptions that black students are less intelligent than their white counterparts and this inaccurately influences the way teachers deal with their students (Hayes et al., 2017).

The third component of the PPCT is the *context* which covers all the ecological systems and it is the most critical component in understanding individual development (Krishnan, 2010). As shown in Figure 2, a developing individual is located at the center and surrounded by the four ecological systems - microsystem, mesosystem, exosystem, and macrosystem. The microsystem is defined as,

"a pattern of activities, roles, and interpersonal relations experienced by the developing person in each setting with particular physical and material characteristics" (Bronfenbrenner, 1979, p. 22). Next is the mesosystem which includes connections between two microsystems where developing individuals play active roles. The third is the exosystem which includes connections between different social settings such as familial social networks and the parental workplace. Any event that occurs within this system has an indirect impact on the developing individual (Bronfenbrenner, 1979). The fourth is the macrosystem which includes the culture, subculture, and national direction that influences the other three systems, in particular, the lifestyle, course options, practices, and customs that are part of any system. The macrosystem can even indirectly affect the social and psychological features of the microsystems (Bronfenbrenner, 1993).

Time is the final component of the PPCT Model. Shelton (2019) explained, by referring to Bronfenbrenner's theory, that, "time can affect persons, relationships, settings, exosystem, the macrosystem, and all the other aspects of both the person and the ecosystem" (p. 103). Time incorporates both chronological time and events. An example of chronological time is the adolescent stage of development that extends from 12 to 18 years of age (Krishnan, 2010). Examples of events are the changes that occur in the environment, family life, socio-economic structures, and other factors (Bronfenbrenner, 1993). Another example of events is the ecological transition which occurs throughout an individual's life (Bronfenbrenner, 1979). Entering pre-school or high school, graduating, getting married, having children and retiring are all examples of such transitions (Bronfenbrenner, 1993). Events last for differing durations (Krishnan, 2010), and might have significant long-term, positive or negative, consequences for an individual's future experiences, self-efficacy, and motivation (Hayes et al., 2017, p. 26).

The Bio-ecological System Theory and School Belonging

Allen and Bowles (2012) specified that Bronfenbrenner's theory "provides the most comprehensive theoretical construct to date with which to investigate belonging in an organizational setting such as a school" (p. 110). In school ecological system, an array of interactions, whether direct (proximal) or indirect (distal), will be taking place (Krishnan, 2010). The development of a student's sense of school belonging is explained in relation to these two types of interactions.

Students exist in a system of interconnected relationships, roles, activities, and settings (Shelton, 2019). The proximal interactions, which include face-to-face interactions between students and students and between students and teachers, can play a significant role in enhancing students' sense of belonging to their school (Dehuff, 2013; Goodenow, 1993a). Moreover, the proximal interactions between parents and students that occur within the home microsystem can also increase motivation and the students' sense of belonging to their school (Uslu & Gizir, 2017). Hayes et al. (2017) underscored the importance of the proximal processes by indicating that they

> are located within the microsystems of development and operate over time; they are posited as the primary mechanisms producing human development. The power of these processes to influence development varies based on the characteristics of the person (P), immediate and remote environmental contexts (C), and the time periods (T) in which they take place (P.9)

Smith (2015) as well gave more emphasis on the importance of the process in individual development. Smith indicated that development, "is a process that occurs across contexts, and although obstacles may arise, with the right environment and support, young people can overcome these obstacles" (p. 69). Thus, the researchers highlighted the most important interactions and practices that occur at the school microsystem level and classified them as different school climate factors. The next section highlights the importance of school climate and identifies and discusses the school climate factors that can influence students' sense of school belonging.

Hayes et al. (2017) stressed the importance of considering individual differences when talking about school belonging. Here, belonging is rather seen "as arising from the person within a particular school environment" (Goodenow, 1993b, p. 87). For instance, Allen et al. (2018) showed that positive personal characteristics such as conscientiousness, optimism, and self-esteem, are strongly associated with school belonging. Temperament as well is one such personal characteristic that contributes to shaping the responses from the environment. For instance, the way teachers respond to a known troublemaker differs from the way they respond to a well-mannered student. Teachers might respond to a troublemaker by shouting and punishing them in a way that they will feel threatened and insecure on the school premises as students' safety is an essential factor for the development of a sense of belonging at school (Allen & Bowles, 2012; Haugen et al., 2019). Furthermore, Abdollahi et al. (2020) showed that, during stress, some students are not able to use proper coping mechanisms to control their thoughts and feelings. They will end up facing more stress and problems and their sense of belonging will decline as "[emotional stability demonstrated a sizable impact on school belonging" (Allen et al., 2018, p. 24). Regarding resource characteristics, the availability of

material resources can play a role in the development of a sense of school belonging (Hayes et al., 2017). Allen et al. (2021) explain that students from more affluent families tend to have a stronger sense of school belonging as they are able to afford the necessary resources that enables them to adapt to the school environment.

Students' gender and age are important personal characteristics that should be considered when studying their development (Krishnan, 2010). Goodenow (1993a) revealed that teachers' support had a greater impact on female adolescent motivation and participation than it did on boys' behavior. This is due to the fact that girls felt more loved and appreciated by their teachers than boys did. They had more positive experiences at school and a stronger sense of belonging to the school (Aliyev & Tunc, 2015; Goodenow, 1993a). Moreover, Neel and Fuligni (2013) clarified that the school belonging of Grade 9 girls was higher than that of the boys. Over the course of high school, only girls' school belonging declined. This could be attributed to the different ways early adolescents and later adolescents reacted to socialization due to a variety of factors, including developmental changes (Krishnan, 2010). However, El Zaatari and Ibrahim (2021) as well showed that there is no statistically significant difference in the sense of belonging between boys and girls in Grade 11. Sánchez et al. (2005) also saw no significant differences in the sense of belonging between boys and girls in Grade 12, a result that contradicts findings based on middle-school students' performance. These researchers explained that the adolescents' sense of belonging weakens in late adolescence. In other words, 12th graders became less worried about being included in the school environment, as they are looking forward to going to university. In fact, there is inconsistency in the literature regarding the influence of gender and age on the development of a sense of belonging and this is consistent with the meta-analysis that has been conducted by Allen et al. (2018).

The distal interactions can be understood in light of the indirect impacts on an individual's development. What happens in the macrosystem—in terms of a country's culture, societal norms, and national direction—has a major impact on other related systems (Krishnan, 2010). For example, when an education system aims to achieve internationally competitive educational outcomes by ranking among the top countries in international exams, the national and local education policies within the school exosystem will apply an exam-oriented approach that could affect the school microsystem's practices, curriculum, teaching strategies, and the student evaluation system. Such changes appear to influence the overall school climate and would indirectly impact the development of school belonging (El Zaatari & Ibrahim, 2021).

The social norms at the macrosystem level can also influence the students' feeling of belonging. In a male-dominated society, teachers usually treat their male adolescent students more like adults and give them the chance to participate in decisions concerning the teaching-learning process. Feeling excluded, the female adolescents would create resistance to following teachers' and school orders and might develop feelings of helplessness, fatigue, indifference, and other negative emotions that contribute to alienation and disconnection from school staff and peers (Fong Lam et al., 2015).

To explain the influence of culture on the sense of belonging, Chiu et al. (2016), Cortina et al. (2017) showed that students who are living in more hierarchical cultures, but not in egalitarian cultures, perceive greater status differences with their teachers. Their interactions might decrease and this would result in a weaker teacher-student relationship and a decrease in students' sense of belonging to school (Ibrahim & El Zaatari, 2020). Similarly, certain ideologies can indirectly influence students' development of school belonging. Huyge et al. (2015) revealed that male adolescents, in trying to pursue the idea of masculinity, reject the egalitarian gender role ideology or what they perceive as the feminine institute of school. Accordingly, some boys showed less belonging at school than girls. In a similar manner, Aragón et al. (2017) discussed the influence of multicultural ideology on the school microsystem and showed that the ideology is associated with adopting inclusive teaching practices and this can enhance the development of students' sense of belonging (Goodenow, 1993b).

Time, the fourth component of the PPCT Model, includes both events and chronological time. An example of an event is educational change. When a change requires several modifications to the curriculum, teaching, and assessment, teachers might become more pressured and disrupted. Such pressure can divert teachers from properly handling the teaching and learning process, and from effectively making connections with their students (Ibrahim & Al-Taneiji, 2019). Teachers may become less sensitive to student developmental needs and fail to provide students with proper care and attention. Then, students might become disappointed and lack the feeling of belonging to their school (Ibrahim & El Zaatari, 2020), undermining the teacher-student relationship which is the most influential variable in developing a sense of school belonging (Allen et al., 2018, 2021; Uslu & Gizir, 2017). Another example of events is students' personal life events such as the divorce of parents,

the death of a family member, an unemployed parent, and other personal problems that influence students' psychosocial and academic functioning.

