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Teacher–Student Relationships and Personalized Learning: Implications of Person and Contextual Variables

Ronald D. Taylor and Azeb Gebre

Personalized learning involves instruction that is differentiated and paced to the needs of the learner and shaped by the learning preferences and interests of the learner. In personalized learning environments, “the learning objectives and content as well as the method and pace may all vary” (U.S. Department of Education, 2010, para. 13). Important in constructing personalized learning environments is an understanding of the developmental needs and functioning of the learner and the environments and social forces that help shape the learners’ experiences and adjustment.

In personalized learning, competency aims are held constant across learners, and learning needs, pacing, instructional practice, and teaching strategies may vary as a function of the learner. Personalized learning is meant to enhance students’ motivation and engagement by increasing their autonomy and self-direction. Redding (2013) suggests that personalized learning also involves the teacher’s relationship with students and their parents and the awareness of their needs and resources. Personalized learning includes teachers’ awareness of students’ needs and attributes in order to scaffold their learning to foster their self-direction and self-efficacy and enhance their social and emotional competencies.

Bronfenbrenner’s Model of Human Development

Urie Bronfenbrenner’s theory of child development (Bronfenbrenner & Morris, 2006) informs our conceptualization of personalized learning by identifying important attributes in students, key social relationships, and primary social contexts that influence their social, emotional, and physical well-being. Bronfenbrenner’s theory has had a profound influence on research and practice in the U.S. and around the world. Bronfenbrenner’s work (Bronfenbrenner, 1979; Bronfenbrenner & Morris, 2006) has provided a comprehensive conceptual rationale of how central social contexts in a child’s life interact and influence key outcomes, including social and emotional adjustment and school performance and engagement. Bronfenbrenner maintains that human development takes place through complex interactions between an active and evolving human organism and the

persons and objects in the surrounding environment. The nature of the interactions (e.g., their form, power, content, direction) that influence development may vary based on attributes of the developing person, the environment, and the areas of development that are evolving at the time. The model may help inform creation of the personalized learning environment because it helps identify (a) the central social interactions important to development and learning called *process variables* (e.g., parent–child, teacher–child interactions), (b) the role students’ characteristics play in their development called *person variables* (e.g., gender, age, health, intelligence, temperament), (c) the importance of the environments the child inhabits called *context variables* (e.g., home, school, culture), and (d) the influence of time and developmental change called *time variables* (e.g., significant historical events, pubertal development). The present chapter is guided by Bronfenbrenner’s conceptual model and addresses important knowledge and information that agents such as teachers and administrators should have in creating personalized learning experiences for their students.

Students’ Developmental Needs and Adjustments

According to Redding (2013), an important feature of personalized learning is teachers’ awareness of the attributes, needs, and resources of their students. Bronfenbrenner’s bioecological model (Bronfenbrenner & Morris, 2006) is useful in application to personalized learning because it explains the interactions that students experience that help direct and shape their development and learning. Bronfenbrenner suggests that students learn and develop through their person-to-person interactions with parents, teachers, and peers, and through the influence of their personal characteristics (e.g., personality, intelligence, gender). Students’ behavior and development are also influenced by the social environments they inhabit (family, neighborhood, school) and the particular historical time when they live. Students’ development and learning are then shaped by the factors in Bronfenbrenner’s model, including process, person, context, and time variables. These components of Bronfenbrenner’s model help explain how children learn and develop, the importance of their individual traits and attributes, and the role of the social environments they inhabit in shaping their learning and adjustment.

Process

Bronfenbrenner argues that development takes place as a result of *processes* consisting of complex, reciprocal interactions among the persons, objects, and symbols in the immediate environment. These interactions are also embedded in a larger context that plays a significant role in development. Effective interactions are those that take place regularly and over an extended period of time. The interactions are labeled *proximal processes*. Examples of proximal processes include parent–child activities, teacher–child interactions, and instruction and participation in educational activities. In teacher–student relations, proximal processes may involve instructional time and the creation of relations that promote student discovery and competence. Proximal processes are crucial experiences and represent the space where teachers and student interact to move learning forward. Bronfenbrenner also maintains that the “form, power, content, and direction of the proximal processes effecting development” are influenced by the characteristics of the developing *person*, the environmental *context*—both immediate and more distal—and the *time* (e.g., developmental period, amount of time, historical time; Bronfenbrenner & Morris, 2006, p. 798). From the standpoint of personalized learning, the model suggests

that the degree to which personalized learning can take place depends on the quality of teacher–student interactions and on whether a student’s characteristics, living situation, and stage of development (e.g., person, context, and time as variables) are part of his or her personalized learning plan.

Person

In line with the aims of personalized learning to accommodate the differentiated needs and preferences of the learner, the bioecological model suggests that understanding significant person or dispositional variables that individuals possess can help shape and inform the creation of effective environments for students. From the perspective of key aspects of the person, gender and temperament represent two salient characteristics that may have important implications for producing contexts that are individualized to enhance students’ competence and adjustment.

Gender

Bronfenbrenner and Morris (2006) note that expectations and perceptions regarding a child’s gender may affect important developmental processes and experiences. Among school-aged children, parents expect sons to find science easier and more interesting than daughters despite no differences in performance (Tenenbaum & Leaper, 2003). Parents’ stereotyped views of differences in boys’ and girls’ abilities in English, math, and sports are linked to both children’s performance and self-perceptions of ability (Fredricks & Eccles, 2002). Children’s genders also influence their interactions in school. Throughout the school years, teachers interact and attend more to boys than girls (Ruble, Martin, & Berenbaum, 2006). Teachers also believe that elementary school boys are better at math and science than girls (Tiedemann, 2000). In elementary school, teachers tend to call on boys more than girls but call on boys and girls equally when they volunteer answers (Altermatt, Jovanovic, & Perry, 1998). Teacher’s sex-differentiated responses are most pronounced in elementary school and less evident in high school.

