Interpersonal Relationships in Education

An Overview of Contemporary Research

Theo Wubbels, Perry den Brok,
Jan van Tartwijk and Jack Levy (Eds.)

INTERPERSONAL RELATIONSHIPS IN EDUCATION

ADVANCES IN LEARNING ENVIRONMENTS RESEARCH
Volume 3

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Scope

The historical beginnings of the field of learning environments go back approximately 40 years. A milestone in the development of this field was the establishment in 1984 of the American Educational Research Association (AERA) Special Interest Group (SIG) on Learning Environments, which continues to thrive today as one of AERA's most international and successful SIGs. A second milestone in the learning environments field was the birth in 1998 of *Learning Environments Research: An International Journal* (LER), which fills an important and unique niche.

The next logical step in the evolution of the field of learning environments is the initiation of this book series, *Advances in Learning Environments Research,* to complement the work of the AERA SIG and LER. This book series provides a forum for the publication of book-length manuscripts that enable topics to be covered at a depth and breadth not permitted within the scope of either a conference paper or a journal article.

The *Advances in Learning Environments Research* series is intended to be broad, covering either authored books or edited volumes, and either original research reports or reviews of bodies of past research. A diversity of theoretical frameworks and research methods, including use of multimethods, is encouraged. In addition to school and university learning environments, the scope of this book series encompasses lifelong learning environments, information technology learning environments, and various out-of-school 'informal' learning environments (museums, environmental centres, etc.).

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CONTENTS OF THE BOOK

This book is the third volume in a series reporting on advances in learning environments research. While the first two volumes dealt with 'outcomes-focused learning environments and its determinants and effects' (Aldridge & Fraser, 2008) and 'applications of Rasch measurement in learning environments research' (Cavanagh & Waugh, 2011), the present volume entirely focuses on the interpersonal aspect of the learning environment.

In 2010 on April 28-29, over 90 researchers and teacher educators from more than ten countries gathered in Boulder, Colorado, for the first *International Conference on Interpersonal Relationships in Education*: *ICIRE 2010*. Through keynote addresses by Jerome Freiberg (University of Houston), Kathryn Wentzel (University of Maryland at College Park), Walter Doyle (University of Arizona) and Theo Wubbels (Utrecht University), two roundtable, two poster, and six paper sessions, the participants exchanged research results and discussed the conference theme.

The invitation for the conference described the theme as follows:

Clearly, a positive teacher-student relationship strongly contributes to student learning. Educators, parents and students understand that problematic relationships can be detrimental to student outcomes and development. Productive learning environments are characterized by supportive and warm interactions throughout the class: teacher-student and student-student. Similarly, teacher learning thrives when principals facilitate accommodating and safe school cultures. A variety of research perspectives help explain how these constructive learning environment relationships can be developed and sustained. Contributions have come from educational and social psychology, teacher and school effectiveness research, and communication and language studies, among other fields. Recently, developments such as dynamic system theories have added often-spectacular directions to the topic. While the importance of interpersonal relationships in education has been appreciated for decades, research in this field is still young, with an increasing number of studies appearing in journals and books. Therefore, it is an appropriate time to

celebrate, evaluate and advance these efforts through a conference that focuses on the state of the field and avenues for future research.

The *ICIRE 2010* participants approached the conference theme from several different perspectives. This book includes a number of the conference presentations that demonstrate the breadth and depth of the contributions. The chapters are organized in three sections:
1. Those that primarily focus on individual students and how peers or teachers treat them;
2. Those in which relationships at the school level are central; and
3. Those that focus on the role of the teacher. Most of these chapters are based on teachers' or students' perceptions of teacher actions or teacher-students' relationships in class.

The first section begins with the keynote presentation by Kathryn Wentzel. The chapter focuses on student motivation and engagement for learning, with the teacher-student relationship as its precursor. Wentzel integrates many different theoretical perspectives and provides examples from empirical studies of adolescents' relationships with their teachers. The chapters by Spilt and Koomen, and Roorda, Koomen and Oort are closely connected. Both report on observational studies of interactions between kindergarten teachers and their students. Spilt and Koomen investigated teacher perceptions of teacher-student relationships, observed interactions for disruptive children and analyzed associations between the two. Roorda, Koomen and Oort, discuss whether observed interactions between teacher and children can be predicted from teachers' perceptions of the relationship. Finally, McGee reports on a study of teacher perceptions of bullying in elementary schools. As frequently noted, a teacher's role in and reaction to bullying has important implications for her/his relationship with students, especially at the primary level.

The second section examines relations at the school level, mostly among teachers and between teachers and principals. The chapter by Moolenaar, Daly and Sleegers examines relationships among teachers and how the interconnected patterns of associations affect school resource allocation. Price reports on a study on the relationships of principals and teachers and how positive attitudes can upgrade school climate. The next chapter by Georgiou and Kyriakides could have been placed in either the second or third sections, since it examines the impact of principal-teacher relationships as well as teacher-students relationships on student outcomes.

As noted, the last section of the book focuses primarily on teachers and their role in providing learning opportunities for students. Most of the chapters approach this theme by investigating teachers' or students' perceptions of teacher actions or teacher-students' relationships. The section opens with a chapter by Doyle and Rosemartin, based on Walter Doyle's keynote address. The authors analyze how curriculum influences instructional strategies in the context of teacher-student interpersonal relationships. They begin with the longstanding observation that

many curriculum innovations are not implemented in the classroom, an occurrence that highlights the essential role of the teacher. The next chapter, by Riley, Watt, Richardson and De Alwis, explores relationships between beginning teacher background variables such as unconscious motives, self-efficacy, role stress and teachers' burnout and their self reported use of aggressive techniques to cope with student disruptive behaviour. The section continues with a study by Fricke, Van Ackeren, Kauertz and Fisher on students' perceptions of their teachers' classroom management strategies. They investigate the relationship between K-12 students' perceptions and their interest and achievement in physics. The last three chapters focus on the use of the Questionnaire on Teacher Interaction (QTI) for measuring teacher-students' relationships. The QTI has served as a valid measure of teacher-student relationships for over two decades, and has been effectively utilized in over 20 countries. Telli and Den Brok report on the adaptation of the questionnaire to the Turkish language and context. The authors adapted the instrument across a wide student age range - from primary to higher education. Next, Maulana, Opdenakker, Den Brok and Bosker describe how the QTI was used to investigate the development of the teacher-student relationship in students' first year of secondary education. Examination of this context is particularly important since the transition from primary to secondary school can significantly affect students' perceptions of the learning environment. The final chapter by Wubbels, Brekelmans, Den Brok, Levy, Mainhard and Van Tartwijk, focuses on the theory, assumptions and conceptualization behind the original version of the Model for Interpersonal Teacher Behaviour and the QTI. After reflecting on some problematic issues of previous work, the authors analyze research on moment-to-moment interactions and teacher-students' relationships. They conclude with an outline of future developments in the field.

THEORETICAL PERSPECTIVES

As mentioned, this book reflects the many theoretical perspectives that have informed the study of interpersonal relationships in education. They include a developmental psychological view featuring (among others) models of attachment, as well as a perspective from general interpersonal theory and explanations from dynamic systems, social networks, school effectiveness, school and class climate, and class management. These conceptual frameworks are briefly described below.