Time also refers to the chronological time in that students pass through different stages of development. Each stage has its own unique characteristics (Salmela-Aro, 2011). An example of chronological time is the adolescent stage of development that extends from age 11 to 19, from childhood to adulthood (Salmela-Aro, 2011). As students reach adolescence, they start seeking autonomy and independence as they form their own identities and prepare for changes in the social, physiological, and cognitive aspects of their development that are related to nascent adulthood (Salmela-Aro, 2011). Giving adolescent students the chance to share power and take decisions increases the feelings of school belonging and this will give "[them] the right to have their voices heard and to make their own decisions to prepare them for the future" (Ibrahim & El Zaatari, 2020, p. 392).

Thus, as evident in Figure 3, the development of a student's sense of belonging is the result of interactions between the developing students, who are situated at the center of the school ecological system, personal characteristics (age, gender, temperament, etc.), time, and the four ecological systems. The students are surrounded by the school microsystem with its school climate factors and where direct and reciprocal interactions are thought to have an enormous influence on a student's development. These school climate factors include an effective learning environment, teacher-student relationship, safety at school, extracurricular activities, peer interactions, and parental involvement. The indirect interactions between the developing students and the three other ecological systems—the mesosystem, exosystem, and macrosystem, constitute the distal interactions.

The Importance of School Climate

The school climate represents a key social context that can enhance or retard a student's sense of belonging. It includes all the aspects that can make students love their school and, at the same time, develop them academically, socially, and psychologically (Freiberg & Stein, 1999). The school climate can be defined as, "shared beliefs, values, and attitudes that shaped interactions between students, teachers, and administrators and set the parameters of acceptable behavior and norms for the school" (Koth et al., 2008, p. 96).

For a more fulfilling school experience, a positive school climate has to be established. A positive school climate can play a significant role in satisfying the students' psychosocial developmental needs (Booth & Gerard, 2014). It can also reduce bullying, dropout rates (Weissbourd et al., 2013) and violence (Feigenberg,

2007). Indeed, feeling secure helps students to freely express their opinions, interact with peers and teachers (Rich & Schachter, 2012), and maximize their self-esteem, academic self-efficacy, and sense of school belonging (Cemalcilar, 2010). On the other hand, a negative school climate can engender the feelings of being protected, cared for, and socially supported (Cemalcilar, 2010).

Identification of School Climate Factors

After reviewing the literature, we believe that an effective learning environment, teacher-student relationships, safety at school, extracurricular activities, peer interactions, and parental involvement are the most important school climate factors that influence students' development of school belonging. This review follows the research of El Zaatari and Ibrahim (2021) in identifying parental involvement as parent-school relationships that are built in the mesosystem and parent-student relationships that exist in the home microsystem. Even though the two types of parental involvement are present outside the school microsystem, the researchers still considered parental involvement as one school climate factor, in accordance with Faour (2012) and Smith (2015), who believe that parental involvement is a constituent of the school climate.

Effective Learning Environment

An effective learning environment is one of the contributing factors to school climate. Teachers play a significant role in creating an effective learning environment through their commitment to introducing various learning practices such as scaffolding, cooperative work, group work, connective instruction, culturally responsive pedagogy, experimentation, problem-solving, and creativity, as well as controlling for misbehavior and bullying. However, when the education system places a heavy emphasis on exams, this can negatively affect classroom practices and the teacher-student relationship.

One learning practice that can enhance the learning environment is scaffolding. In the classroom, teachers are required to model a task and provide students with clear instructions so that they feel capable and more self-confident (Oyseman et al., 2012). Furthermore, teachers need to support students "metacognitive processes of reflection and prediction to feel a sense of agency over their learning" (Booker, 2021, p. 79). Teachers should never ridicule any student, nor suggest that a task is too easy. It may be easy for the teacher, but not for the student (Miller & Desberg, 2009). The provision of academic support can enhance the students' sense of school belonging (Goodenow, 1993b) and improve the students'
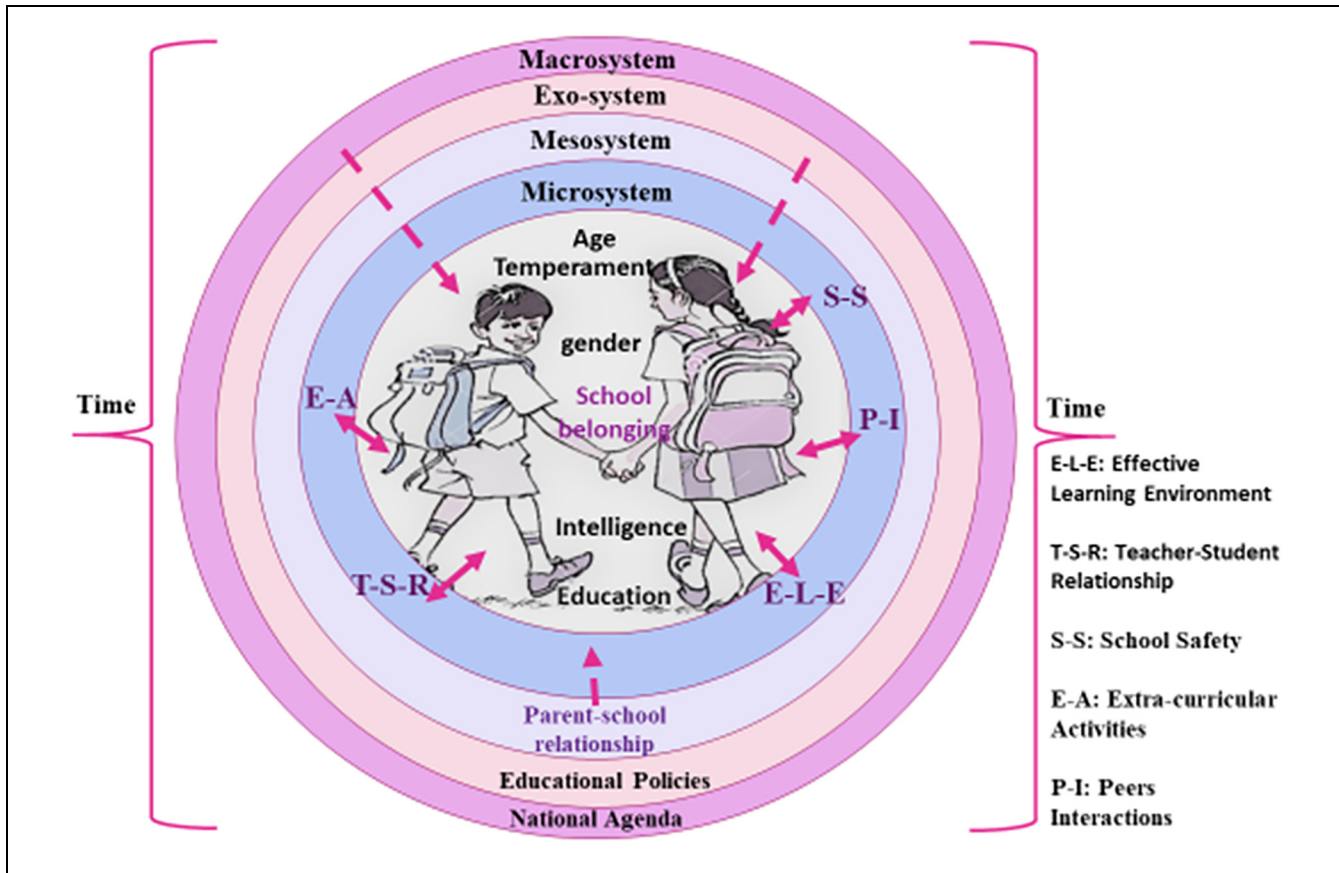
Figure 3. The bio-ecological system model and a sense of belonging at school (Allen et al., 2016).

beliefs about their potential (Darling-Hammond et al., 2020).

Collaborative learning and group work are essential classroom learning practices that teachers should consider. Students who work collaboratively and enjoy teamwork with their peers to achieve a common goal tend to have a stronger sense of school belonging (Keyes, 2019). Cohen and Viola (2022) clarified that group work does not only used to enhance the students' social skills and satisfy their need to belong but also to give them a chance to define their sense of themselves and support each other (Booker, 2021). Working in groups also helps students to develop accountability and gain the skills required to work in teams, something they will need in their future careers (Miller & Desberg, 2009).