Clearly, in line with the bioecological model, gender as a person variable helps shape children’s experiences in the classroom and represents an important attribute in the teacher–student relationship to consider in creating individualized learning experiences. It may be important to consider gender in the nature of how lesson plans are constructed and where teachers’ instruction and attention are directed in the classroom.

Temperament

Temperament represents an additional person variable that may influence students’ adjustment and experiences in the classroom. Temperament represents individual differences in reactivity and self-regulation and is determined by inborn physiological mechanisms (Rothbart & Bates, 2006). Reactivity includes a range of responses including but not limited to fear, anger, positive affect, and orienting or negative emotionality. Self-regulation includes processes such as effortful control and modulation aimed at monitoring or controlling reactivity. Studies of temperament have examined direct effects in which temperament traits are linked to adjustment behavior. Research has also examined indirect effects in which the effects of temperament on adjustment are moderated by their association with some additional variable. Findings of direct effects revealed that a difficult temperament (negative emotionality) was associated with externalizing and internalizing problems. For instance, whereas anger, impulsiveness, and low self-regulation

were linked to externalizing problems, sadness and low impulsivity were associated with internalizing problems in middle childhood (Eisenberg et al., 2000). The need to address students' problem behavior may be detrimental to instructional time and class climate. Negative emotionality has also been linked to aggression, guilt, help seeking, and negativity (Rothbart, Ahadi, & Hershey, 1994). Although much of the work has focused on temperament and the links to negative adjustment, links to positive adjustment have shown that effortful control at ages 2 and 3 years predicted more advanced moral development at age 6 years (Kochanska & Knaack, 2003). Also, teacher and parent ratings of higher emotional and behavioral self-regulation were associated with lower acting-out behavior (Eisenberg et al., 1996).

Evidence of the indirect effects of temperament is especially noteworthy because it illustrates how a child's temperament and social context may act together to produce important outcomes. For example, a theme across investigations indicates that the links between difficult temperament and poor adjustment are less evident in more effective contexts. For instance, the association of children's dysregulation with externalizing problems in the classroom was less apparent for children whose mothers were more skilled at administering discipline (Stoolmiller, 2001). Similarly, the positive association of children's resistance to control with externalizing problems was more evident for children whose parents were low in control in the home (Bates, Pettit, Dodge, & Ridge, 1998). Among elementary school children, the negative association of externalizing behavior with children's agreeableness was less likely among parents who administered angry discipline (Prinz et al., 2003). Morris et al. (2002) found that the association of children's irritability with externalizing problems was stronger for children whose mothers were overtly hostile. More irritable children displayed an increase in internalizing problems when mothers displayed covert hostility and intrusive control over their children's feelings. An important implication of these findings is that effective social environments that teachers create may moderate behavior in students that would otherwise be disruptive to their learning. These findings also suggest that, in the creation of personalized learning, it may be important for teachers to convey to parents the link between children's temperament, their family relations and parenting practices, and children's conduct in the classroom. Effective parenting in the home may increase the likelihood of better behavior in the classroom. Also, findings have shown that instruction on implementing effective parenting practices is fairly easy to incorporate into services offered to communities through schools (Brody, Yu, Chen, & Miller, 2014). Socialization behaviors known to be effective in the home (e.g., skilled discipline, firm and direct control) may be transferred and incorporated into the classroom.

The implications of the research for personalized learning experiences suggest that effective teacher–student relations and productive classroom climates may depend on the degree to which teachers understand the role and operation of key person variables. Teachers might consider beginning the school year with a survey of the students, assessing areas such as their self-concept (self-esteem, self-efficacy), resources in the homes, work habits, and parents' involvement in their school activities. By understanding how children's characteristic behaviors may be evident in the classroom and the role of students' experiences at home, teachers may be able to create classroom environments that increase the likelihood of effective behaviors.

Contexts

According to the bioecological model, students' behavior is strongly influenced by forces in the social environments they inhabit. In the creation of personalized learning, understanding the links between students' formative social experiences and their behavior appears essential. In the bioecological model, contexts consist of important environments that students and teachers inhabit and are organized and conceptualized into separate systems, including the microsystem, mesosystem, exosystem, and macrosystem (Bronfenbrenner & Morris, 2006).

Microsystems

Microsystems consist of the most immediate contexts in which a child may reside, such as the family, peers, school, or neighborhood. In managing teacher–student relations, teachers may be able to capitalize on student's experiences in other contexts by incorporating relevant behaviors, interactions, or experiences in some manner in the classroom. The nature and quality of relations that children have at home or among their peers have been shown to carry over and influence their behavior in school.

Home environment. One way that families influence children's behavior is through the parenting style present in the home. Parenting style reflects parent's goals and strategies in child-rearing. There is a preponderance of evidence showing a strong link between parenting style and academic performance (Amato & Fowler, 2002; Boon, 2007; Steinberg, Lamborn, Dornbusch, & Darling, 1992; Steinberg, Mounts, Lamborn, & Dornbusch, 1991; Turner, Chandler, & Heffer, 2009). Children and adolescents who live in authoritative parenting households, characterized by high levels of warmth and responsiveness and demandingness and firm control, fare better academically than those from authoritarian or permissive parenting homes. For example, Steinberg and colleagues (1991) found that, compared with their nonauthoritatively reared peers, adolescents from authoritative homes earned higher grades in school, were more self-reliant, and reported less psychological distress. Adolescents exhibit healthier psychosocial development and higher academic competence when they perceive that their parents grant more psychological autonomy, stay actively engaged in their lives, and establish firm standards for behavior (Gray & Steinberg, 1999).