Developmental Psychological Theory

In the opening chapter, Wentzel views the affective quality of teacher-student relationships as the central and critical motivator of student adjustment (Pianta, Hamre, & Stuhlman, 2003). The developmental psychological perspective is also presented in chapters by Roorda et al., Spilt and Koomen and McGee. As Wentzel notes, models that guide the study of child and adolescent development are derived from analyses of parent-child relationships that are thought to be experienced

through the lens of mental representations developed over time with respect to specific experiences (Bowlby, 1969; Laible & Thompson, 2007). Early representations of relationships with caregivers theoretically provide the foundation for interactions with people outside the family context, with the quality of parent-child relationships (i.e., levels of warmth and security) often predicting the quality of subsequent peer and teacher associations in early and middle childhood (Wentzel & Looney, 2007). The basic tenets of attachment theory (Bowlby, 1969; Bretherton, 1987) reflect this notion.

Other perspectives that have contributed to this literature describe teacher-student relationships along specific dimensions and provisions, as specified by models of parent-child interactions (e.g., Baumrind, 1971). In greater detail Wentzel (2004) described how teacher-student interactions along these dimensions can promote student motivation and subsequent performance. Derived from theoretical perspectives on person-environment fit and personal goal setting (e.g., Bronfenbrenner, 1989; Eccles & Midgley, 1989), she argues that school-related competence is achieved to the extent that students are able to accomplish goals that have personal as well as social value, in a manner that supports continued psychological and emotional well-being (Wentzel, this volume).

Interpersonal Theory

The research reported in several chapters (Roorda et al., Georgiou and Kyriakides, Telli and Den Brok, Maulana et al., Wubbels et al.) is founded on general interpersonal theory, often embedded in a systems approach to communication (Watzlawick, Beavin, & Jackson, 1967). Interpersonal theory originally offered a conceptual framework to describe and predict dyadic interactions between individuals (Kiesler, 1996; Sadler & Woody, 2003). The chapters cited above extend this model to teacher-class relationships. According to interpersonal theory (Leary, 1957), interactions can be described according to two dimensions: Control and Affiliation (see the Wubbels et al. chapter for a discussion of these terms). Control represents the degree of influence that one person applies to the partner in the interaction, with dominance at one end of the dimension and submissiveness at the other. Affiliation describes the degree of emotional immediacy, warmth, and support in the interaction, and ranges from friendliness to hostility (Gurtman, 2001; Kiesler, 1996). These dimensions are considered to be orthogonal (Sadler & Woody, 2003).

Roorda et al. (this volume) state that a central concept in interpersonal theory is the complementarity principle (Carson, 1969; Kiesler, 1983). Complementarity can be used to predict people's reactions to the behaviours of their partner in the communication. For the Affiliation dimension complementary behaviours would include reactions that are similar – friendly behaviour is answered with friendly behaviour, anger with anger. The opposite would be expected on the Control dimension – dominance might be met with submissiveness or vice-versa. For example, a person might be talking (high Control), while the companion responds

by listening (low Control; Dryer & Horowitz, 1997; Sadler & Woody, 2003; Tracey, 1994; 2004; Wubbels et al., this volume). While complementarity is theorized to be the most probabilistic pattern, it is quite possible for partners to respond in a variety of ways (Estroff & Nowicki, 1992; Tiedens & Jimenez, 2003; Tracey, 2005).

Dynamic Systems Theory

A recent theoretical framework known as Dynamic Systems Theory, is employed in the work of Wubbels et al. (this volume), among others. Teacher-students' relationships can be understood in terms of the general interpretations that students and teachers attach to their interactions with each other. However, the exact moment-to-moment, individual interpretations that together produce generalized meaning remain unknown. Dynamic Systems Theory (e.g., Thelen & Smith, 1994) can help analyze the relationship between these levels by connecting two separate time scales: a micro-social or moment-to-moment scale (i.e., teacher-students interaction) and a macro-social or outcome scale (i.e., the teacher-students' relationship). The theory aims to understand the changing patterns of moment-to-moment interactions in relation to changes in outcome patterns. For example, Bronfenbrenner and Morris's (1998) bio-ecological theory posits that the micro-social scale is the primary engine of development and outcomes (e.g., teacher-students' relationships). Thus, these individual interactions may be regarded as the building blocks of patterns of interaction within a social system (Hollenstein, 2007). Self-stabilizing feedback, such as the self-fulfilling prophecy, is the mechanism by which moment-to-moment processes determine macro-level outcomes. In turn, macro-level factors can respond to and restrict moment-to-moment interactions, thus serving both as outcomes (of previous processes) and as constraints (for subsequent processes). In terms of dynamic systems theory, the challenge for future research is to learn which type of moment-to-moment interactions lead to profitable teacher-students relationships.

Linked to both the developmental psychological perspective and dynamic systems theory, the Developmental Systems Model of Teacher-Child Relationships (Pianta, Hamré, & Stuhlman, 2003) attempts to describe the teacher's observable interactive behaviour. It supports the research featured in the Roorda et al., and Spilt and Koomen chapters. This perspective considers interactive behaviours as one of the key components of affective relationships between teachers and children (Roorda et al., this volume). It consists of four relationship components: features of individuals (developmental history and biological factors), representational models of teacher and child (perceptions and emotions), information exchange processes (interactive behaviours), and external influences. These factors influence each other in dynamic, reciprocal ways.

Social Network Theory

Social network theory highlights the manner in which the underlying patterns of relationships among teachers shape professional communities and affect educational improvement (Moolenaar et al., this volume). The chapters by Moolenaar et al. and Price feature this concept. In educational research social network theory and analysis help explain how relationships among teachers in social networks can support or constrain their learning, instructional practice, and approach to change (Daly & Finnigan, 2010; McCormick, Fox, Carmichael, & Procter, 2010; Moolenaar, 2010). Social network theory builds on the notion that social resources such as information, knowledge, and expertise are exchanged through informal networks of actors in a system. Social network theory focuses on both the individual actors and the social relationships connecting them (Wasserman & Galaskiewicz, 1994), and several network features and mechanisms highlight a distinctive facet of the interaction between individuals. Together these offer a nuanced understanding of social structure as they explain the flow of resources among individuals and its implications for individual behaviour, opinions, and preferences (Moolenaar et al., this volume). For example, these networks can facilitate or inhibit access to social capital (Lin, 2001). Network visualizations and characteristics such as density and centrality aid scholars in illuminating how social networks in schools are shaped and changed to achieve individual and organizational goals. As a result, applying social network theory to the study of teachers' interpersonal relationships makes the social fabric of schools and their influence more tangible (Moolenaar et al., this volume).

Price (this volume) proposes faculty networks as the central mechanisms that bind schools together in terms of structure and organizational culture (Bidwell & Yasumoto, 1999; Meyer & Rowan 1977; Ogawa & Bossert, 1995). Through relationships, principals and teachers develop and evolve a school culture out of relational trust, shared values and norms, diffuse work roles, and common experiences (Bryk & Driscoll, 1988; Bryk et al., 2010). Thus, the network's membership produces a structural interdependence that has attitudinal ripple effects throughout the building (Price, this volume). For example, principals' interactions with their staff are found to be central variables associated with these outcomes (Hoy & Henderson, 1983; Leithwood & Jantzi, 1990; Ogawa & Bossert, 1995).