Another practice that teachers should consider is the use of connective instruction. Cooper (2014) defined connective instruction as "a category of teaching practices in which teachers help students make personal connections to a class" (p. 367). This means that teachers encourage their students to connect their real-world attitudes, beliefs, and practices to their classroom instruction. Connective instruction "honors who the students are—acknowledging that they are particular people with

particular interests, points of views, personalities, and experiences" (Cooper, 2014, p. 367). As such, it is important for teachers to design the learning environment to accommodate different abilities and interests and reflect the diversity of the students' lives and culture (Hayes et al., 2017). This practice will diminish the gap between the students' lived and school experiences, and can help students to engage in the learning process as feeling engaged and accepted will contribute to enhancing a student's sense of belonging to their school (Fong Lam et al., 2015).

To provide a better sense of an effective learning environment, teachers have to use a culturally responsive pedagogy (CRP) with students who belong to different learning abilities, cultures, and social groups (Hayes et al., 2017). This means that teaching and learning are culturally situated and teachers have to make connections to students' cultures, languages, and everyday experiences in order for students to experience academic achievement while preserving their cultural and linguistic identities (Aceves & Orosco, 2014). This would require teachers to know about the different cultures in their classrooms in order to plan diverse instructional activities that are tailored to recognize the students' diversity

in the class. Teachers have to encourage the engagement of all diverse students in multicultural classrooms to enhance their critical thinking skills and social awareness (Berlian & Huda, 2022). Hayes et al. (2017) recommended creating a rich diversified learning environment that presents ample opportunities that allow them "to compare, explore and become familiar with diverse beliefs, lifestyles, and cultural context" (p. 104). Teachers can use classroom activities that are related to "social injustices," "stereotyping," and "implicit bias" and give adolescent students opportunities to discuss these topics with their peers so that they become aware of other students' lived experiences (Robinson, 2020). As such, implementing the principles of CRP can solve the problems faced by multicultural classrooms (Berlian & Huda, 2022), create a sense of belonging between diverse students (Robinson, 2020), and help students to better understand the content and improve their behavioral, emotional, and cognitive engagement (Harris, 2021).

In addition to tailoring instruction according to the students' needs and interests, Faour (2012) has emphasized the importance of encouraging critical thinking, problem-solving skills, and creativity as part of the teaching-learning process. Further useful practice is to encourage experimentation. The American Psychological Association (2002) stressed the importance of encouraging students to experiment since experimentation denotes that students feel secure and willing to discover things for themselves. It is one way for students to develop their sense of identity.

One more effective learning practice is that teachers have to respect the students' need for autonomy (Booker, 2021) and give them the freedom to choose a task that is of value and interest to them in order to make their learning experiences more meaningful and create higher levels of intrinsic motivation and self-esteem (Martin & Dowson, 2009; Miller & Desberg, 2009; Wallace et al., 2012). Otherwise, students will be demotivated and unwilling to participate in classroom activities (Deci, 1980; Wallace et al., 2012). Feeling excluded can deter the students sense of belonging to their classroom (Goodenow, 1993a).

Another essential practice is the teachers' ability to control misbehavior and bullying (Porter et al., 2021). Gleason (2011) indicated that teachers should limit bullying and provide support and care to students who fall victim to bullying (Hamm et al., 2011). Additionally, Hamm et al. (2011) stressed that teachers needed to be skilled in setting the social dynamics of their classroom by controlling behavior and not allowing the pace of learning to be disrupted. Moreover, teachers should be capable of managing any conflicts that arise between, and within, classroom groups by trying to engage the students in various learning activities. Managing conflict

and poor behavior can help to alleviate feelings of insecurity and provide an impetus for establishing a sense of belonging.

Teachers should refrain from punishment (Miller & Desberg, 2009). Punishing students may produce immediate results. However, in the long term, the students will resist and hate their teachers and school. Furthermore, Kupchik and Farina (2016) note that when punishments are perceived as unfair, bullying and victimization actually increase. Miller and Desberg (2009) recommend replacing punishment with discipline. They suggest that teachers set a few simple classroom rules which they have to apply fairly and consistently, without exceptions or favoritism. Teachers should also explain the reasons behind these rules and the consequences of not following them.

Finally, the frequent use of examinations for evaluating students, teachers, and schools may have some benefits, but it has many more disadvantages and cannot be considered a practice that enhances the learning climate. Ritt (2016) clarified that testing holds teachers accountable for their teaching and can be used as an indicator to help teachers decide where students stand academically. Moreover, Brockmeier et al. (2014) argued that teachers often agreed with some of the benefits of testing as they find they are often teaching a curriculum that requires such testing as mandated by the state. They also agreed that students' scores could be used to improve the curriculum. However, in both studies, the participants believed that high-stakes testing did not improve the teaching and learning process. El Zaatari and Ibrahim (2021) indicated that frequent exams and school curricula were the main reasons behind students' reluctance to go to school and lack the feeling of belonging to a school. Cohen and Viola (2022) clarified that "pedagogy and the curriculum have their main influence not directly, but rather by contributing to a broader 'academic sphere', within which students do or do not develop a sense of belonging" (p. 6).

Teacher-student Relationship

The teacher-student relationship is the most influential variable in student' sense of belonging to their school (Allen et al., 2018, 2021; Uslu & Gizir, 2017). When teachers demonstrate a caring attitude and help students in solving their problems, students' feelings of social and emotional security develop, and they are more likely to develop a greater sense of belonging (Allen et al., 2018; Farrelly, 2013). Booker (2021) described teachers as the "gatekeepers of belongingness" whenever their relationship with students is characterized by "care," "warmth," and "feelings of trust'. Moreover feeling accepted, valued, as well as academically and emotionally supported

could help in promoting students' sense of belonging (Ibrahim & El Zaatari, 2020; Longaretti, 2020).

Teachers need to support academically weaker students, as well as encourage and guide the high academic achievers (Farrelly, 2013). They also have to respond to students' individualized needs (Bouchard & Berg, 2017), recognize excellent work, and praise good performance. They should not wait for perfect task completion before praising their students (Shuler, 2014). Teachers' care has to extend its remits to be more sensitive to their students' needs (Chhuon & Wallace, 2014) and emotional states (Porter et al., 2021). They need to show an interest in knowing about their students' personal lives (Booker, 2021; Chhuon & Wallace, 2014; Porter et al., 2021) and culture (Harris, 2021). In this regard, using a Culturally Relevant Pedagogy (CRP) helps teachers develop a better relationship with their students and help students connect more with their teachers. This means that Culturally Relevant Pedagogy can positively influence the teacher-student relationship and their relationships can have a great influence on student's academic performance especially when teachers consider student as a person and not as a "faceless number" (Harris, 2021).

A teacher's role should include protecting students by monitoring signs of abuse or neglect. They need to support learners by addressing their educational and psychological needs, even if teachers have to refer students to other professionals for further support (Thompson & Wyatt, 1999). Furthermore, Phasha (2008) stressed that teachers must establish good relationships with abused students by sympathizing and listening attentively, without being judgmental, in order to develop a trusting relationship. This can help students to overcome psychological damage and develop positive self-esteem and trust their abilities.

Bouchard and Berg (2017) highlighted that while teachers should show an interest in knowing about their students' academic and social lives, students should also display a caring attitude toward their teachers. However, students are not keen on supporting teachers unless the latter show willingness to share personal information with the students. Bouchard and Berg (2017) stressed: "the importance for teachers to foster reciprocal spaces in the classroom, where students feel comfortable providing support to teachers" (p. 128).

Teachers have to be good role models for students as they play a significant role in the life of their students. The American Psychological Association (2002) suggested that teachers acting as role models, by demonstrating supportive behavior and indulging in democratically mediated conversations with the students, could contribute to the students' moral development, as they may be inspired to follow the teacher's example. Such teachers can also help to enhance reasoning skills by encouraging students to face up to problems and resolve conflicts, instead of avoiding them.

Dealing with student misconduct can trigger stress in teachers. Additionally, teachers' professionalism and personal self-esteem can be impacted, either positively or negatively, depending on their relationships with the students (Spilt et al., 2011). Furthermore, Hastings and Bham (2003, p. 122) revealed that student disrespect contributed to negative emotions and exhaustion among teachers. Moreover, a lack of sociability from students can create a feeling of "depersonalization" amongst teachers. All of which could lead to teacher burnout. Herman et al. (2018) indicated that the teachers' experience of severe stress, burnout, and the use of ineffective coping mechanisms are associated with a decrease in student outcomes. Supporting teachers to maximize student outcomes has to be given utmost importance.

School Safety

School safety is the third school climate factor that can influence a student's sense of belonging at school. This underscores the importance of safety and the need to have an appropriate disciplinary approach in place.

