ADVANCES IN LEARNING ENVIRONMENTS RESEARCH

# Interpersonal Relationships in Education: From Theory to Practice

David Zandvliet, Perry den Brok,
Tim Mainhard and Jan van Tartwijk (Eds.)

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Volume 5



***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.)

# Interpersonal Relationships in Education: From Theory to Practice

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THEO WUBBELS

# FOREWORD

*Theory and Practice in Interpersonal Relationships in Education*

In 2012 on April 11-12, over 100 researchers and teacher educators from more than fifteen countries gathered in Vancouver (Canada) in a pre-conference of the Annual Conference of the American Educational Research Association. They met for the second *International Conference on Interpersonal Relationships in Education*: *ICIRE 2012*. The participants, just as in the first *ICIRE* in 2010 in Boulder Colorado, exchanged research results and discussed the conference theme. Based on the contributions to the first conference, my colleagues and myself edited a book sketching the state of affairs in research on interpersonal relationships in education on several levels of the educational system, such as between teachers and students and between principals and their teachers. The book also offered a rich variety of different theoretical perspectives (Wubbels, den Brok, van Tartwijk, & Levy, 2012). I'm very happy that now editors have succeeded in compiling an intriguing book with several of the very interesting contributions to the second *ICIRE*.

In order to foster productive learning environments that are characterized by supportive and warm interactions, research needs to show what actions teachers can use to help create such environments. Similarly we need more insight in what principals can do to make school environments good places for teachers to learn and develop. Educational and social psychology, teacher and school effectiveness research, communication and language studies and a variety of related fields, all have the potential to help explain how these constructive learning environment relationships can be developed and sustained. However, 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.

In our contribution to the recent second edition of the *Handbook of Classroom Management* (Wubbels et al., in press) we concluded that in order to understand what teachers in their classroom management behaviors can do to improve teacher-student relationships, further research on the interplay between the level of real-time moment-to-moment interactions and generalized perceptions of teacher-student relationships is needed. The

teacher-student interactions (moment-to-moment time scale) are the primary engine of development for teacher-student relationships (macro-level outcomes). It is striking that up to now also only few studies in school settings on interactions in the field of learning environments research did gather data on the real-time scale of the micro level and looked at the interplay between the micro and the macro level. Therefore, I'm happy that in the current volume we find contributions that look at interpersonal relationships and at the same time at the moment-to-moment interactions that build these relationships. Thus, the current volume not only offers theoretical advances on the study of interpersonal relationships, but also insights to bring theory and practice better together. It demonstrates how constructive learning environment relationships can be developed and sustained in a variety of settings. Together, these contributions cover the important influence of the relationships of teachers with individual students, relationships among peers, and the relationships between teachers and their professional colleagues.

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DAVID ZANDVLIET, PERRY DEN BROK, TIM MAINHARD AND
JAN VAN TARTWIJK

# 1. THE THEORY AND PRACTICE OF INTERPERSONAL RELATIONSHIPS IN EDUCATION

In 2010 the first International Conference on Interpersonal Relationships (ICIRE) was held in Boulder, Colorado. The best contributions of this conference were afterwards brought together in the book *Contemporary research on interpersonal relationships in education*, edited by Theo Wubbels and colleagues and published by Sense as part of the *Advances in Learning Environments Research* book series. Since the 2010 conference was such a success, in 2012 a second ICIRE conference was organized in Vancouver, Canada. During the Vancouver conference, over 100 researchers, scholars, teacher educators and others gathered and shared knowledge and experiences during keynote lectures, paper sessions, posters and round table sessions. The current book is a collection of contributions and ideas presented at the 2012 ICIRE conference. After the conference, researchers and authors worked with these ideas and further developed the chapters presented in this book.

The theme of this book: *Interpersonal relationships in education* includes a wide variety of the relationships between actors such as peer relationships in class, teacher and students, school leaders and teachers, teachers and parents. The quality of these relationships is essential for the healthy developments of teachers and students alike (Wubbels, Brekelmans, den Brok, & van Tartwijk, 2006). We know for example that teacher learning thrives when principals facilitate accommodating and safe school cultures.

Clearly, positive teacher-student relationships also contribute to student learning (Wubbels et al., 2006; in press). Educators, parents and students together understand that problematic relationships can be detrimental to the attainment of student outcomes and development (see the contribution by Andrew Martin in this volume). Productive learning environments are characterized by supportive and warm interactions throughout the class (Fraser, 2007; Wubbels et al., 2006): *teacher – student* and *student – student*. Whereas positive teacher-student relationships are important for every child, these are more than a necessary condition for the development of students living and studying in contexts in which there is poverty, inequality or unequal access to the learning opportunities. Promoting social justice, also depends on the quality of teacher-student relationships.

A variety of research perspectives help explain how these constructive learning environment relationships can be developed and sustained. This focus speaks to the *from theory to practice* focus of our work. Contributions for this book have been influenced by educational and social psychology, teacher and school effectiveness research, communication and language studies, and a variety of other fields. What

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all of these perspectives have in common is the practical goal of improving the lives of students and the quality of their educational experiences. What follows here is a summary of the research and perspectives that are shared in the following chapters of book.