Parents and schools. Parents can also exert an impact on their children's school performance through their direct involvement with school activities, such as supervising and helping with schoolwork, attending parent–teacher conferences, offering encouragement for success, and establishing high expectations for achievement (Astone & McLanahan, 1991; Hill et al., 2004; Hill & Tyson, 2009; Steinberg et al., 1992). Parental involvement at school has been associated with higher academic achievement (Lee & Bowen, 2006). Studies of young children have shown that parent–child educational interaction at the home significantly contributes to children's cognitive development. Englund, Luckner, Whaley, and Egeland (2004) found that the quality of instruction parents provided for their children in problem-solving situations before school entry explained a significant amount of the variance in child's IQ and indirectly affected achievement in the first and third grade. Similarly, parenting behaviors that stimulate reading and constructive play and provide emotional support have been shown to promote academic achievement in young children (Davis-Kean, 2005).

For teachers, the home environment and parenting practices have important implications for creating personalized learning environments for students. Students' school performance is in part a reflection of their experiences in the home. Knowing more about children's home lives and experiences may provide teachers direction in shaping learning contexts that fit the particular needs of their students. For example, students from authoritative and authoritarian homes may approach their schoolwork differently and perform best in the context of separate kinds of instructional strategies. For example, teachers might capitalize in the classroom on the autonomy and initiative students from authoritative homes are encouraged to display. Students from authoritative homes might serve as models of self-directed behavior and initiative for students from authoritarian homes where autonomy and independence are discouraged.

Peer relationships. Peer interactions provide another important context for intellectual and socioemotional development. Researchers have long suggested that close and harmonious relationships with peers can enhance children and adolescents' social and academic adjustment. The development and maintenance of friendships have been shown to influence perceived competence (Buhrmester, 1990), self-esteem (Keefe & Berndt, 1996), and academic performance (Liem & Martin, 2011; Wentzel & Caldwell, 1997). In early education, whereas children with the most number of friends in the classroom report gains in school performance over time, those who are rejected by their peers show less favorable attitudes, avoidance, and lower levels of performance (Ladd, 1990). The relationship between academic achievement and peer popularity has also been documented among elementary school students. For example, Austin and Draper (1984) reported that children in Grades 3 through 6 who were most accepted by their peers were also those who performed at the highest levels in their schoolwork. Academic goals and motivations are affected by interactions with peers. One study of grade school children revealed that friends are more similar on dimensions of self-efficacy, motivation, academic standards, and preference for challenging work than nonfriends (Altermatt & Pomerantz, 2003). Activities in the classroom that integrate skill-building activities with those that support students' interpersonal skills (e.g., effective communication skills, conflict resolution strategies) may benefit peer relations and school performance. Providing students with opportunities to take on leadership roles may also be one way teachers could build students' self-confidence and social skills and enhance peer relations. Teachers with a clearer understanding of peer relations in their classroom may be in a better position to influence the social dynamics in ways to create effective, personalized learning environments for their students.

Mesosystem

The mesosystem consists of processes and linkages taking place between or among two or more of the settings in which children interact (e.g., family–school, peers–family, neighborhood–peers). Understanding how mesosystems operate may be the most important application of the bioecological model to the creation of personalized learning environments for students. The mesosystem is essentially a system of microsystems and illuminates the ways in which these contexts typically are integrated and act together to influence children's behavior.

School and home. Evidence has revealed clear linkages between the home and school. In a study of parents' involvement in inner-city elementary and middle schools, Dauber

and Epstein (1993) found that parents were more likely to be involved in their children's education if they perceived that schools had strong practices to involve parents at school and at home on homework and reading activities. When parents perceived that the schools were doing little to involve them, they reported doing little at home. Parents who were more involved tended to have children who performed well in school. Sheldon, Epstein, and Galindo (2010) assessed the effects of activities designed to promote family involvement and the links to school levels of math achievement. They found that better implementation of math-related practices to enhance family involvement predicted stronger support from parents for schools' partnership programs. Strong support, in turn, predicted students' performance on math achievement tests. The most effective activities implemented by schools to promote parents' involvement included family math nights, volunteer math aides, and math projects involving family partners. Schools that reported more positive partnership climates had higher levels of math achievement. Evidence also suggests that, by fostering a strong partnership with families, schools can also lower student absenteeism (Epstein & Sheldon, 2002). In creating personalized learning for students, this work suggests that there are reciprocal relations between teachers' practices and other key environments such as the home. Thus, teachers can expect that effective, personalized learning may positively affect parents' involvement with their students' schooling. As the research has shown, increased parental involvement may support teachers' practices in school, including creating personalized learning environments. It may be helpful for teachers to obtain information directly from students and their parents on family relations and parental support and involvement in students' academic development (e.g., help with schoolwork, trips to museums, use of tutors). Short surveys in the classroom and during back-to-school nights may help teachers understand students' strengths and weaknesses and needs in the classroom. Teachers might also consider organizing activities (e.g., potluck dinner, picnics, fundraising activities, school repair projects) designed to help get to know their students and involve and inform parents regarding students' schooling. Through frequent contact with parents, via phone or email, teachers can foster supportive parent–teacher relations.