It is vital that students feel safe on school premises. This is a worldwide issue, and the United Nations Convention has called for an agreement between countries on the rights of children to play, rest, and live in a clean and safe environment. It suggested that every global citizen is responsible for respecting the rights of children to be protected from maltreatment (UNICEF, n.d.). Safety not only includes the absence of hazardous objects, but it also encompasses a feeling of being respected and protected. Having a trusting relationship with peers and adults, as well as understanding what is expected from students in terms of discipline, school rules, and academic requirements can also enhance the students' feelings of safety (National Association of School Psychologist, 2013).

Several studies have shown that feeling safe at school contributes to a sense of belonging. For example, Allen and Bowles (2012); El Zaatari and Ibrahim (2021); Koyuncu (2021) noted that safety was one of the main measures of school belonging. Henry et al. (2021) as well highlighted the importance of not only physical but also emotional safety in the development of belonging. Likewise, Haugen et al. (2019) consider safety as an affective dimension of belonging. Safety is a crucial dimension that has to be fulfilled in order for students to experience a feeling of belonging. Under other conditions, Williams et al. (2018) have provided a distinct perspective where school belonging is a factor that can increase the feeling of security.

Williams et al. (2018) believe that a clean and harm-free physical structure is one factor that increases feelings

of security. The playground is one of the most dangerous places in any school as students spend most of the recess in the playground where they are at higher risk of injury due to their ignorance of the proper use of the playground equipment or using them with their friends carelessly. Children are often not aware of the safety requirements of the playground and playground equipment. Therefore, schools and higher authorities should consider providing a safe play environment by carrying out regular different types of equipment checkups and increasing the supervision in the playground (Sansakorn et al., 2022).

To ensure the safety of students, schools have to stop punishing students with suspensions, expulsion, or corporal punishment. The use of corporal punishment has many negative consequences on youth such as the development of rebellious and aggressive behaviors. These behaviors have declined in the societies that banned the use of corporal punishment (Elgar et al., 2018). To overcome the negative effects of punishment, Humphreys (2008) suggested involving students in the decision-making process regarding the disciplinary approaches to be adopted, taking part in setting school rules and regulations, and replacing corporal punishment with positive reinforcement. In addition, Feigenberg (2007) recommended that schools should understand the reasons for student misbehavior, instead of running to sudden, possibly unfair, conclusions. It is also recommended to provide students with a chance to express their worries and encourage them to make suggestions on how to control their anger, and how to change the present unfavorable situation. Additionally, school rules need to be clear and applied fairly.

Bullying is another factor that can shake any feelings of security. Smokowski et al. (2014), who assessed the impact of bullying, indicated that students who were victims of physical or verbal bullying did not feel secure at school and were not satisfied with the school environment. In addition, they did not seek any attachment with their peers and had elevated levels of anxiety, depression, self-blame, and aggression. Kim (2018) added that victimized students felt rejected and disliked by their peers and the school community, and so lost their sense of belonging to a school. In this regard, Lin et al. (2018) indicated that when students felt rejected, they would find comfort and belonging with their more delinquent peers. They would also get involved in aggressive behavior as a reactive response toward their peers. Furthermore, they would often be less motivated to participate in the classroom, work on finishing required learning tasks, embrace school activities, or follow the teacher's instructions (Kim, 2018). Cyberbullying, even if it happens outside of the school premises, can also affect students' well-being and make them anxious and worried

and undermine their school life. The hidden nature of cyberbullying can cause victims to feel insecure and see dangers everywhere (Smokowski et al., 2014).

Therefore, it is important to protect victimized students before they become chronic victims who will develop more serious mental health problems (Smokowski et al., 2014). Duggins et al. (2016) emphasized the importance of supporting students in promoting their sense of school belonging by developing a positive school climate. This requires teachers and parents to work on developing the psychosocial skills required by students for successful interactions (Newman et al., 2007). Additionally, Guerra et al. (2011) have emphasized the importance of developing students' self-esteem and encouraging them to accept and respect others who are different from them in order to prevent victimization and aggression. Thus, providing victimized students with social and emotional support can improve their attitudes toward the school, and help in modifying their negative behaviors and improving academic achievement. They will also begin to adhere to the school norms and rules as they seek recognition from school personnel (Kim, 2018).

Extracurricular Activities

Extracurricular activities constitute the fourth school climate factor that can increase a sense of school belonging (El Zaatari & Ibrahim, 2021; Goodenow, 1993b; Ratliff, 2021). Goodenow (1993b) explained that school should encourage students to become involved in extracurricular activities as membership and belonging can be attained through shared social relations between students and other school members. Taking part in extracurricular activities could enhance the students' sense of agency (Porter et al., 2021) and improve their academic achievement and social competence (Ashley, 2014; Baria & Gomez, 2022). Students also have the chance to form relationships outside of the classroom with adult school personnel such as coaches and teachers (Baria & Gomez, 2022) Ashley (2014) has posited that, under such circumstances, their motivation and engagement increase and their non-academic abilities improve. They learn to cooperate with others positively and face up to difficulties and obstacles that they may face in life.

One way of involving students in extracurricular activities is to give them a chance to take leadership roles by mentoring and organizing school social events (Stickl, 2017). Schools should give students, especially at-risk learners, equal opportunities to lead, in order to bridge the achievement gap between students (Frizzley, 2017). Frizzley (2017) also states that inculcating a culture of student leadership has several benefits. Leadership roles offer students opportunities to become leaders at an

early age and become prepared to work in groups and establish common goals. These roles can foster connections between the leaders and other students (Stickl, 2017), and influence not only the leaders' development, but also the development of the school climate and peers (Pedersen et al., 2012). They will get the chance to face up to problems and learn how to resolve them. In such situation, they will feel empowered, actively engaged, motivated, and have high feelings of self-efficacy (Hughes & Pickeral, 2013). In addition, the number of referral cases and problematic students will decrease, as the overall sense of joy and confidence increases. The culture of the school will shift in a positive direction, resulting in greater academic achievement and an overall sense of connectivity to the school community (Frizzley, 2017).

Peer Interactions

The peer interactions factor is the fifth school climate factor in establishing a positive school climate and can affect the students' sense of belonging at school. These interactions have substantial benefits for student development. However, the formed relationships can sometimes harm students when they are involved with delinquent or victimizing behaviors.

Influential peer relationships can contribute to increasing a sense of belonging (El Zaatari & Ibrahim, 2021; Dehuff, 2013; Koyuncu, 2021; Longaretti, 2020). Students, especially during adolescence, need to develop caring relationships with friends and the feeling of being accepted, included, and valued by their peers (Longaretti, 2020). Porter et al. (2021) noted that when students have trustworthy friends, these friends will act as a shield against the feeling of exclusion and physical threats. Baria and Gomez (2022) further explained that

> peers play an important role in fulfilling the requirements for self-reliance, connectedness, and credibility of students. It also fuels a person's desire to grow or perform efficiently. Human beings are thus highly driven, capable of achieving their potential, and capable of finding more significant challenges. In addition, spending time with their peers offers greater interest in physical activity and greater time playing outdoors relative to those kids who spend time with others (p. 87).

Peer relationships are similar to those of siblings; when conflict arises, they tend to reconcile and resolve problems quickly (Dehuff, 2013). Newman et al. (2007) posited that students who valued peer group membership and had a good sense of relationships within a peer group developed fewer behavioral problems. They developed feelings of self-worth and acceptance as well as provided their peer group with social support, advice, and care.

Additionally, Newman et al. (2007) remarked that these benefits could offset some of the negative influences of other peers.

Goodenow (1993b) emphasized that even in caring school environments, some students may feel socially excluded for a variety of reasons, such as weak social interactions. Therefore, schools and teachers should work on improving the students' social integration in the school and classroom. If students feel a lack of support from school staff, they may attach themselves to peer groups who have negative attitudes toward academic norms. Such students will gradually become disaffected and will not identify themselves with their school. Consequently, they will be less motivated and engaged and will not perform well academically.

Being part of a group can have either a positive or negative impact on student development. Smith (2015) reminded us that not every peer relationship is a positive influence on identity formation. Inappropriate peer relationships can encourage risk-taking and other anti-social behaviors. Another negative peer influence is bullying which occurs in different forms including physical, verbal, and sexual bullying, cyberbullying, and other forms of bullying. Bullying is prevalent at school. According to Guerra et al. (2011), a decrease in student self-esteem contributes to more bullying and victimization. Bullies usually try to pick on weaker students in order to compensate for their weaknesses and feel more powerful. They enjoy being involved in bullying or watching fights between other students. Moreover, successful students are usually disliked and excluded by their peers in school environments and are even exposed to peer bullying (Koyuncu, 2021). In such a context, student will feel insecure and their sense of belonging will decrease (Kim, 2018).