School Effectiveness Theory and School and Class Climate

The chapters by Price, and Georgiou and Kyriakides (among others) are rooted in the school effectiveness tradition. Creemers and Kyriakides (2008) developed a dynamic model of educational effectiveness. This perspective defines the dynamic relations between the multiple factors associated with teacher effectiveness. It includes eight factors describing teachers' instructional role that are associated with student outcomes: *orientation, structuring, questioning, teaching-modelling, applications, management of time, teacher role in making the classroom a learning*

environment, and classroom assessment (Georgiou and Kyriakides, this volume). Due to their influence on classroom-environment and teaching practice, school-level factors are expected to have both direct and indirect effects on student achievement, though an indirect impact is in greater evidence. Educational effectiveness research has shown that aspects at the classroom level have a more significant relationship with educational outcomes than those at the school level (e.g., Kyriakides, Creemers, Antoniou, & Demetriou, 2000; Teddlie & Reynolds, 2000).

Closely connected to school effectiveness theory are the school and class climate and environment conceptualizations included in the Price, Georgiou and Kyriakides, and Wubbels et al. chapters. These models originated in early teacher effectiveness studies and research on the interaction between people and their environment (Moos, 1979; Walberg, 1979). Over the past thirty years, classroom environment research has shown the quality of the classroom environment in schools to be a significant determinant of student learning (Dorman, 2003; Fraser, 1994). School effectiveness and climate research solidly identified the variables associated with successful schools: shared values and norms, openness of governance, and trusting relationships (Price, this volume).

Classroom Management Theories

Theories on classroom management are discussed in the Wentzel, Doyle and Rosemartin, Fricke et al., Riley at al., and Wubbels et al. chapters. They present a wide variety of views on the nature of classroom management, including a range of effectiveness aspects (Fricke et al., this volume). Anderson, Evertson, and Emmer (1980) contend that classroom management is too complex a construct to account adequately for all dimensions. Duke (1979, p. xii) describes classroom management as the "provisions and procedures necessary to establish and maintain an environment in which instruction and learning can occur". Doyle (1986) focuses on the guidance of student behaviour: "Classroom management refers to the actions and strategies teachers use to solve the problem of order in classrooms" (Doyle, 1986, p. 397). According to Fricke et al. (this volume) the efficient management of a class includes reactive, preventive and proactive elements (Helmke, 2009). Based on these parameters, they identify discipline, rule clarity, and prevention of disruptions as the three main constructs of classroom management.

The ecological approach to classroom management originated from the seminal work of Gump (1969), Kounin (1970) and Doyle (2006) and emphasizes how to create a classroom ecology that invites student cooperation rather than disruption. Doyle and Rosemart (in this volume) argue that classrooms are multidimensional activity settings or ecologies in which teachers must establish, orchestrate, and sustain events that elicit student collaboration over long periods of time and across challenging daily, weekly, monthly, and seasonal variations. These events are jointly constituted by a teacher and her or his students and contain, at their core,

action vectors that draw participants to learning and maintain order. Seatwork, for example, is a familiar event in which students typically work individually on well-structured assignments or worksheets that sustain their involvement. A class discussion, on the other hand, is a more complex action system involving bidding for turns, multiple speakers whose contributions may or may not address the central topic, and unpredictable sequences and directions (Doyle & Rosemartin, this volume). We also know that the ability and willingness of students to engage in classroom tasks affects classroom stability. "When familiar work is being done, the flow of classroom activity is typically quite smooth and well ordered. Tasks are initiated easily and quickly, work involvement and productivity are typically high, and most students are able to complete tasks successfully" (Doyle, 1988, p. 174).

Classroom management can be seen from the perspective of individual students or from the class as an entity (Fricke et al., this volume). From the student's standpoint it specifies expectations, clarifies duties, and establishes possibilities in a specific situation. Fricke et al. (this volume) state that at the class level management is aimed at giving all students the boundary conditions for learning-oriented interaction. This is a necessary prerequisite for ensuring time-on-task, which is again closely related to students' knowledge gains. Also, according to theories about the development of interest, learning-related interactions and the individually-perceived quality of classroom management can evoke and foster topic-related interest.

When, however, students misbehave, teachers have a responsibility to manage the situations as they arise and employ strategies to reduce disruptions over time. In doing so they must manage their own emotional reactions to students, which in turn affects their own classroom behaviour (Riley et al., this volume). Student misbehaviour may provoke an aggressive teacher response (Sava, 2002) that can take many forms, from overt acts such as yelling, to more subtle, even covert behaviours, such as not rewarding or acknowledging students' pro-social behaviours. Three types of aggressive conduct are distinguished: deliberately embarrassing students, using sarcasm to discredit, and yelling angrily (Riley et al., this volume).

INSTRUMENTS

Given the breadth of theoretical perspectives it is no surprise that a number of instruments have been employed to investigate the various interactions and relationships discussed in these chapters. The tools range from questionnaires that have been specifically developed to measure relationships or interactions, to excerpts or results from existing broader instruments with the same purpose. Although the use of existing instruments limits the number and type of variables that can be investigated, it presents a clear resource advantage to developing new measures since data can be collected or reused more efficiently. As noted, a number of our authors (Price, Wentzel, and Spilt & Koomen) utilized this

approach. The following is a brief discussion of instruments that were specifically developed to measure teacher-student relationships and interactions.

Student-Teacher Relationship Scale

Roorda et al., and Spilt and Koomen employed the Student-Teacher Relationship Scale (STRS; Pianta, 2001), which was derived from the Developmental Systems Model. The STRS measures teacher perceptions of her/his relationship with a child and includes three dimensions: closeness, conflict, and dependency. Closeness measures the degree of affection, warmth, and open communication in the teacher-child relationship. Conflict describes the extent of negativity, anger, and discordance. Dependency refers to the degree of clinginess, overreliance, and possessiveness of the child in the relationship.

Questionnaire on Teacher Interaction (QTI)

Several chapters (Georgiou & Kyriakides, Telli & Den Brok, Maulana et al.) utilized the Questionnaire on Teacher Interaction (QTI), which is based on Interpersonal Theory (Wubbels et al., this volume). The QTI measures the perceptions of teachers and students of teacher-students relationships according to a two-dimensional model first described by Leary. In addition to the two dimensions – Control and Affiliation – the instrument assesses the following eight teacher behaviour types based on dimensional ratings: Steering, Friendly, Understanding, Accommodating, Uncertain, Dissatisfied, Reprimanding, and Enforcing. The QTI items are divided into eight scales that correspond to the eight behaviour types. (Wubbels et al., 1985; 2006). Also in this volume, Georgiou and Kyriakides describe the use of a similar instrument – the Questionnaire on Principal Interaction (Kremer-Hayon & Wubbels, 1993) – to assess relationships between principals and teachers.

Students' Perceptions of Classroom Management

The Students' Perceptions of Their Teacher's Classroom Management (SPCM) by Fricke et al. is a newly developed instrument reported in this volume. It consists of three scales, with five or six items in each: (1) discipline (how disruptive perceive the students their lessons and how often has the teacher to remind students to work quietly), (2) rule clarity (did the teacher set up a system of rules and rituals, and know, understand, and adhere students to these), and (3) prevention of disruptions (is the teacher "omnipresent" and is he or she able to notice and prevent disruptive behaviour, even when being busy with individual students).

Observational Measures

In studies reported in two chapters – Mainhard, Brekelmans and Wubbels (2011, reported in the Wubbels et al. chapter) and Roorda et al. – similar observational measures were utilized that are based on Interpersonal Theory. Roorda et al. analyzed videotaped teacher behaviours towards a child by having them rated independently by different groups of observers. They viewed five-second episodes, using two six-point scales for Teacher Affiliation and Teacher Control (Thijs, Koomen, Roorda, & Ten Hagen, 2011). Teacher Affiliation ranged from *very low* (1) "is repulsive, morose, or unfriendly to the child" to *very high* (6) "is strongly positive, clearly supportive, companionable, or warm, both verbally and nonverbally". Teacher Control varied from *very low* (1) "shows a passive attitude towards the child, and does not try to influence his/her behaviour at all" to *very high* (6) "tries to have a strong influence on the child, has (or takes) complete control over the situation without acknowledging and permitting any independent contribution from the child".