Also, emerging research suggests that supportive school environments may buffer against the negative effects of adverse home experiences. O'Malley, Voight, Renshaw, and Eklund (2015) examined the moderating effects of school climate on the relation between family structure and academic performance. The authors found that, regardless of family structure (i.e., two-parent, one-parent, foster-care, homeless households), students with more positive school climate perceptions reported higher GPAs. It has also been documented that children at risk for school failure who experience more caring and supportive relationships with teachers express greater satisfaction with school than children at risk for school failure who do not have such support (Baker, 1999). Students who are most academically and socially competent are those who experience an authoritative teaching style with consistent classroom management, support for students' autonomy, and personal interest in students (Walker, 2008). Mesosystem influences provide some of the clearest examples of the potential of how teacher–student relations may intersect with other social contexts (home) in ways that are relevant to students' personalized learning. Findings on mesosystem influences highlight the importance of understanding how key social environments (home, school, peers) and social relationships have implications for students' personalized learning and behavior in the classroom.

Exosystem

Beyond the proximal contexts of the microsystems and mesosystem, the exosystem consists of the linkages and processes between settings in which the child does not directly interact but that nonetheless may play a significant role in the child's adjustment. These contexts include the parent's workplace, neighborhood or community contexts, and family social network. In the same manner that relations at home may be reflected in the classroom, events and interactions in social contexts students do not inhabit may have implications for their schooling.

Working mothers. Evidence from a large number of studies has shown that maternal employment early in a child's life is linked to children's cognitive and socioemotional well-being later. For example, maternal employment before a child's ninth month was linked to negative cognitive outcomes at age 36 months and poor cognitive and behavioral outcomes at first grade (Brooks-Gunn, Han, & Waldfogel, 2010). In contrast, positive links between maternal employment during the first year and children's later functioning have been obtained for low-income families (Coley & Lombardi, 2013). Recent findings suggest that the discrepancy in the effects of maternal employment may have to do with the quality of the mother's work and the implications for family life. Thus, maternal employment in high-quality, stable work during early childhood was linked to enhanced cognitive and behavioral skills at 9 years (Lombardi & Coley, 2013). Other research suggests that the processes at work may include that stable employment enhanced the mother's psychological well-being, which in turn supports children's functioning over time (Conger et al., 1992). Parents in unstable or stressful work conditions may be less actively involved in their children's educational activities because of strain and difficult work schedules. These findings are important for teachers in that the impact of mothers' poor work experiences appear to be manifest in children's conduct in the classroom. Stressful work experiences appear to negatively impact family life, and children's experiences at home may transfer to the classroom. It is important for teachers to be aware of the diverse family backgrounds students come from. Parents may become disengaged from their children's education because of external stressors or merely lack of time. If teachers are aware of these challenges, they may be able to make accommodations in scheduling events and the use of time and resources. For instance, events might be scheduled at times when these parents are more readily available. Also, strategies and resources for time management (tutoring and after-school programs on weekends) to increase parental involvement in schooling might be discussed at parent-teacher conferences.

Neighborhoods. Studies of the links between neighborhoods and children's functioning have considered the effects of safety and resources, among others. Research has shown that caregivers who perceive their neighborhoods as unsafe may display lower positive parenting, including lower warmth and control and monitoring of children (Chung & Steinberg, 2006; Gayles, Coatsworth, Pantin, & Szapocznik, 2009). Evidence suggests that parents in dangerous neighborhoods may be chronically stressed, and their stress may in turn affect their parenting and children's adjustment (McLoyd, 1990). In contrast, other studies revealed positive links between safety concerns and positive parenting behavior (Jones, Forehand, O'Connell, Armistead, & Brody, 2005). This work suggests that parents may increase their positive parenting to offset and protect their children from danger in the neighborhood. Research has also assessed the link between neighborhood resources

and family functioning. Findings have shown that the more parents perceived their neighborhood was devoid of economic and institutional resources, the less they engaged in positive parenting (Taylor, 2000). One explanation for this finding may be that the lack of access to economic and institutional resources may expose parents to increased stress and health problems, which may in turn compromise parenting practices and negatively affect students' adjustment and school performance (Cuellar, Jones, & Sterrett, 2015). Anxieties that parents and children feel about dangerous living conditions may make their way into the classroom. Schools in high-risk neighborhoods often have relationships with important social agents, including neighborhood and parent associations, businesses, and police, to enhance children's safety both inside and outside school (Taylor, 2000). Personalized learning in some circumstances may include understanding children's experiences and reactions to the challenges of their living conditions and the development of effective coping strategies for students and their school.

Family social network. An additional context in the exosystem that has been linked to children's adjustment is family social network. A key social context for families is the extended family. Across ethnic groups, families rely on kin for a variety of forms of support, including social and financial assistance and help with child care (Sarkisian & Gerstel, 2004). For example, Sarkisian and Gerstel (2004) found that African American and White families were both involved with kin but engaged extended family in different areas. Blacks tended to be more involved with kin in practical support (e.g., help with transportation, child care, housework), and Whites were more involved in financial and emotional support. Support from kin is especially important for low-income African American families that may rely on kin extensively. Evidence has shown that more than half of poor African American women living in urban areas interact with kin regularly as primary members of their social networks and rely on extended family for important functions, including child care, household tasks, and financial assistance (Jarrett, Jefferson, & Kelly, 2010). Kin support has also been linked to African American parents' emotional well-being (Budescu, Taylor, & McGill, 2011; Ceballo & McLoyd, 2002; Taylor, 2011; Taylor & Roberts, 1995), adolescents' adjustment (Lamborn & Nguyen, 2004; Taylor, 1996), and parents' child-rearing practices (Ceballo & McLoyd, 2002; Taylor, 1996; Taylor, Seaton, & Dominguez, 2008).

The findings on kin relations and other exosystem variables have direct implications for personalized learning and teacher–student relations. Findings have shown that kin social support may promote parenting practices that include family routine and parental involvement in schooling. Family routine and parental involvement in schooling in turn appear to promote effective attitudes and behavior in the classroom, including higher engagement and improved performance (Taylor, 1996; Taylor & Lopez, 2005). Among some segments of their students and communities, teachers and administrators may find it particularly helpful to engage extended family in school functions as a means of promoting family involvement and student achievement. For teachers in particular, it may be important to understand the family relations of their students. Among some students, extended family may play a primary role in students' socialization, and for others, the absence of support from kin may be at the root of dysfunctional behavior.