Parental Involvement

Parental involvement, at home or school, plays a significant role in student development and can offset the negative effects of victimization. Parental involvement is not limited to any specific education stage or age group.

Parental involvement, at home and school, increases student motivation and their sense of belonging to their school (Uslu & Gizir, 2017). Ahmadi et al. (2020), Baria and Gomez (2022), Serna and Martínez (2019), Woolley and Bowen (2007) all pointed to the substantial role that parental involvement and support have in enhancing students' sense of belonging to their school. Parental involvement can play a significant role in supporting a child's intellectual, social, and academic development (Jaiswal, 2018). Ahmadi et al. (2020) saw more advantages of this involvement including an increase in school attendance, a positive sense of well-being and perceptions of school,

and higher academic achievement. Furthermore, parental support helps students to develop higher self-esteem and self-discipline, and be empowered and motivated to enhance their learning outcomes (Baria & Gomez, 2022). It can take many forms such as providing good parenting at home, having open discussions, creating a secure and stable environment, providing intellectual stimulation, and providing children with opportunities to prosper (Desforges & Abouchaar, 2003).

Parental involvement is not limited to school-age children but extends to adolescents. Wang and Sheikh-Khalil (2014) highlight that when parents are involved with various aspects of their adolescents' high school education, care about their performance at school, and discuss their future plans, they are showing their children the importance of committing themselves to their academic progress. Furthermore, adolescents will be motivated to work harder and cope with academic challenges, believe in their ability to succeed, and feel less powerless (Wang & Sheikh-Khalil, 2014). Serna and Martínez (2019) add that high school students will better adapt to the school environment have greater satisfaction and a pro-social disposition, and a stronger sense of belonging at school. These results are constant for different groups despite differences in academic performance, sex, and age.

When students are victimized, their feelings of security are endangered (Smokowski et al., 2014) and they are more prone to be involved in aggressive behavior (Lin et al., 2018). As a result, their sense of belonging at school will also decrease (Kim, 2018). Therefore, when parents are aware of the reasons behind their children's negative behavior and provide them with support, the adverse effects of peer victimization or aggression are alleviated (Lin et al., 2018). Likewise, victimized students, who were highly connected to their family and school, are less likely to be involved in aggressive behavior (Duggins et al., 2016). However, Cox et al. (2011) clarify that when the relationship between students and parents is rigid, the students' ability to function and behave properly in school will be negatively affected. To rectify this issue, schools and teachers have to know more about their students' lives in order to help them to navigate daily academic and social issues.

Berry (2019) explains that the most common barrier to parental involvement in school activities is the parents' busy work schedule. Barry adds other less common factors including being busy caring for many children, living with younger siblings, struggling with child care, and inconvenient activity time. Hornby and Blackwell (2018) also reveal that the barriers to parental involvement in their children's school lives are classified into factors that are related to parents or family, teachers, society, and practical factors. The family factors include the negative school experiences of parents, low literacy levels, life hardship, engagement in a variety of social activities, and parents' concerns about the possibility of being criticized or judged by teachers. The teacher related factors are busy schedules and lack of training on how to deal with parents. The societal factors comprise racism. The school operation hours and lack of the parent's knowledge about how to approach teachers are regarded as practical barriers to parental involvement in schooling. Moreover, Lechuga-Peña and Brisson (2018) identified cultural and language differences and being a single parent as other barriers to parental engagement in school activities.

Parental involvement at school is vital and should be given more attention as a key contributor to enhancing the school climate. As such, schools should provide parents with opportunities to increase their involvement, express their opinions and even participate in developing policies that aim at improving the school climate (Freiberg & Stein, 1999, p. 11). Schools should individualize their planning since a, "one size fits all approach to parental involvement masks the complexity of needs and roles that parents play and the constraints they face that impede their involvement in schools" (Hourani et al., 2012, p. 138). Allen et al. (2018) also propose that encouraging parental involvement can be one of the approaches that schools can use to enhance students sense of school belonging and assist in establishing a supportive environment. Several ways schools can use to share parents in school life and these include:

> Organizing parent information sessions and ensuring effective communication between school and home. For example, schools can use information nights to assist parents with fostering positive parent-child relationships and positive communication skills in addition to prioritizing educational goals. School and teaching staff may also provide appropriate referral pathways and support to parents in navigating relationships with their children (p. 25).

Conclusion and Recommendations

Many pieces of research have focused on the importance of various school-related factors and studied their influence on students' sense of belonging at school. However, we cannot disregard the multi-influential factors that can collectively play a significant role in the development of belonging. The central concept of this review underscores the fact that the development of a student's sense of belonging at school occurs as a result of different interactions between developing students and the school's ecological environment over a period of time. As such, researchers have considered the Bio-ecological Systems Theory, with its focus on the PPCT Model as the main theoretical framework for this review. The PPCT Model,
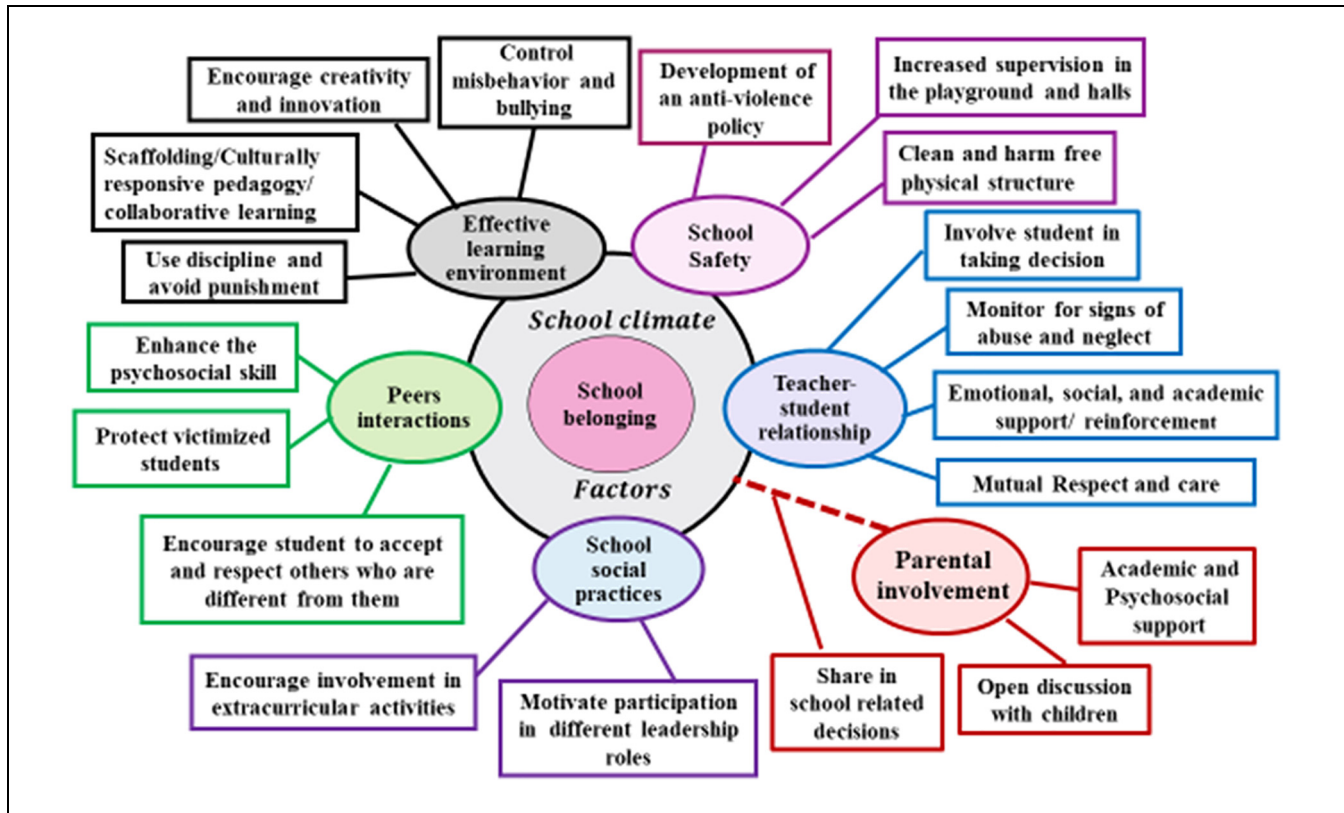
Figure 4. Important practices of school climate factors that could enhance school belonging.

with all the interactions between people, process, context, and time, can explain the different factors that can collectively influence a student's sense of belonging to their school. In general, the students' personal characteristics including age, gender, temperament, personal, and material resources, the various educational events and students' stage of development (in chronological time), the school ecological systems, and concomitant interactions within and between the systems can all work together to develop students' sense of belonging to their school.