The Mainhard et al. (2011) study coded teacher behaviour in a similar manner and also rated class behaviour in real-time following an event-sampling procedure. They employed five-point scales that extended from dependent to independent (Control) and hostile to friendly (Affiliation) for both teacher and class.

CONCLUSION

As can be seen, combining and integrating various theoretical perspectives greatly enriches the study of interpersonal relationships in education. The combination of developmental and interpersonal models in the Roorda et al. chapter is a good example. By developing an observational measure based on interpersonal theory and combining it with a developmental systems instrument that assessed teacher-student relationships, the authors were able to describe novel associations between teacher-student relationships and actual teacher-child interactions. Price demonstrated how a merger of social network and school climate and effectiveness can enhance the prediction of principal-teacher relationships and attitudes. The Wubbels et al. chapter illustrates the benefits of linking dynamic systems and interpersonal theory to unravel the effects of moment-to-moment interactions on the long-term development of teacher-students' relationships. Finally, it is important to recognize Georgiou and Kyriakides' integration of school effectiveness and interpersonal theories, which resulted in a clear demonstration of the importance of interpersonal relations to educational effectiveness.

The combination and integration of different theoretical perspectives might support future progress and developments in the study of interpersonal relationships in education. The following section presents some examples.

A central problem in the study of interpersonal relationships in education is the question of causality versus reciprocity. Do interactions influence a relationship or

vice versa? Are student attitudes caused by teacher-student relationships, or do they help determine them? As Wentzel notes:

From a theoretical perspective, advances in understanding teacher-student relationships require additional consideration of causal mechanisms and pathways of influence. The predominant approach to the study of teacher-student relationships is to assume a causal connection such that the nature and quality of relationships and interactions influence student outcomes. A consideration of alternative pathways, however, would add critical and important insights to the discussion of these relationships. For instance, models that address the potential impact of children's motivation and engagement on teachers' behaviour, and that identify motivational processes that lead to receptive as opposed to rejecting or neglectful behaviour on the part of teachers need to be developed to inform this area of research.

For example, one might assume from the Riley, et al. chapter that disruptive student behaviour causes emotional feelings that lead teachers to respond aggressively. However, it is quite possible that aggressive teacher behaviours have caused students to disrupt lessons. It is attractive but dangerous to quickly resolve this quandary by assuming reciprocal associations. Dynamic systems theory has begun to provide a framework as well as statistical analytic tools that might ultimately disentangle the causal links between these and other variables (e.g., Mainhard et al., 2011).

Dynamic systems theory might also help to determine the strength of mechanisms relating attitudes, motivation and interpersonal relationships for students of different ages. A micro level examination might describe the relationship between these variables at one age, while the macro level analysis would focus on different ages. As Wentzel (this volume) states, establishing such associations is essential for understanding developmental changes in the importance of teacher-student relationships. Similarly, dynamic systems theory might inform our understanding of the cumulative effects that repeated positive relationships with many teachers have on students, especially with regard to a student's sense of school community and belongingness. As Wentzel (this volume) states: "The extent to which these more global beliefs develop out of interactions and relationships with single or multiple teachers, and reflect a student's ongoing history of relationships or a single but salient recent relationship are important remaining questions to address in this area of work".

Interpersonal and dynamic systems theory might further illuminate the importance of the social network context. Moolenaar notes that "… in a social network, individuals are embedded within dyadic relationships, and dyadic relationships are embedded in larger sub-groups of three, four, or more actors that eventually shape a social network. Even a social network itself is embedded in a larger social structure, for instance an organization, a community, or a country". Interpersonal theory provides an excellent framework to describe dyadic relationships that can then be depicted on all structural levels. When researchers

combine this interpersonal approach with dynamic systems and social network theories, it becomes possible to map the development of network structures on the micro and macro level.

On the other hand, the developmental perspective should increase the understanding of researchers who follow interpersonal, social network, school effectiveness and/or classroom management models. The developmental perspective has highlighted four relationship components: features of individuals (developmental history and biological factors), representational models of teacher and child (perceptions and emotions), information exchange processes (interactive behaviours), and external influences. These components influence each other in dynamic, reciprocal ways (Wentzel, this volume). In many studies, features of individuals and the processes of information exchange do not receive as much attention as required.

A final challenge for both developmental and interpersonal theorists is the difference in dimensions that describe relationships embodied in these two perspectives. Whereas interpersonal theory identifies two dimensions – variously known as Control and Affiliation or Warmth and Influence – developmental researchers often use three: Closeness, Conflict and Dependency. In this instance the two theoretical frameworks are clearly at odds and this issue must be resolved in order to progress.

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STUDENT ORIENTED

KATHRYN R. WENTZEL

2. TEACHER-STUDENT RELATIONSHIPS AND ADOLESCENT COMPETENCE AT SCHOOL

INTRODUCTION

There is growing consensus that the nature and quality of children's relationships with their teachers play a critical and central role in motivating and engaging students to learn (Wentzel, 2009). Effective teachers are typically described as those who develop relationships with students that are emotionally close, safe, and trusting, who provide access to instrumental help, and who foster a more general ethos of community and caring in classrooms. These relationship qualities are believed to support the development of students' motivational orientations for social and academic outcomes, aspects of motivation related to emotional well-being and a positive sense of self, and levels of engagement in positive social and academic activities. They also provide a context for communicating positive and high expectations for performance and for teaching students what they need to know to become knowledgeable and productive citizens.

Despite this consensus, there is much yet to learn about the nature of teacher-student relationships and their significance for motivating students to excel academically and behave appropriately. At the most general level, the conceptual underpinnings of work in this area tend to suffer from lack of clarity and specificity. For example, it is not always clear what scholars mean when they talk about 'relationships' between teachers and students. Similarly, motivational constructs are often vague and ill-defined (see Murphy & Alexander, 2000). In addition, explanatory models that provide insights into the mechanisms whereby teacher-student relationships have a meaningful impact on student outcomes are rare.

In light of these issues, this chapter highlights various perspectives on teacher-student relationships and motivation, including definitions of constructs and theoretical perspectives that guide current work in this area. A specific model of teacher-student relationships that focuses on relationship provisions in the form of emotional warmth and expectations for goal pursuit is presented, and suggestions for future directions for theory and research are offered.

DEFINITIONS AND CONCEPTUAL MODELS

Defining Teacher-Student Relationships

In the developmental literature, relationships are typically defined as enduring connections between two individuals, uniquely characterized by degrees of continuity, shared history, and interdependent interactions across settings and activities (Collins & Repinski, 1994; Hinde, 1997). In addition, definitions are frequently extended to include the qualities of a relationship, as evidenced by levels of trust, intimacy, and sharing; the presence of positive affect, closeness, and affective tone; and the content and quality of communication (Collins & Repinski, 1994; Laible & Thompson, 2007). Along each of these dimensions, relationships can evoke positive as well as negative experiences. Finally, relationships are often thought of in terms of their influence and what they provide the individual. In this regard, researchers have focused on the benefits of various relationship provisions such as emotional well-being, a sense of cohesion and connectedness, instrumental help, a secure base, and a sense of identity for promoting positive developmental outcomes (Bukowski & Hoza, 1989).