For teachers, understanding the social contexts in which their students live and the social resources and challenges they face may help shape teachers' personalized learning strategies. For example, for a teacher in a school serving an economically disadvantaged

community with a majority of working mothers and extensive family social networks, personalized learning may address known challenges to student functioning (e.g., mothers' poor-quality, stressful employment) and capitalize on available positive resources (e.g., access to kin social support). It may also be helpful for teachers in at-risk communities to incorporate into the curriculum topics including effective stress management, conflict resolution, and effective communication and interpersonal skills.

Macrosystems

Additional contextual variables in the bioecological model relevant to constructing personalized learning for students are the macrosystems, which represent the broader cultural and subcultural systems that help shape relations in microsystems, mesosystems, and exosystems. Macrosystems comprise the belief systems, customs, lifestyles, material resources, and opportunities that help shape interactions across social contexts. The macrosystem may be characterized as the societal blueprint (Bronfenbrenner, 1994).

Socioeconomic status. A primary context in the macrosystem for families consists of their socioeconomic status and financial resources. To the degree that families have significant financial and material resources, they tend to function well. However, family economic pressure from having unmet material needs, having unpaid debts, or having to make difficult economic cutbacks is linked to poorer functioning in families. Conger and associates (Conger & Donnellan, 2007; Conger et al., 1992; Conger, Ge, Elder, Lorenz, & Simons, 1994) have shown that economic pressure in the home has a detrimental effect on family relations and children's adjustment. Parents in economically distressed homes tend to be psychologically distressed, and distressed parents are more likely to interact poorly with one another and display harsh and inconsistent parenting with their children. Harsh and inconsistent parenting in turn is linked to emotional and behavioral problems and lower competence in children and adolescents. The applied implications of this work to students' personalized learning and teacher–student relations are important. As the U.S. economy recovers from the latest recession, there is concern that restructuring in the labor market may take place with a permanent loss of some jobs (Rothstein, 2014). Changes in the labor market may create economic insecurity and pressure on families. The fallout for schools in many communities may be the need to cope with fewer resources because of a shrinking tax base and the need to accommodate students from a growing number of economically insecure homes. It may be increasingly important for teacher–student relations to be informed by an understanding of the economic and social forces operating on students and their families. Schools facing both short-term and more chronic economic crises in their communities may need to adopt practices aimed at addressing the needs of students and families, including school-based health services; emergency food pantries; school materials and clothes; and after-school, extended day, and summer programs. It may also be important to consider whether school curricula are best structured to help students address the future.

Time

An additional contextual parameter with implications for teacher–student relations and personalized learning is the variable of time. Bronfenbrenner suggests that an important feature of relationships is the amount of unbroken time spent in interaction. Longitudinal studies have shown that stability and steadiness in children's living conditions—including responsive adults, family routine, and stable child care and school arrangements—were

related to greater cognitive and social competence in adolescence and adulthood (Pulkkinen & Saastamoinen, 1986; Wachs, 1979). Similarly, family routine, organization, and structure were linked to students' school engagement and achievement (Taylor, 1996; Taylor & Lopez, 2005).

Historical time also represents a dimension of time relevant to student's adjustment in school. Elder (1998) notes that individuals are “shaped by the historical times and places they experience over their lifetime (p. 3). Findings have shown that the historical events experienced at particular developmental periods may have a profound impact on an individual's functioning. For example, Elder (1974) found that adolescents whose families experienced severe income loss during the Great Depression fared better than their nondeprived peers in terms of later life satisfaction. Boys and girls from economically deprived families who committed themselves to helping their families through difficult times also developed practices, goals, and aspirations benefitting them in the future. For teachers and the creation of personalized learning for students, these findings suggest the importance of how students occupy their time. Students appear to do best in structured, stable environments both at home and school. These findings also suggest that in teacher–student relations, important goals may be to help students understand the meaning and implications of historical events of their time and to help them develop the drive and capacity to adapt to the challenges they may experience.

Summary and Conclusions

The creation of personalized learning environments involves understanding the needs, preferences, and experiences of individual learners. From the perspective of teacher–student relationships, the bioecological model provides a conceptual framework from which to organize and rationalize information to structure personalized learning for students. The model suggests that at the most basic level, the *process* of learning and development takes place through teacher–student interactions in the classroom. Personalized relations and interactions in the course of instruction and the climate of the classroom are the means through which progress moves forward. The teacher–student relationship within personalized learning also requires understanding features of the *person* (e.g., gender, race, temperament). Differences based on gender or temperament may shape how students function in the classroom and may benefit from the input and attention of teachers. The model also highlights the diverse ways in which the various *contexts* in which students reside should be considered in creating personalized learning. Families, peers, schools, or neighborhoods may be resources or impediments to students' learning, and none of the contexts operates in isolation. Teacher–student relations are invariably influenced by how families, peers, and neighborhoods interact and operate together. It is also crucial to recognize that students' functioning is significantly affected by events and activities in the contexts in which they do not directly interact (e.g., parents' work or social networks) and the world that surrounds them (e.g., global and national economies). Finally, *time* is an element in students' learning in complex ways. Students need time to learn, and thus basic instructional time is an important element to consider. Historical time is also a crucial force operating on teachers and students and their relations. Historical events and technological innovations taking place at a particular point in time represent challenges which teachers are uniquely positioned to help students address.