The researchers have also focused on one of the interacting components of the PPCT Model, the context, and more specifically, the school microsystem. At the school microsystem level, several practices and interactions constitute what is called a school climate. They play a substantial role in directly influencing the development of an adolescent's sense of belonging to their school. The researchers classified the most important practices and interactions into six school climate factors which are summarized in Figure 4 as shown below.

Bronfenbrenner's Theory acts as a useful framework for researchers studying students development. This review suggests the need for empirical, longitudinal research that can comprehensively study the development of a student's sense of belonging to their school by using the PPCT framework of Bronfenbrenner's Bio-ecological Systems Theory. Using longitudinal research will allow researchers to see how a sense of belonging can be changed based on the changes in chronological age and the events that might occur during the study period. It is also recommended to include student and teacher voices in order to express their concerns and participate in the development of the educational system. After all, they are the ones who live the everyday experiences and know what it takes to grow and succeed. If the educational agenda and policies are changed in accordance with the stakeholders' experiences and feedback, this might help improve the school climate and students' sense of belonging.

Acknowledgments

Declaration of Conflicting Interests

ORCID iD

Wafaa El Zaatari ⬩ https://orcid.org/0000-0001-8771-0387

References

Abdollahi, A., Panahipour, S., Akhavan Tafti, M., & Allen, K. A. (2020). Academic hardiness as a mediator for the relationship between school belonging and academic stress. *Psychology in the Schools*, *57*(5), 823–832. https://doi.org/10.1002/pits.22339

Aceves, T. C., & Orosco, M. J. (2014). *Culturally responsive teaching* (Report No. IC-2). Collaboration for Effective Educator, Development, Accountability, and Reform Center, University of Florida. http://ceedar.education.ufl.edu/tools/innovation-configurations/

Ahmadi, S., Hassani, M., & Ahmadi, F. (2020). Student- and school-level factors related to school belongingness among high school students. *International Journal of Adolescence and Youth*, *25*(1), 741–752. https://doi.org/10.1080/02673843.2020.1730200

Aliyev, R., & Tunc, E. (2015). The investigation of primary school students' perception of quality of school life and sense of belonging by different variables. *Revista De Cercetare Si Interventie Sociala*, *48*, 164–182. https://dialnet.unirioja.es/servlet/articulo?codigo = 5509599

Allen, K., Kern, M. L., Vella-Brodrick, D., Hattie, J., & Waters, L. (2018). What schools need to know about fostering school belonging: A meta-analysis. *Educational Psychology Review*, *30*(1), 1–34.

Allen, K. A., & Bowles, T. (2012). Belonging as a guiding principle in the education of adolescents. *Australian Journal of Educational & Developmental Psychology*, *12*, 108–119.

Allen, K. A., Kern, M. L., Rozek, C. S., McInereney, D., & Slavich, G. M. (2021). Belonging: A review of conceptual issues, an integrative framework, and directions for future research. *Australian Journal of Psychology*, *73*(1), 87–102.

Allen, K. A., Vella-Brodrick, D., & Waters, L. (2016). Fostering school belonging in secondary schools using a socio-ecological framework. *The Educational and Developmental Psychologist*, *33*(1), 97–121.

American Psychological Association. (2002). *Developing adolescents: A reference for professionals*.

Ammar, M. A. A. (2022). Development and initial validation of sense of belonging scale for adolescents (sobs): preliminary investigation. *ASEAN Journal of Psychiatry*, *22*(10), 1–22. https://www.aseanjournalofpsychiatry.org

Aragón, O. R., Dovidio, J. F., & Graham, M. J. (2017). Color-blind and multicultural ideologies are associated with faculty adoption of inclusive teaching practices. *Journal of Diversity in Higher Education*, *10*(3), 201–215.

Arslan, G., Allen, K. A., & Ryan, T. (2020). Exploring the impacts of school belonging on youth wellbeing and mental health among Turkish adolescents. *Child Indicators Research*, *13*(5), 1619–1635.

Ashley, C. R. (2014). *The relationship between after-school programs, sense of belonging, and positive relationships among middle school students* [Doctoral dissertation]. Available from Dissertations and Thesis database (UMINo.3631227).

Bakır-Ayğar, B., & Kaya, A. (2017). Ortaokul öğrencilerinin okul aidiyet duygusu ile okul temelli yalnızlık arasındaki ilişkide okul ikliminin aracılık rolü. *E-Uluslararası Eğitim Araştırmaları Dergisi*, *8*(1), 14–27.

Baria, K., & Gomez, D. (2022). Influence of social support to student learning and development. *International Journal of Research Studies in Education*, *11*(2), 69–97.

Berlian, Z., & Huda, M. (2022). Reflecting culturally responsive and communicative teaching (CRCT) through partnership commitment. *Education Sciences*, *12*(5), 295.

Berry, E. J. (2019). *Barriers to parental involvement*. https://scholarworks.umf.maine.edu/cgi/viewcontent.cgi?article = 1042&context = ech_projects

Booker, K. (2021). Rules without relationships lead to rebellion: Secondary teachers and school belonging. *School Community Journal*, *31*(1), 65–84.

Booth, M. Z., & Gerard, J. M. (2014). Adolescents' stage-environment fit in middle and high school: The relationship between students' perceptions of their schools and themselves. *Youth & Society–*, *46*(6), 735–755.

Bouchard, K. L., & Berg, D. H. (2017). Students' school belonging: Juxtaposing the perspectives of teachers and students in the late elementary school years (grades 4–8). *The School Community Journal*, *27*(1), 107–136.

Brockmeier, L. L., Green, R. B., Pate, J. L., Tsemunhu, R., & Bochenko, M. J. (2014). Teachers' beliefs about the effects of high stakes testing. *Journal of Education and Human Development*, *3*(4), 91–104.

Bronfenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Harvard University Press.

Bronfenbrenner, U. (1989). Ecological systems theory. In R. Vasta (Ed.), *Annals of child development: Six theories of child development, revised formulations and current issues* (*Vol. 6*, pp. 187–249). JAI Press.

Bronfenbrenner, U. (1993). Ecological models of human development. In M. Gauvain & M. Cole (Eds.), *Readings on the development of children* (2nd ed., pp. 37–43). Freeman.

Bronfenbrenner, U., & Morris, P. A. (2006). The bio-ecological model of human development. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology: Theoretical models of human development* (pp. 793–828). Wiley.

Cemalcilar, Z. (2010). Schools as socialisation contexts: Understanding the impact of school climate factors on students sense of school belonging. *Applied Psychology*, *59*(2), 243–272. https://doi.org/10.1111/j.1464-0597.2009.00389.x

Chhuon, V., & Wallace, T. L. (2014). Creating connectedness through being known: Fulfilling the need to belong in U.S. high schools. *Youth & Society*, *46*(3), 379–401. https://doi.org/10.1177/0044118X11436188

Chiu, M. M., Chow, B. W. Y., McBride, C., & Mol, S. T. (2016). Students' sense of belonging at school in 41 countries: Cross-cultural variability. *Journal of Cross-Cultural Psychology*, *47*(2), 175–196.

Cohen, E., & Viola, J. (2022). The role of pedagogy and the curriculum in university students' sense of belonging. *Journal of University Teaching & Learning Practice*, *19*(4), 06.

Cooper, K. S. (2014). Eliciting engagement in the high school classroom: A mixed-methods examination of teaching practices. *American Educational Research Journal*, *51*(2), 363–402. https://doi.org/10.3102

Cortina, K. S., Arel, S., & Smith-Darden, J. P. (2017). School belonging in different cultures: The effects of individualism and power distance. *Frontiers in Education*, *2*, 56.

Cox, M. J., Wang, F., & Gustafsson, H. C. (2011). Family organization and adolescent development. In B. B. Brown & M. J. Prinstein (Eds.), *Encyclopedia of adolescence* (pp. 75–83). Academic Press, Elsevier Inc.

Darling-Hammond, L., Flook, L., Cook-Harvey, C., Barron, B., & Osher, D. (2020). Implications for educational practice of the science of learning and development. *Applied Developmental Science*, *24*(2), 97–140.

Deci, E. L. (1980). *The psychology of self-determination*. D.C. Health and company.

Dehuff, P. A. (2013). *Students' wellbeing and sense of belonging: A qualitative study of relationship and interactions in a small school district* [Doctoral dissertation]. Available from ProQuest Dissertations & Theses database (UMI No. 3587070).