From a developmental perspective, relationships are believed to be experienced through the lens of mental representations developed over time and with respect to specific experiences (Bowlby, 1969; Laible & Thompson, 2007). Mental representations that associate relationships with a personal sense of power and agency, predictability and safety, useful resources, and reciprocity are believed to be optimal for the internalization of social influence (see Kuczynski & Parkin, 2007). These representations also provide stability and continuity to relationships over time. In this regard, early representations of relationships with caregivers are believed to provide the foundation for developing relationships outside the family context, with the quality of parent-child relationships (i.e., levels of warmth and security) often predicting the quality of peer and teacher relationships in early and middle childhood (see Wentzel & Looney, 2007).

Although stability and continuity are viewed as hallmarks of relationships, they also are viewed as dynamic; relationships undergo predictable changes as a function of development and the changing needs of the individual. For example, over the course of adolescence, children's relationships with parents improve with respect to overall positive regard and reciprocity; in early and middle adolescence, relationships with parents are marked by heightened negative affect and conflict; and adolescents experience discontinuities in the frequency and meaning of interactions with parents and the availability of resources from them (Collins & Repinski, 1994). Similarly, relationships with peers change with age. Whereas younger adolescents tend to form relationships within peer crowds and cliques, older adolescents tend to focus on relationships with a more limited number of friends (Brown, Mory, & Kinney, 1994). As children move through adolescence, they also view relationships with peers as the most important sources of intimacy, nurturance, companionship, and admiration (Lempers & Clark-Lempers, 1992).

Of particular interest for the current chapter are adolescent's relationships with teachers. Although less is known about these relationships relative to those with parents and peers, teacher-student relationships are typically defined with respect to emotional support as perceived by the student and examined with respect to their impact on student outcomes. There are several issues, however, that make this literature problematic. First, although there is general recognition that by adolescence, students have a well-formed mental schema of their relationships with teachers, perceptions of teacher support most often reflect relationships with teachers in general, rather than with one specific teacher (cf., Wentzel, 1991). Therefore, findings typically do not reflect the nature of a dyadic relationship or its unique influence on school-related outcomes.

Of additional importance is that when school-aged children rate the importance of their relationships with teachers, mothers, fathers, siblings, and friends, they typically report being very satisfied with their relationships with their teachers. However, on affective dimensions such as intimacy, nurturance, and admiration, teachers are routinely ranked by children as the least likely source of support when compared to parents and peers (Furman & Buhrmester, 1985; Lempers & Clark-Lempers, 1992; Reid, Landesman, Treder, & Jaccard, 1989; see also Darling, Hamilton, & Niego, 1994). Rather, they tend to rank teachers as most important for providing instrumental aid and informational guidance (Lempers & Clark-Lempers, 1992). Therefore, the literature provides fairly clear support for including provisions of instrumental help as a dimension of teacher-student relationships that is important to students at all ages, but calls into question the relative role of teachers' emotional support in most students' lives. Finally, few researchers have examined the dynamic qualities of teacher-adolescent relationships and the potential for them to change in quality and function over time.

Defining Motivation at School

Whereas conceptualizations of teacher-student relationships are often simplistic, definitions of motivation are numerous and often highly nuanced. However, motivation is typically defined as a set of interrelated beliefs that direct behaviour, and researchers typically focus on these beliefs in relation to academic tasks and activities (see Wentzel & Wigfield, 2009). Motivational beliefs most commonly studied are personal goals, values associated with goals, beliefs about ability, and beliefs about causality and control. Personal goals determine why students do what they do. The content of goals (e.g., Ford, 1992) directs efforts toward specific outcomes (e.g., to learn algebra), and goal standards (e.g., Bandura, 1986) define acceptable levels of accomplishment (e.g., to learn enough algebra to pass the exam). Values associated with goals reflect the costs and benefits of goal accomplishment, the importance and long-term utility of goal achievement, and the intrinsic pleasure of engaging in goal-directed behaviour (Eccles, 2005). Students' beliefs about their abilities (e.g., "I am able to learn math") also appear to influence what they choose to do and why they persist at certain activities and not others

(Schunk & Pajares, 2009). The stronger a student's beliefs about personal efficacy and competence, the more likely they are to engage in goal pursuit. Finally, beliefs about autonomy and control (e.g., "I am learning algebra because it is my choice") provide students with a lens for interpreting past events and with a basis for developing expectations for the future. More specifically, they represent reasons for why they succeed or fail and therefore, for engaging in or refraining from future goal pursuit (e.g., Graham & Williams, 2009).

Although less common in discussions of motivation, students also are motivated by social concerns that emanate from social interactions and contextual cues (see Ford, 1992; Wentzel, 2004). Of direct relevance to interpersonal relationships are beliefs about belongingness and emotional connectedness to others, that is, feeling like one is a valued and integral member of a social group (Connell & Wellborn, 1991). From this perspective, engagement in a socially-valued activity is more likely to occur if students believe that others care about them and want them to engage. As described in subsequent sections, much work has linked these beliefs to a range of social and academic outcomes. In addition, moral and social obligations, based on the extent to which students believe they are *supposed* to engage in an activity, can have a powerful influence on behaviour. As a central aspect of instrumental help, communications about what is expected from students academically and socially should play a central role in motivating students' achievement-specific outcomes and therefore, in defining the contribution of teacher-student relationships to student accomplishments. However, the role of expectations in motivating student outcomes, especially as they apply to specific teacher-student relationships, is not well understood.

Explanatory Models

Given the various constructs associated with relationships and motivation, why then, might students' relationships with teachers be associated with or even influence their motivation to engage in positive school-related outcomes? The prevailing theoretical models that guide work in this area are derived from work on parent-child relationships and typically adopt a causal approach, with the affective quality of teacher-student relationships viewed as the central and critical motivator of student adjustment (e.g., Pianta, Hamre, & Stuhlman, 2003). The basic tenets of attachment theory (Bowlby, 1969; Bretherton, 1987) reflect this notion. Other perspectives that have contributed to this literature describe teacher-student relationships along specific dimensions and provisions (Wentzel, 2004), as specified by models of parent-child interactions (e.g., Baumrind, 1971). In the following sections, each of these approaches will be described.

Attachment theory perspectives. Attachment theory has provided the strongest impetus for work on teachers' relationships with young children. According to this perspective, the dyadic relationship between a child and caregiver (usually the mother) is a system in which children experience various levels of positive affect

and responsiveness to their basic needs, with predictable and sensitive responses being associated with secure attachments, and more arbitrary and insensitive responses leading to insecure attachments (see Bowlby, 1969). Theorists hypothesize qualitatively different outcomes associated with secure and insecure attachment systems. Secure relationships are believed to foster children's curiosity and exploration of the environment, positive coping skills, and a mental representation of one's self as being worthy of love and of others as being trustworthy. In contrast, insecure attachments are believed to result in either wary or inappropriately risky exploratory behaviour, difficulty in regulating stress in new settings, and negative self-concepts. A basic tenet of attachment theory is that the primary attachment relationship results in children's mental representations of self and others, which are then used as a basis to interpret and judge the underlying intentions, reliability, and trustworthiness of others' actions in new relationships (Bretherton, 1987). Depending on the nature of primary attachments, children will expect to experience new relationships with respect to positive affect and trust, by conflict and rejection, or as anxiety-producing, overly-dependent or enmeshed.