Action Principles for States, Districts, and Schools

Action Principles for States

- a. Ensure that there is equity (e.g., gender, racial, economic) in access to best policies and practices to enhance student engagement and achievement.
- b. Invest resources to enhance access to technological innovation in schools and communities.
- c. Partner with local governments and school districts to establish context-driven ordinances to promote and enhance school and community safety.
- d. Locate comprehensive family resource centers in at-risk communities for the administration of services (adult education and literacy, employment training, mental and physical health, parent training).
- e. Establish regular assessment of the evolving needs of communities (e.g., social, economic, technological) and the effectiveness of the services provided.

Action Principles for Districts

- a. Assess and match the curricular needs and preferences of local communities and school districts with the appropriate available options.
- b. Partner with local stakeholders and universities to increase student access to educational innovation.
- c. Identify unique and common needs across schools and communities (crime prevention, safety, access to services) and develop integrated strategies.
- d. Coordinate the services of stakeholders and agencies (e.g., employers, schools, police, social services) in the communities to meet the broader needs of schools and communities.
- e. Consult with parents, schools, districts, and prevailing scientific evidence on the effective organization of time in school (e.g., start time, length of day, length of school year).

Action Principles for Schools

- a. Devote regular in-service educational opportunities to understanding the role of students' attributes (e.g., gender, ethnicity, class) and ecological systems in students' education.
- b. Develop opportunities to enhance parental involvement and engagement with school and teacher's awareness of the links between children's experiences at home and performance in school (e.g., fundraising, mentoring, advisory boards).
- c. Partner with relevant stakeholders, including parents, employers, police, and social service agencies, to identify the community's resources (e.g., sports teams, recreational activities, open space) and challenges (e.g., crime, safety, health care, nutrition) and increase awareness that each social agent has a role in teacher–student experiences and relations.
- d. Assess and monitor how issues of equity (gender, racial, economic) are manifest in school in student engagement and achievement.

- e. Host regular events aimed at developing information on prevailing social forces at work in students' communities (e.g., parenting practices, family structure, economic opportunities, unemployment, homelessness, gentrification) and how they may impact student adjustment and behavior in the classroom.

References

- Altermatt, E. R., Jovanovic, J., & Perry, M. (1998). Bias or responsivity? Sex and achievement-level effects on teachers' classroom questioning practices. *Journal of Educational Psychology, 90*(3), 516–527.
- Altermatt, E. R., & Pomerantz, E. M. (2003). The development of competence-related and motivational beliefs: An investigation of similarity and influence among friends. *Journal of Educational Psychology, 95*(1), 111.
- Amato, P. R., & Fowler, F. (2002). Parenting practices, child adjustment, and family diversity. *Journal of Marriage and Family, 64*(3), 703–716.
- Astone, N. M., & McLanahan, S. S. (1991). Family structure, parental practices, and high school completion. *American Sociological Review, 56*(3), 309–320.
- Austin, A. M. B., & Draper, D. C. (1984). The relationship among peer acceptance, social impact, and academic achievement in middle childhood. *American Educational Research Journal, 21*(3), 597–604.
- Baker, J. A. (1999). Teacher–student interaction in urban at-risk classrooms: Differential behavior, relationship quality, and student satisfaction with school. *The Elementary School Journal, 100*(1), 57–70.
- Bates, J. E., Pettit, G. S., Dodge, K. A., & Ridge, B. (1998). The interaction of temperamental resistance to control and restrictive parenting in the development of externalizing behavior. *Developmental Psychology, 34*(5), 982–995.
- Boon, H. J. (2007). Low- and high-achieving Australian secondary school students: Their parenting, motivations, and academic achievement. *Australian Psychologist, 42*(3), 212–225.
- Brody, G. H., Yu, T., Chen, E., & Miller, G. E. (2014). Prevention moderates association between family risks and youth catecholamine levels. *Health Psychology, 33*(11), 1435–1439.
- Bronfenbrenner, U. (1979). *The ecology of human development: Experiments in nature and design*. Cambridge, MA: Harvard University Press.
- Bronfenbrenner, U. (1994). Ecological models of human development. In T. Husen & T. N. Postlethwaite (Eds.), *International encyclopedia of education* (2nd ed., Vol. 3, pp. 1643–1647). Oxford, England: Pergamon Press/Elsevier Science.
- Bronfenbrenner, U., & Morris, P. A. (2006). The bioecological model of human development. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology, Vol. 1: Theoretical models of human development* (6th ed., pp. 793–828). New York, NY: John Wiley.
- Brooks-Gunn, J., Han, W., & Waldfogel, J. (2010). First-year maternal employment and child development in the first 7 years. *Monographs of the Society for Research in Child Development, 75*(2), 144–145.
- Budescu, M., Taylor, R. D., & McGill, R. K. (2011). Stress and African American women's smoking/drinking to cope: Moderating effects of kin social support. *Journal of Black Psychology, 37*(4), 452–484.
- Buhrmester, D. (1990). Intimacy of friendship, interpersonal competence, and adjustment during preadolescence and adolescence. *Child Development, 61*(4), 1101–1111.
- Ceballos, R., & McLoyd, V. C. (2002). Social support and parenting in poor, dangerous neighborhoods. *Child Development, 73*(4), 1310–1321.
- Chung, H. L., & Steinberg, L. (2006). Relations between neighborhood factors, parenting behaviors, peer deviance, and delinquency among serious juvenile offenders. *Developmental Psychology, 42*(2), 319–331.