Desforges, C., & Abouchaar, A. (2003). *The impact of parental involvement, parental support and family education on Pupil achievement and adjustment: A literature review*. Retrieved June 12, 2018, from https://www.nationalnumeracy.org.uk/sites/default/files/the_impact_of_parental_involvement.pdf

Duggins, S. D., Kuperminc, G. P., Henrich, C. C., Smalls-Glover, C., & Perilla, J. L. (2016). Aggression among adolescent victims of school bullying: Protective roles of family and school connectedness. *Psychology of Violence*, *6*(2), 205–212. https://doi.org/10.1037/a0039439

El Zaatari, W., & Ibrahim, A. (2021). What promotes adolescent students' sense of school belonging? Students' and teachers' convergent and divergent views. *Cogent Education*, *8*(1), 1–19. https://doi.org/10.1080/2331186X.2021.1984628

Elgar, F. J., Donnelly, P. D., Michaelson, V., Gariépy, G., Riehm, K. E., Walsh, S. D., & Pickett, W. (2018). Corporal punishment bans and physical fighting in adolescents: An ecological study of 88 countries. *BMJ Open*, *8*(9), e021616.

Faour, M. (2012). *The Arab world's education report card: School climate and citizenship skills*. Carnegie Endowment for International Peace.

Farrelly, Y. (2013). *The relationship and effect of sense of belonging, school climate, and self-esteem on student populations* [Doctoral dissertation]. ProQuest Dissertations & Theses database (UMI No. 3592074).

Feigenberg, L. F. (2007). *Context matters: The influence of school climate on early adolescents' behavior and social development* [Doctoral dissertation]. ProQuest Dissertations & Theses database (UMI No.3271680).

Fong Lam, U., Chen, W. W., Zhang, J., & Liang, T. (2015). It feels good to learn where I belong: School belonging, academic emotions, and academic achievement in adolescents. *School Psychology International*, *36*(4), 393–409. https://doi.org/10.1177/0143034315589649

Freiberg, H. J., & Stein, T. A. (1999). Measuring, improving, and sustaining healthy learning environment. In H. J. Freiberg (Ed.), *School climate: Measuring, improving and sustaining healthy learning environment* (pp. 11–29). Falmer Press, Taylor and Francis Inc.

Frizzley, S. M. (2017). *The benefit of creating a culture of student leadership on school-aged students*. Retrieved March 21, 2018, from http://hdl.handle.net/20.500.11803/67

Gleason, K. (2011). *How teachers deal with bullying: Best practices for identifying and dealing with bullying behaviors among high school students*. https://eric.ed.gov/?id = ED 518580

Goodenow, C. (1993a). Classroom belonging among early adolescent students' relationships to motivation and achievement. *The Journal of Early Adolescence*, *13*, 21–43. https://doi.org/10.1177/0272431693013001002

Goodenow, C. (1993b). The psychological sense of school membership among adolescents: Scale development and educational correlates. *Psychology in the Schools*, *30*, 79–90.

Guerra, N. G., Williams, K. R., & Sadek, S. (2011). Understanding bullying and victimization during childhood and adolescence: A mixed methods study. *Child Development*, *82*(1), 295–310. https://doi.org/10.1111/j.1467-8624.2010.01556.x

Günalan, N. (2018). *What affects the quality of school life, the sense of school belonging, and school climate of secondary school students?* [Unpublished master's thesis]. Aydın Adnan Menderes University.

Hamm, J. V., Farmer, T. W., Dadisman, K., Gravelle, M., & Murray, A. R. (2011). Teachers' attunement to students' peer group affiliations as a source of improved student experiences of the school social–affective context following the middle school transition. *Journal of Applied Developmental Psychology*, *32*(5), 267–277. https://doi.org/10.1016/j.appdev.2010.06.003

Harris, R. L. (2021). *Student perceptions of culturally relevant pedagogy and the impact on teacher-student relationships* [Doctoral dissertation]. University of South Carolina.

Hastings, R. P., & Bham, M. S. (2003). The relationship between student behaviour patterns and teacher burnout. *School Psychology International*, *24*(1), 115–127.

Haugen, J. S., Wachter Morris, C., & Wester, K. (2019). The need to belong: An exploration of belonging among urban middle school students. *Journal of Child and Adolescent Counseling*, *5*(1), 1–17. https://doi.org/10.1080/23727810.2018.1556988

Hayes, H., O'Toole, L., & Halpenny, A. N. (2017). *Introducing Bronfenbrenner: A guide for practitioner and students in early years education*. Routledge, Taylor & Francis Group.

Henry, D., Leader, U. Y., Jessee, C., Martinez, M., Moore, A. M. S., Singla, A., & Sarah Thomsen, M. P. H. (2021). *Connectedness, positive values and contributions to society: Three building blocks of adolescent well-being*. https://www.adolescents2030.org/media/791844/eng_05_adol-wbeing-bkg-ppr-5-connectedness-etc-final.pdf

Herman, K. C., Hickmon-Rosa, J., & Reinke, W. M. (2018). Empirically derived profiles of teacher stress, burnout, self-efficacy, and coping and associated student outcomes. *Journal of Positive Behavior Interventions*, *20*(2), 90–100.

Hornby, G., & Blackwell, I. (2018). Barriers to parental involvement in education: An update. *Educational Review*, 70(1), 109–119.

Hourani, R. B., Stringer, P., & Baker, B. (2012). Constraints and subsequent limitations to parental involvement in primary schools in Abu Dhabi: Stakeholders' perspectives. *School Community Journal*, 22(2), 131–160.

Huang, H. M., Xiao, L., & Huang, D. H. (2013). Students' ratings of school climate and school belonging for understanding their effects and relationship of junior high schools in Taiwan. *Global Journal of Human Social Science Linguistics & Education*, 13(3), 24–31.

Hughes, W., & Pickeral, T. (2013). *School climate and shared leadership*. National School Climate Centre.

Humphreys, S. (2008). Gendering corporal punishment: Beyond the discourse of human rights. *Gender and Education*, 20(5), 527–540. https://doi.org/10.1080/0954025070179 7150

Huyge, E., Van Maele, D., & Van Houtte, M. (2015). Does students' machismo fit in school? Clarifying the implications of traditional gender role ideology for school belonging. *Gender and Education*, 27(1), 1–18.

Ibrahim, A., & Al-Taneiji, S. (2019). Teacher satisfaction in Abu Dhabi public schools: What the numbers did not say. *Issues in Educational Research*, 29(1), 106–122. http://www.iier.org.au/iier29/ibrahim.pdf

Ibrahim, A., & El Zaatari, W. (2020). The teacher-student relationship and adolescents' sense of school belonging. International Journal of Adolescence and Youth, 25(1), 382-395. https://doi.org/10.1080/02673843.2019.1660998

Jaiswal, S. K. (2018). Influence of parent's education on Parental Academic Involvement. *Journal of Advances and Scholarly Researches in Allied Education*, 15(5), 114–119.

Kalkan, F., & Dağlı, E. (2021). The relationships between school climate school belonging and school burnout in secondary school students. *International Journal of Contemporary Educational Research*, 8(4), 59–79. https://doi.org/10.33200/ijcer.878682

Keyes, T. S. (2019). A qualitative inquiry: Factors that promote classroom belonging and engagement among high school students. *School Community Journal*, 29(1), 171–200.

Kim, S. (2018). *Peer victimization in the school context: A study of school climate and social identity processe*s [Doctoral dissertation]. https://qspace.library.queensu.ca/handle/1974/24830

Korpershoek, H., Canrinus, E. T., Fokkens-Bruinsma, M., & de Boer, H. (2020). The relationships between school belonging and students' motivational, social-emotional, behavioral, and academic outcomes in secondary education: A meta-analytic review. *Research Papers in Education*, 35(6), 641–680. https://doi.org/10.1080/02671522 .2019.1615116

Koth, C. W., Bradshaw, C. P., & Leaf, P. J. (2008). A multilevel study of predictors of student perceptions of school climate: The effect of classroom-level factors. *Journal of Education & Psychology*, 100(1), 96–104. https://doi.org/10.1037/0022-0663.100.1.96

Koyuncu, İ. (2021). TIMSS international benchmarks of eighth graders in mathematics: A correspondence analysis study. *International Electronic Journal of Elementary Education*, 14(2), 179–194.

Krishnan, V. (2010). *Early child development: A conceptual model* [Paper presentation]. Early childhood Council Annual Conference, "Valuing Care," Christchurch Convention Center, Christchurch, New Zealand.

Kupchik, A., & Farina, K. A. (2016). Imitating authority: Students' perceptions of school punishment and security, and bullying victimization. *Youth Violence and Juvenile Justice*, 14(2), 147–163.