Although teacher-student relationships are not typically viewed as primary attachment relationships, attachment theory principles imply that they would be fairly concordant with the quality of parent-child attachments. Therefore, attachment theory has been used as a framework for generating predictions concerning children's relationships with their teachers, especially during the preschool and elementary school years. Hypothesizing connections between secure attachments and children's motivation for school-related activities is fairly straightforward. A positive sense of self, curiosity and willingness to explore, and trust in others can be viewed as central precursors to children's beliefs about emotional connectedness with others, efficacy to learn and interact socially with others, personal control, and intrinsic interest in classroom activities (e.g., Harter, 1978; Raider-Roth, 2005). To the extent that student-teacher attachments are positive, researchers assume that these same outcomes associated with secure parent-child attachments should occur in association with teacher-student relationships.

In line with attachment theory principles, evidence from correlational studies confirms that secure and close relationships with teachers are related positively to young children's motivation toward school and associated cognitive and social competencies. In work on young children, teacher-student relationships typically are assessed by asking teachers about the affective quality of their relationships with students and relating their responses to academic outcomes such as school readiness and test scores, and social competencies such as prosocial and antisocial forms of behaviour and peer relationships (e.g., Howes & Hamilton, 1993; Peisner-Feinberg et al., 2001; Pianta, Nimetz, & Bennett, 1997). Motivational outcomes have been studied less frequently, although teacher-student relationships marked by emotional closeness have been related positively to students' reports of school liking (Birch & Ladd, 1997) and students' identification with teachers' values and positive social self-concept (Davis, 2001); affectively negative relationships have

been related to student anxiety and depression (Murray & Greenberg, 2000). In general, however, these relations have been fairly weak and appear to differ as a function of measurement and design strategies, and specific outcomes being predicted (see Wentzel, 2009).

Dimensions of teacher-student relationships. An additional approach has been to consider relationships as serving a broader range of functions that contribute to students' competence at school. This approach has been used primarily to study relationships in middle childhood and adolescence. For the most part, scholars adopting this approach have focused on teachers as socialization agents who create interpersonal contexts that influence levels and quality of student motivation and engagement (see Connell & Wellborn, 1991; Wentzel, 2004). Although the affective tone of teacher-student interactions is a central focus of discussion, these perspectives propose that the contribution of teachers' relationships with students should be defined in terms of multiple dimensions that combine with emotional support to motivate students to engage in the social and academic life of the classroom.

Similar to those described in models of effective parenting and parenting styles (e.g., Baumrind, 1971; Darling & Steinberg, 1993), these dimensions reflect levels of concern with a student's emotional and physical well-being, predictability and structure, and instrumental resources. These dimensions are believed to reflect necessary interpersonal resources that support a child's pursuit of social and academic goals that are valued by others. When applied to the social worlds of the classroom, these dimensions are reflected in opportunities for learning as reflected in teachers' communications of rules and expectations for behaviour and performance, provisions of instrumental help, and opportunities for emotional support and interpersonal connectedness.

Support for this perspective is found in students' and teachers' qualitative descriptions of caring and supportive teachers, and from studies relating multiple dimensions of support to student outcomes. Qualitative approaches have identified multiple types of teacher support by asking students and teachers what a supportive or caring teacher is like (see Hoy & Weinstein, 2006). For example, when asked to characterize teachers who care, middle school students describe teachers who demonstrate democratic and egalitarian communication styles designed to elicit student participation and input, who develop expectations for student behaviour and performance in light of individual differences and abilities, who model a 'caring' attitude and interest in their instruction and interpersonal dealings with students, and who provide constructive rather than harsh and critical feedback (Wentzel, 1998). Moreover, students who perceive their teachers as providing high levels of these multiple supports also tend to pursue appropriate social and academic classroom goals more frequently than students who do not (Wentzel, 2002).

Others have documented differences in middle school students' characterizations of supportive teachers as a function of student ability, with

students from high ability tracks valuing teachers who challenge them, encourage class participation, and who express educational goals similar to theirs. In contrast, students from low ability tracks tend to value teachers who treat them with kindness, who are fair, explain subject matter clearly, and maintain control in the classroom (Daniels & Arapostathis, 2005). Ethnographic studies document that academically successful inner-city ethnic minority adolescents value instrumental help from teachers but also warmth and acceptance coupled with high academic expectations (Smokowski, Reynolds, & Bezrucko, 2000). Racially mixed groups of middle school students highlight the importance of teachers who are responsive to individual differences and needs, who provide students with autonomy and choice (Oldfather, 1993), who show interest in students as individuals, help with academics, encourage students to work up to their potential, and who teach well and make subject matter interesting (Hayes, Ryan, & Zseller, 1994).

Additional evidence concerning provisions associated with teacher-student relationships is provided in studies where multiple dimensions of supports have been assessed simultaneously. This work has documented differential effects as a function of dimension and the outcome being studied (see Wentzel, 2009 for a review). For example, Wentzel and her colleagues (Wentzel, Battle, Russell, & Looney, 2010) documented unique relations of teachers' provisions of clear expectations, classroom safety, instrumental help, and emotional support to students' interest in class and efforts to behave appropriately. Skinner and Belmont (1993) also documented significant relations between teachers' provisions of involvement and structure (e.g., clear expectations, instrumental help) and students' engagement in class. Finally, researchers also have documented significant main effects of structure and emotional support from teachers on positive behaviour at school (Gregory, Cornell, Fan, Sheras, Shih, & Huang, 2010; Gregory & Weinstein, 2004).

INTEGRATION AND EXTENSION OF THEORETICAL PERSPECTIVES

Wentzel (2004) has described more specifically how teacher-student interactions along these dimensions can promote student motivation and subsequent performance. Derived from theoretical perspectives on person-environment fit and personal goal setting (e.g., Bronfenbrenner, 1989; Eccles & Midgley, 1989), she argues that school-related competence is achieved to the extent that students are able to accomplish goals that have personal as well as social value, in a manner that supports continued psychological and emotional well-being. More specifically, Bronfenbrenner (1989) argues that competence can only be understood in terms of context-specific effectiveness, being a product of personal attributes such as goals, values, self-regulatory skills, and cognitive abilities, and of ways in which these attributes contribute to meeting situational requirements and demands. Bronfenbrenner further suggests that competence is facilitated by contextual supports that provide opportunities for the growth and development of these personal attributes as well as for learning what is expected by the social group.

Therefore, students' ability to accomplish their goals is contingent on opportunities and affordances of the school context that allow them to pursue their multiple goals. Moreover, Wentzel argues that students will come to value and subsequently pursue academic and social goals valued by teachers when they perceive their interactions and relationships with them as providing clear expectations concerning goals that should be achieved; as facilitating the achievement of their goals by providing help, advice, and instruction; as being safe and responsive to their goal strivings; and as being emotionally supportive and nurturing (see also Ford, 1992).

In line with attachment theory and work by Darling and Steinberg (1993), Wentzel also assigns a unique role to the emotional climate of relationships such that teachers are believed to have the strongest motivational impact on students if they provide instrumental resources within a context of warmth and emotional support. In this view, the roles of relationship warmth and communication of expectations and values in motivating students are unique but interrelated. With respect to their unique contribution, it is well-documented that warmth and expectations each have direct, main effects on adolescents' social and academic functioning at school. Research has yielded the most consistent findings in support of a link between emotional support from teachers and classroom goal pursuit. With respect to social outcomes, Wentzel's work in this area has documented significant, positive relations between middle school students' perceptions of emotional support from teachers and pursuit of goals to be prosocial and socially responsible (e.g., Wentzel, 1991, 1994, 1997, 1998, 2002). In these studies, emotional support was assessed from the perspective of teachers and peers, including teacher reports of preference for students and classmate reports of teachers as being supportive and caring. In addition, although much of this work has examined concurrent relations between social support and goal pursuit, longitudinal studies have provided evidence that perceived support from teachers predicts student goal pursuit across the middle school years (Wentzel, 1997, 2003). Finally, perceived emotional support from teachers has been related to academic aspects of student motivation, including pursuit of goals to learn (Wentzel, 2002), effort (i.e., a behavioural manifestation of academic goal pursuit; Wentzel, 1997), and mastery goal orientations toward learning (Wentzel, 1998, 2002).