- Coley, R. L., & Lombardi, C. M. (2013). Does maternal employment following childbirth support or inhibit low-income children's long-term development? *Child Development, 84*(1), 178–197.
- Conger, R. D., Conger, K. J., Elder, G. H., Jr., Lorenz, F. O., Simons, R. L., & Whitbeck, L. B. (1992). A family process model of economic hardship and adjustment of early adolescent boys. *Child Development, 63*(3), 526–541.
- Conger, R. D., & Donnellan, M. B. (2007). An interactionist perspective on the socioeconomic context of human development. *Annual Review of Psychology, 58*, 175–199.
- Conger, R. D., Ge, X., Elder, G. H., Lorenz, F. O., & Simons, L. (1994). Economic stress, coercive family process, and developmental problems of adolescents. *Child Development, 65*(2), 541–561.
- Cuellar, J., Jones, D. J., & Sterrett, E. (2015). Examining parenting in the neighborhood context: A review. *Journal of Child and Family Psychology, 24*(1), 195–219.
- Dauber, S. L., & Epstein, J. L. (1993). Parents' attitudes and practices of involvement in inner-city elementary and middle schools. In N. F. Chavkin (Ed.), *Families and schools in a pluralistic society* (pp. 53–71). Albany, NY: State University of New York Press.
- Davis-Kean, P. E. (2005). The influence of parent education and family income on child achievement: The indirect role of parental expectations and the home environment. *Journal of Family Psychology, 19*(2), 294.
- Eisenberg, N., Fabes, R. A., Guthrie, I. K., Murphy, B. C., Poulin, R., & Shepard, S. (1996). The relations of regulation and emotionality to problem behavior in elementary school children. *Development and Psychopathology, 8*(1), 141–162.
- Eisenberg, N., Guthrie, I. K., Fabes, R. A., Shepard, S., Losoya, S., Murphy, B. C.,...Reiser, M. (2000). Prediction of elementary school children's externalizing problem behaviors from attentional and behavioral regulation and negative emotionality. *Child Development, 71*(5), 1367–1382.
- Elder, G. H., Jr. (1974). *Children of the great depression*. Chicago, IL: University of Chicago Press.
- Elder, G. H., Jr. (1998). The life course as developmental theory. *Child Development, 69*(1), 1–12.
- Englund, M. M., Luckner, A. E., Whaley, G. J., & Egeland, B. (2004). Children's achievement in early elementary school: Longitudinal effects of parental involvement, expectations, and quality of assistance. *Journal of Educational Psychology, 96*(4), 723.
- Epstein, J. L., & Sheldon, S. B. (2002). Present and accounted for: Improving student attendance through family and community involvement. *The Journal of Educational Research, 95*(5), 308–318.
- Fredricks, J. A., & Eccles, J. S. (2002). Children's competence and value beliefs from childhood through adolescence: Growth trajectories in two male-sex-typed domains. *Developmental Psychology, 38*(4), 519–533.
- Gayles, J., Coatsworth, J., Pantin, H., & Szapocznik, J. (2009). Parenting and neighborhood predictors of youth problem behaviors within Hispanic families: The moderating role of family structure. *Hispanic Journal of Behavioral Sciences, 31*(3), 277–296.
- Gray, M. R., & Steinberg, L. (1999). Unpacking authoritative parenting: Reassessing a multidimensional construct. *Journal of Marriage and the Family, 61*(3), 574–587.
- Hill, N. E., Castellino, D. R., Lansford, J. E., Nowlin, P., Dodge, K. A., Bates, J. E., & Pettit, G. S. (2004). Parent academic involvement as related to school behavior, achievement, and aspirations: Demographic variations across adolescence. *Child Development, 75*(5), 1491–1509.
- Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: A meta-analytic assessment of the strategies that promote achievement. *Developmental Psychology, 45*(3), 740.
- Jarrett, R. L., Jefferson, S. R., & Kelly, J. N. (2010). Finding community in family: Neighborhood effects and African American kin networks. *Journal of Comparative Family Studies, 41*(3), 299–328.