Lechuga-Peña, S., & Brisson, D. (2018). Barriers to school-based parent involvement while living in public housing: A mother's perspective. *The Qualitative Report*, 23(5), 1176–1187.

Lin, S., Yu, C., Chen, W., Tian, Y., & Zhang, W. (2018). Peer victimization and aggressive behavior among Chinese adolescents: Delinquent peer affiliation as a mediator and parental knowledge as a moderator. *Frontiers in Psychology*, 9(1036), 1–8. https://doi.org/10.3389/fpsyg.2018.01036

Longaretti, L. (2020). Perceptions and experiences of belonging during the transition from primary to secondary school. *Australian Journal of Teacher Education*, 45(1), 31–46.

Martin, A. J., & Dowson, M. (2009). Interpersonal relationships, motivation, engagement, and achievement: yields for theory, current issues, and educational practice. *Review of Educational Research*, 79(1), 327–365. https://doi.org/10.3102/0034654308325583

Miller, J., & Desberg, P. (2009). *Understanding and engaging adolescents*. Corwin, a SAGE company.

National Association of School Psychologist. (2013). *Rethinking school safety: Communities and schools working together*. https://www.nasponline.org/Documents/Research%20and%20Policy/Advocacy%20Resources/Rethinking_School_Safety_Key_Message.pdf

Neel, C. G.-O., & Fuligni, A. (2013). A longitudinal study of school belonging and academic motivation across high school. *Child Development*, 84(2), 678–678. https://doi.org/10.1111/j.1467-8624.2012.01862.x

Newman, B. M., Lohman, B. J., & Newman, P. R. (2007). Peer group membership and a sense of belonging: Their relationship to adolescent behavior problems. *Adolescence*, 42(166), 241–263.https://go.gale.com/ps/i.do?id = GALE%7CA1675 85394&sid = googleScholar&v = 2.1&it = r&linkaccess = abs &issn = 00018449&p = AONE&sw = w&userGroupName = anon%7E2ad0c6e8

Oyseman, D., Elmore, K., & Smith, G. (2012). Self, self-concept, and identity. In M. R. Leary, & J. P. Tangney (Eds.), *Handbook of self and identity* (pp. 69–104). The Guilford Publications, Inc.

Pedersen, J., Yager, S., & Yager, R. (2012). *Student leadership distribution: Effects of a student-led leadership program on school climate and community*. https://files.eric.ed.gov/fulltext/EJ973800.pdf

Phasha, T. N. (2008). The role of the teacher in helping learners overcome the negative impact of child sexual abuse: A South African perspective. *School Psychology International*, 29(3), 303–327. https://doi.org/10.1177/0143034308093671

Porter, J., McDermott, T., Daniels, H., & Ingram, J. (2021). Feeling part of the school and feeling safe: Further

development of a tool for investigating school belonging. *Educational Studies*, *47*, 1–17. https://doi.org/10.1080/03055698.2021. 1944063

Ratliff, M. (2021). *How participation in school music ensembles influences student sense of belonging.* https://scholarworks.calstate.edu/downloads/wm117v30g

Richards, M., & Huppert, F. A. (2011). Do positive children become positive adults? Evidence from a longitudinal birth cohort study. *The Journal of Positive Psychology*, *6*(1), 75–87.

Rich, Y., & Schachter, E. P. (2012). High school identity climate and student identity development. *Contemporary Educational Psychology*, *37*(3), 218–228. https://doi.org/10.1016/j.cedpsych.2011.06.002

Ritt, M. (2016). *The impact of high-stakes testing on the learning environment* [Master thesis, St. Catherine University]. https://sophia.stkate.edu/cgi/viewcontent.cgi?article = 1660&context = msw_papers

Robinson, J. (2020). *Creating a Sense of belonging through culturally responsive pedagogy, culturally relevant teaching, and invitational theory in art education* [Online Submission]. https://files.eric.ed.gov/fulltext/ED606505.pdf

Şahin, Ş., Arseven, Z., & Kılıç, A. (2016). Causes of student absenteeism and school dropouts. *International Journal of Instruction*, *9*(1), 195–210.

Salmela-Aro, K. (2011). Stages of adolescence. In B. B. Brown, & M. J. Prinstein (Eds.), *Encyclopedia of adolescence* (pp. 360–368). Academic Press, Elsevier Inc.

Sánchez, B., Colón, Y., & Esparza, P. (2005). The role of sense of school belonging and gender in the academic adjustment of Latino adolescents. *Journal of Youth and Adolescence*, *34*(6), 619–628. https://doi.org/10.1007/s10964-005-8950-4

Sansakorn, P., Madardam, U., Pongsricharoen, J., Srithep, N., Janjamsri, N., & Mongkonkansai, J. (2022). The current status of public playground safety and children's risk taking behavior in the park: Nakhon Si Thammarat Province, Thailand. *Children*, *9*(7), 1034. https://doi.org/10.3390/children9071034

Serna, C., & Martínez, I. (2019). Parental involvement as a protective factor in school adjustment among retained and promoted secondary students. *Sustainability*, *11*(24), 7080. https://doi.org/10.3390/su11247080

Shelton, L. G. (2019). *The Bronfenbrenner primer: A guide to Develecology*. Routledge.

Shuler, D. (2014). *Creating a positive learning climate: A case study of a small day school* [Master thesis]. https://etd.library.emory.edu/concern/etds/rn301157w?locale = en

Smith, M. L. (2015). *School climate, early adolescent development, and identity: Associations with adjustment outcomes* [Doctoral dissertation]. ProQuest Dissertations & Theses database. (UMI No. 3718568)

Smokowski, P. R., Evans, C. B., & Cotter, K. L. (2014). The differential impacts of episodic, chronic, and cumulative physical bullying and cyberbullying: The effects of victimization on the school experiences, social support, and mental health of rural adolescents. *Violence and Victims*, *29*(6), 1029–1046. https://doi.org/10.1891/0886-6708.VV-D-13-00076

Spilt, J. L., Koomen, H. M. Y., & Thijs, J. T. (2011). Teacher wellbeing: The importance of teacher–student relationships. *Educational Psychology Review*, *23*, 457–477.

Steiner, J. L. (2011). *The relationship between middle school students' college-going beliefs and sense of belonging in school* [Doctoral dissertation]. ProQuest Dissertations & Theses database (UMI No. 3619394).

Stickl, J. (2017). *The need to belong: An exploration of belonging among urban middle school students.* https://pdfs.semanticscholar.org/8262/17623777d7cc47000505f391185787dd06d3.pdf

Thompson, R. A., & Wyatt, J. M. (1999). Current research on child maltreatment: Implications for educators. *Educational Psychology Review*, *11*(3), 173–201. https://doi.org/10.1023/A:1021961100308

Tudge, J., & Rosa, M. E. (2013). Urie Bronfenbrenner's theory of human development: Its evolution from ecology to biocology. *Journal of Family Theory & Review*, *5*(4), 243–258. https://doi.org/10.1111/jftr.12022

UNICEF. (n.d.). *Convention on the Rights of the Child: The children's version.* https://www.unicef.org/child-rights-convention/convention-text-childrens-version

Uslu, F., & Gizir, S. (2017). School belonging of adolescents: The role of teacher-student relationships, peer relationships, and family involvement. *Educational Sciences: Theory & Practice*, *17*(1), 63. https://doi.org/10.12738/estp.2017.1.0104

Wallace, T. L., Ye, F., & Chhuon, V. (2012). Subdimensions of adolescent belonging in high school. *Applied Developmental Science*, *16*(3), 122–139. https://doi.org/10.1080/10888691.2012.695256

Wang, M. T., & Sheikh-Khalil, S. (2014). Does parental involvement matter for student achievement and mental health in high school? *Child Development*, *85*(2), 610–625. https://doi.org/10.1111/cdev.12153

Weissbourd, R., Bouffard, S. M., & Jones, S. M. (2013). School climate and moral and social development. In T. Dary & T. Pickeral (Eds.), *School climate: Practices for implementation and sustainability. A school climate practice brief.* (pp. 1–6). National School Climate Centre.

Williams, S., Schneider, M., Wornell, C., & Langhinrichsen-Rohling, J. (2018). Student's perceptions of school safety: It is not just about being bullied. *The Journal of School Nursing*, *34*(4), 319–330. https://doi.org/10.1177/1059840518761792

Woolley, M. E., & Bowen, G. L. (2007). In the context of risk: Supportive adults and the school engagement of middle school students. *Family Relations*, *56*, 92–104. https://doi.org/10.1111/j.1741-3729.2007.00442.x