Although research has just begun, students' perceptions of teachers' expectations for social behaviour and academic performance also have been related to social goal pursuit as well as academic goal pursuit (Wentzel et al., 2010). However, it is reasonable to assume that the degree to which students pursue goals valued by teachers is dependent on whether teachers communicate clearly and consistently their values and expectations concerning classroom behaviour and performance. Clarity of communications and consistency of classroom management practices early in the academic year tend to predict positive academic and social outcomes in elementary and secondary level classrooms throughout the year (see Gettinger & Kohler, 2006). Beyond communicating values and expectations for behaviour and achievement at the classroom level, teachers also convey expectations about ability and performance to individual students. As part

of ongoing interpersonal interactions, these communications have the potential to influence a student's beliefs about her own ability and goals to achieve academically (Weinstein, 2002). Of particular note is that teachers who communicate high expectations for individual students can bring about positive changes in academic accomplishments. However, the direct impact of these expectations on student motivation has been examined infrequently (see Jussim, Robustelli, & Cain, 2009).

Of additional interest, however, is the possibility that warmth and expectations might influence motivation and engagement not only in additive fashion but also as interactive effects. Indeed, Darling and Steinberg (1993) argued that the effectiveness of domain-specific parenting practices will be determined in part, by the overall warmth and emotional climate of the parent-adolescent relationship. Applied to the classroom, this notion suggests that communication of specific expectations for social and academic outcomes should be more predictive of motivation and engagement outcomes if they are communicated within the context of an emotionally caring relationship. Although recognition of Darling and Steinberg's model is widespread, few researchers have examined their hypotheses concerning the interactive influence of a teacher-student relationship's emotional climate and expectations for social and academic outcomes on motivation. Findings are suggestive, however, in that adolescents' tend to perceive parental expectations more accurately when parental warmth and responsiveness is high (Knafo & Schwartz, 2003), emotionally secure relationships with teachers are related to students' identification with teachers' values (Davis, 2001), and parental warmth moderates the effects of parental monitoring on academic achievement (Spera, 2006).

In her ongoing program of research, Wentzel has also begun to examine these issues. Preliminary evidence of the main effects as well as interactive effects of teachers' emotional caring and expectations on adolescents' social and academic outcomes are described in the following section.

Evidence of the Interactive Influence of Emotional Support and Expectations from Teachers on Motivation

Research on the interactive role of perceived emotional support and expectations from teachers in motivating adolescent's social and academic competence at school has begun to yield support for Darling and Steinberg's model. In particular, results support the notion that teacher expectations for academic outcomes are most effective when communicated within a context of emotional warmth and caring; these findings reflect students' perceptions of a single teacher and the degree to which they are motivated to achieve academic and social outcomes in that particular teacher's class. To illustrate, in a sample of 254 middle and high school students (70% European American) from a suburban middle-class school district, perceived expectations from teachers for academic performance predicted mastery goal pursuit only under conditions of high and medium levels of perceived

emotional support (Wentzel & Looney, 2007), see Figure 1. In a second sample of 595 fifth and sixth graders (92% Mexican American) from a low income school district, similar results were obtained in that perceived academic expectations from teachers predicted academic effort most strongly under conditions of high emotional support provided by teachers (Wentzel, Russell, & Baker, 2011), see Figure 1.

As part of this work, the domain-specificity of teacher influence also was examined. Of interest in this regard was whether the interactive model was robust across academic and social domains and whether the model was applicable to peer relationships as well as to adolescents' relationships with teachers. In both sets of analyses predicting academic aspects of motivation, teachers' emotional support x expectations for academic performance interaction terms were significant predictors of motivation and engagement while controlling for the potentially confounding role of perceived emotional support and expectations for academic performance from peers. The peer variables were non-significant predictors. Therefore, dimensions of teacher-student relationships appeared to have primary influence in the academic domain.

Wentzel and her colleagues also have examined the role of teacher emotional support and expectations in predicting adolescents' social goal pursuit, while also including perceived emotional supports and expectations for social behaviour from peers in the model. In this case, the role of the teacher-student relationship in predicting social motivation was negligible, whereas the interactive model was robust for peer relationships. To illustrate, in a sample of 358 sixth, seventh, and eighth graders (75% European American, 22% African American) from a suburban middle school, peer expectations predicted pursuit of goals to be responsible (e.g., to follow rules, keep commitments) only under conditions of high and medium levels of emotional support (based on data from Wentzel et al., 2010), see Figure 2. In a second sample (Wentzel et al., 2011), perceived expectations for social behaviour predicted pursuit of goals to be prosocial (to help, cooperate, and share), but only under conditions of low and medium levels of emotional support, see Figure 2. Although this latter finding is counter-intuitive, it likely reflects the fact that positive peer relationships are founded on prosocial forms of behaviour (e.g., Wentzel & Erdley, 1993), and that students with low levels of support who are seeking higher levels of acceptance and emotional support from peers will be more motivated to display such behaviour.
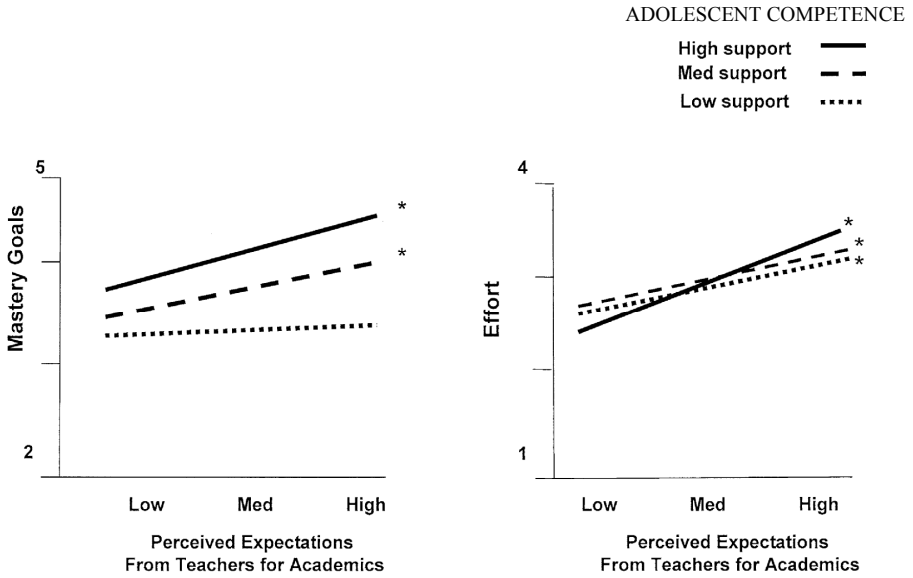
Figure 1. Interactions of emotional support and expectations as predictors of academic engagement.
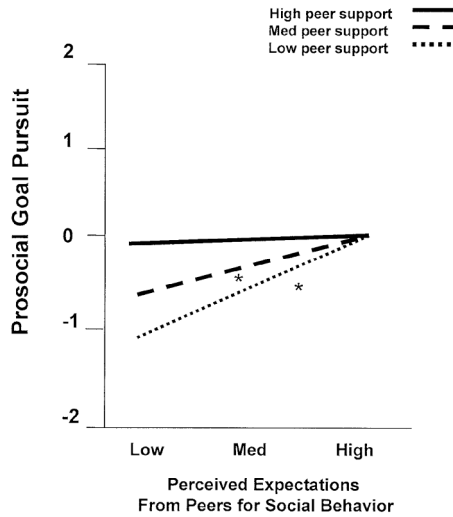

Figure 2. Interactions of emotional support and expectations for social behaviour as predictors of social goal pursuit.