- Jones, D. J., Forehand, R., O’Connell, C., Armistead, L., & Brody, G. (2005). Mothers’ perceptions of neighborhood violence and mother-reported monitoring of African American children: An examination of the moderating role of perceived support. *Behavior Therapy, 36*(1), 25–34.
- Keefe, K., & Berndt, T. J. (1996). Relations of friendship quality to self-esteem in early adolescence. *The Journal of Early Adolescence, 16*(1), 110–129.
- Kochanska, G., & Knaack, A. (2003). Effortful control as a personality characteristic of young children: Antecedents, correlates, and consequences. *Journal of Personality, 71*(6), 1087–1112.
- Ladd, G. W. (1990). Having friends, keeping friends, making friends, and being liked by peers in the classroom: Predictors of children’s early school adjustment? *Child Development, 61*(4), 1081–1100.
- Lamborn, S. D., & Nguyen, D. G. T. (2004). African American adolescents’ perceptions of family interactions: Kinship support, parent-child relationships, and teen adjustment. *Journal of Youth and Adolescence, 33*(6), 547–558.
- Lee, J. S., & Bowen, N. K. (2006). Parent involvement, cultural capital, and the achievement gap among elementary school children. *American Educational Research Journal, 43*(2), 193–218.
- Liem, G. A. D., & Martin, A. J. (2011). Peer relationships and adolescents’ academic and non-academic outcomes: Same-sex and opposite-sex peer effects and the mediating role of school engagement. *British Journal of Educational Psychology, 81*(2), 183–206.
- Lombardi, C. M., & Coley, R. L. (2013). Low-income mothers’ employment experiences: Prospective links with young children’s development. *Family Relations, 62*(3), 514–528.
- McLoyd, V. (1990). The impact of economic hardship on Black families and children: Psychological distress, parenting, and socioemotional development. *Child Development, 61*(2), 311–346.
- Morris, A. S., Silk, J. S., Steinberg, L., Sessa, F. M., Avenevoli, S., & Essex, M. J. (2002). Temperamental vulnerability and negative parenting as interacting predictors of child adjustment. *Journal of Marriage and Family, 64*(2), 461–471.
- O’Malley, M., Voight, A., Renshaw, T. L., & Eklund, K. (2015). School climate, family structure, and academic achievement: A study of moderation effects. *School Psychology Quarterly, 30*(1), 142–157.
- Prinz, P., Onghena, P., Hellinckx, W., Grietens, H., Ghesquiere, P., & Colpin, H. (2003). The additive and interactive effects of parenting and children’s personality on externalizing behaviour. *European Journal of Personality, 17*(2), 95–117.
- Pulkkinen, L., & Saastamoinen, M. (1986). Cross-cultural perspectives on youth violence. In S. J. Apter & A. P. Goldstein (Eds.), *Youth violence: Programs and prospects* (pp. 262–281). New York, NY: Pergamon Press.
- Redding, S. (2013). Getting personal: The promise of personalized learning. In M. Murphy, S. Redding, & J. Twyman (Eds.), *Handbook on innovations in learning*. Philadelphia, PA: Center on Innovations in Learning, Temple University; Charlotte, NC: Information Age Publishing.
- Rothbart, M. K., Ahadi, S. A., & Hershey, K. L. (1994). Temperament and social behavior in childhood. *Merrill-Palmer Quarterly, 40*(1), 21–39.
- Rothbart, M. K., & Bates, J. E. (2006). Temperament. In W. Damon & R. Lerner (Series Eds.), & N. Eisenberg (Vol. Ed.), *Handbook of child psychology, Vol. 3. Social, emotional, and personality development* (6th ed., pp. 99–166). New York, NY: Wiley.
- Rothstein, J. (2014). *The great recession and its aftermath: What role for structural changes?* Paper presented at the Building Human Capital and Economic Potential Conference: Institute for Research on Poverty, University of Wisconsin, Madison, WI.
- Ruble, D. N., Martin, C., & Berenbaum, S. (2006). Gender development. In N. Eisenberg (Ed.), *Handbook of child psychology: Vol. 3, Personality and social development* (6th ed., pp. 858–932). New York, NY: Wiley.
- Sarkisian, N., & Gerstel, N. (2004). Kin support among Blacks and Whites: Race and family organization. *American Sociological Review, 69*(6), 812–837.

- Sheldon, B., Epstein, J. L., & Galindo, C. L. (2010). Not just numbers: Creating a partnership climate to improve math proficiency in schools. *Leadership and Policy in Schools, 9*(1), 27–48.
- Steinberg, L., Lamborn, S. D., Dornbusch, S. M., & Darling, N. (1992). Impact of parenting practices on adolescent achievement: Authoritative parenting, school involvement, and encouragement to succeed. *Child Development, 63*(5), 1266–1281.
- Steinberg, L., Mounts, N. S., Lamborn, S. D., & Dornbusch, S. M. (1991). Authoritative parenting and adolescent adjustment across varied ecological niches. *Journal of Research on Adolescence, 1*(1), 19–36.
- Stoolmiller, M. (2001). Synergistic interaction of child manageability problems and parent-discipline tactics in predicting future growth in externalizing behavior for boys. *Developmental Psychology, 37*(6), 814–825.
- Taylor, R. D. (1996). Kinship support, family management, and adolescent adjustment and competence in African-American families. *Developmental Psychology, 32*(4), 687–695.
- Taylor, R. D. (2000). An examination of the association of African-American mothers' perceptions of their neighborhood with their parenting and adolescent adjustment. *Journal of Black Psychology, 26*(3), 267–287.
- Taylor, R. D. (2011). Kin support and parenting practices among low income African American mothers: Moderating effects of mothers' psychological adjustment. *Journal of Black Psychology, 37*(1), 3–23.
- Taylor, R. D., & Lopez, E. I. (2005). Family management practice, school achievement and problem behavior in African American adolescents: Mediating processes. *Journal of Applied Developmental Psychology, 26*(1), 39–49.
- Taylor, R. D., & Roberts, D. (1995). Kinship support and parental and adolescent well being in economically disadvantaged African American families. *Child Development, 66*(6), 1585–1597.
- Taylor, R. D., Seaton, E., & Dominguez, A. (2008). Kinship support, family relations, and psychological adjustment among low-income African American mothers and adolescents. *Journal of Research on Adolescence, 18*(1), 1–22.
- Tenenbaum, H. R., & Leaper, C. (2003). Parent–child conversations about science: Socialization of gender inequities. *Developmental Psychology, 39*(1), 34–47.
- Tiedemann, J. (2000). Parents' gender stereotypes and teachers' beliefs as predictors of children's concept of their mathematical ability in elementary school. *Journal of Educational Psychology, 92*(1), 144–151.
- Turner, E. A., Chandler, M., & Heffer, R. W. (2009). The influence of parenting styles, achievement motivation, and self-efficacy on academic performance in college students. *Journal of College Student Development, 50*(3), 337–346.
- U.S. Department of Education. (2010). *Transforming American education: Learning powered by technology*. Retrieved from <http://tech.ed.gov/netp/learning-engage-and-empower/>
- Wachs, T. D. (1979). Proximal experience and early cognitive intellectual development: The physical environment. *Merrill-Palmer Quarterly, 25*(1), 3–42.
- Walker, J. M. (2008). Looking at teacher practices through the lens of parenting style. *The Journal of Experimental Education, 76*(2), 218–240.
- Wentzel, K. R., & Caldwell, K. (1997). Friendships, peer acceptance, and group membership: Relations to academic achievement in middle school. *Child Development, 68*(6), 1198–1209.