CONCLUSIONS AND FUTURE DIRECTIONS

In this chapter, literature on the nature of relationships and motivation as it relates to the influence of teacher-student relationships in adolescence has been reviewed. A model of teacher-student relationships that focuses on relationship provisions in the form of emotional support and expectations for behaviour also was described. Finally, evidence supporting the moderating role of emotional support on associations between teacher's expectations for performance and motivational outcome (i.e., goal pursuit and engagement) was presented. Although these initial findings have the potential to move the field forward, important issues remain unresolved. These methodological and theoretical challenges are described in the following section.

Methodological Challenges

Some of the most challenging issues that limit conclusions concerning the importance of teacher-student relationships are found in research designs. For the most part, conclusions are based on correlational data; studies of change in student outcomes as a result of changes in relationships with teachers are rare. However, limited evidence suggests that when teachers are taught to provide students with warmth and support, clear expectations for behaviour, and developmentally appropriate autonomy, their students tend to develop a stronger sense of community, increase displays of socially competent behaviour, and show academic gains (e.g., Schaps, Battistich, & Solomon, 1997; see also, Kuijpers, Houtveen, & Wubbels, 2010). Many comprehensive school reform models also incorporate an explicit focus on teacher-student relationships as a strategy for improving student engagement and learning (Stipek, 2004), although few of these efforts have documented the unique impact of teacher-student relationships on student motivation and academic improvements. Therefore, future work needs to establish causal connections by assessing change in student outcomes as a function of changing perceptions of teachers from one year to the next (Wentzel, Williams, & Tomback, 2005), documenting changes in students' perceptions and outcomes as they experience different teachers and classrooms, or by designing interventions to change the quality of support from a particular teacher (see Pianta et al., 2003).

An additional issue with respect to research design concerns the unit of analysis and whether dimensions of support are assessed at the level of the individual student, classroom, or school (Fraser & Fisher, 1982). Studies relating individual students' perceptions of supports to their social and academic accomplishments yield important information about the psychological impact of social support. For the most part, however, researchers that focus on individual differences typically disregard the fact that teacher or classroom effects might also explain student outcomes (cf., Den Brok, Brekelmans, & Wubbels, 2004). For instance, class size has been related significantly and negatively to teachers' provisions of emotional support (Mashburn, Hamre, Downer, & Pianta, 2006; Pianta et al., 2003).

Emotional support from teachers also appears to account for only a small amount of variance in observed climate in elementary classrooms (Pianta et al., 1997). Therefore, studies could profit from an examination of between-classroom effects by gathering information on a larger number of classrooms and a greater range of classroom characteristics. More complex designs that take into consideration the nested quality of teacher supports at the level of student, classroom, and school are needed in this regard.

The moderating influence of students' and teachers' sex, race, and other background characteristics on the impact of teacher-student relationships also requires further examination. Indeed, research indicates that personal characteristics might enhance or detract from a student's tendency to establish supportive relationships with teachers and therefore, benefit from them. For example, in the elementary-school years, relations between close and secure teacher-student relationships and student adjustment tend to be stronger for ethnic minority and at-risk students than for Caucasian students (see Wentzel, 2009). Relatedness with teachers also tends to be associated with student outcomes more strongly for special education students than for regular students, and more for boys than for girls. Similarly, relations between perceived emotional support from teachers and student adjustment are moderated by SES and race such that students from lower SES backgrounds (Dornbusch, Erickson, Laird, & Wong, 2001), and members of minority groups (Certo, Cauley, & Chafin, 2003; Crosnoe, Johnson, & Elder, 2004; Den Brok, Van Tartwijk, Wubbels, & Veldman, 2010) tend to benefit more from close relationships with teachers than do other students.

Finally, relatedness with teachers appears to differ as a function of students' age, with more elementary grade students reporting optimal or adequate relationships than middle school students (Lynch & Cicchetti, 1997). School-level factors such as safety, racial homogeneity, SES of the student body (Crosnoe et al., 2004), and composition of instructional teams (Murdock & Miller, 2003) also appear to moderate relations between perceived teacher support and student outcomes. Most of these studies have focused on fairly objective outcomes such as grades, test scores, or delinquent and aggressive forms of behaviour. The moderating impact of these characteristics on motivational processes is not well-understood.

Theoretical Challenges

From a theoretical perspective, advances in understanding teacher-student relationships requires additional consideration of causal mechanisms and pathways of influence. The predominant approach to the study of teacher-student relationships is to assume a causal connection such that the nature and quality of relationships and interactions influence student outcomes. A consideration of alternative pathways, however, would add critical and important insights to the discussion of these relationships. For instance, models that address the potential impact of children's motivation and engagement on teachers' behaviour, and that identify motivational processes that lead to receptive as opposed to rejecting or

neglectful behaviour on the part of teachers need to be developed to inform this area of research.

Assuming that teacher-student relationships have a causal influence on student adjustment, greater understanding of what it is that develops or is changed on the part of students as a function of their relationships and interactions with teachers also is necessary. As noted in this chapter, teacher-student relationships have been related positively to a range of motivational outcomes such as students' goal pursuit, beliefs about competence and control, effort and persistence, and self-regulatory strategies. These findings, however, tell us little about how and why these relationships impact students' accomplishments at school. Therefore, an important remaining theoretical challenge is to articulate the various pathways and mechanisms by which teacher-student relationships have influence. To illustrate this latter point, relations between perceived emotional support from teachers and achievement appear to be mediated by students' mastery goal orientations and self-efficacy (Patrick, Ryan, & Kaplan, 2007), and their social goal pursuit tends to mediate relations between perceived teacher supports and students' prosocial behaviour (Wentzel, 2002). Continued work in this area is essential if we are to understand fully the role of motivation in explaining the unique impact of teacher-student relationships on students' social and academic competencies at school.

Developmental issues require additional attention as well. For example, determining the strength of these mechanisms for students of different ages is essential for understanding developmental changes in the importance of teacher-student relationships. Also important for understanding 'what develops' is a focus on the cumulative effects of having positive relationships with many teachers over time, and their contribution to a student's sense of school community and belongingness. School belongingness measures assess in part, students' perceptions of the quality of relationships with all of their teachers as a group (see Goodenow, 1993; Roeser & Eccles, 1998). The extent to which these more global beliefs develop out of interactions and relationships with single or multiple teachers, and reflect a student's ongoing history of relationships or a single but salient recent relationship are important remaining questions to address in this area of work.

Finally, in this chapter evidence was presented suggesting that models of parenting are generalizable not only to teacher-student relationships but also to peer relationships. Moreover, findings indicate that the impact of relationships on motivation differs as a function of the source of the relationships (teacher vs. peer), but also of the domain of functioning (academic vs. social). Therefore, continued research on the contributions of multiple relationships to student motivation in both academic and social domains is necessary to understanding the multiple social demands and supports that adolescents must coordinate to be successful at school.

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