In chapter two, Andrew Martin sets the context for other chapters by integrating theory and research in the area of interpersonal relationships. His work examines why interpersonal relationships are important; how relationships assist outcomes; how relationships can be a useful lens through which to understand educational phenomena; and the role of inter-personal relationships in achievement motivation theory, Martin also shares his recent findings from a multi-study research program. Martin relates that three major relationship sources are influential in students' academic and non-academic lives: parents/caregivers, teachers, and peers. Each is linked significantly to students' healthy functioning and development. Martin goes on to relate the numerous benefits attributed to the role of positive interpersonal relationships. Positive interpersonal relationships have been proposed as a buffer against stress and risk, instrumental help for tasks, emotional support in daily life, companionship in shared activities, and a basis for social and emotional development. Relatedness is also shown to positively impacts students' motivation, engagement, and achievement by way of its positive influences on other self-processes relevant to academic outcomes. For example, in the context of a student's life, positive interpersonal attachments to parents, teachers, and peers may foster healthy social, emotional and intellectual functioning, as well as positive feelings of self-esteem and self-worth.

In chapter three, Breeman and colleagues share research in the context of Special Education. Their research considers how vulnerable children can prosper from a positive teacher-child relationship. The aim of their study was to examine developmental links between teacher-child emotional closeness and behavioral problems in children with psychiatric disorders. The association between problem behavior and teacher-child emotional closeness development they examined at multiple intervals over an entire school year. Their results show that children's problem behaviors increased during the year, in contrast to teacher-child emotional closeness which remained relatively stable. Breeman et al. discuss how the higher initial levels of behavioral problems were associated with less teacher-child emotional closeness. Their results suggest that the teacher-child relationship is negatively affected by behavior problems in special education. The implications of these findings for children's development and prevention possibilities are also discussed.

Chapter four presents descriptive research on a model of reflective mentoring developed and implemented by Dyson and Plunkett as a way of enhancing interpersonal relationships between pre-service and mentor teachers involved in a school-based professional experience. Their process of reflective mentoring was developed as an alternative to the more traditional forms of supervision, which feature an intrinsic power relationship in which the student teacher is monitored and assessed by an experienced teacher or university lecturer. The process of reflective mentoring described by Dyson and Plunkett is seen as the underpinning

philosophical and procedural approach used within their primary teacher education program context. They relate how this process, within the school experience practicum, is part of an ongoing process involving the mentor teacher and the pre service teacher. It involves: support and guidance, a relationship built on trust, frequent conversations, the creation of a non judgemental environment and returning to issues and problems for further discussion. The case they describe demonstrates how the maintenance of positive interpersonal communications can impact learning outcomes within their program. The chapter further describes how pre-service teachers and their mentors are introduced to reflective mentoring through a range of approaches including modelling, continuous engagement with professional learning and a series of face to face discussion forums.

The benefits of positive teacher-student relationships are well established. For example, person-centered teacher variables are associated with positive student outcomes. In chapter five, Frelin and Grannäs use spatial theories to explore how teachers and students in secondary education view and navigate middle ground for achieving these positive and professional teacher-student relationships. Their research describes how teachers and students reason about the borderlands of teacher-student relationships and then navigate them. For example, Frelin and Grannäs describe how the teacher-student relationship is a professional one, and that while there is a need for teachers to have both professional closeness and professional distance there are limits to how close teachers and students can get without overstepping professional boundaries. These boundaries establish what is (in) appropriate in these relationships. In their work, Frelin et al. specifically use the term *middle ground* to denote the space in which it will be possible for individuals to emerge in ways that extend beyond given teacher and student roles.

Chapter six presents a longitudinal study exploring the factors affecting learning accessibility for children and adults. In this work, Higgins describes learning accessibility as 'the individual's personal circumstances and experiences located within and across contexts which impede or support that person in accessing learning'. Her study examines the impact on individuals and settings when a school moves beyond its traditional role and responds to the identified needs of the community. The chapter describes a case study of the Kileely Community Project (KCP) that evolved as a grass-roots response to the learning needs of children and adults in low socio-economic status (SES) areas. The chapter describes the context, evolution and impact of the initiative and firmly locates caring respectful interpersonal relationships as a key component in the development and sustainability of the project and the mechanism through which learning accessibility was addressed.

Because education is a fundamentally social enterprise, learning how to enhance the social interactions between teachers, administrators, students, and peers is essential to K-12 and higher education. Thus, improved interpersonal relationships should generate better educational outcomes. In chapter seven, King et al. explore theoretical pathways through which role-taking might improve interpersonal relationships. In their work, they articulate hypotheses connecting role-taking: an approach to taking the perspective of others in order to improve

relationships. They then provide an illustrative example of a virtual environment from the Social Aspects of Immersive Learning (SAIL) project. Through this example, they describe how these ideas about interpersonal relationships might be tested and how the resulting knowledge could lead to improved relationships in educational contexts. For example, King et.al. relate that by taking the perspective of others we might better understand them, and that understanding will pave the way for smoother interactions and relationships. With the development of virtual environments, people can now *walk a mile in the shoes of others* and take the perspectives of others more flexibly, efficiently, and authentically than ever before. Their work describes how virtual environments can allow for the systematic evaluation of these role-taking exercises.

Some educational contexts appear to give rise to more challenging behaviour than others. In particular, the tendency for challenging behaviour to be an issue in contexts of social and economic disadvantage has been noted, and in some cases attributed to a 'disconnect' between the middle class world of teachers and the working class world of students. Chapter 8 explores a classroom management intervention that took place within such a context. Lyons and Higgins describe their work with an intervention, called the Working Together Project, that took place in three schools in Ireland, each of which is located within an area of socio-economic disadvantage. Lyons and Higgins describe how their work was a research and intervention project that grew from an educational network of schools serving the learning needs of children living with urban disadvantage. The project was designed as a practical response to the network's request for research and intervention in the area of classroom management. The project also had a strong focus on interpersonal relationships and emotions. In their research, the data yielded by the project are explored in terms of what they reveal about the nature of emotions and relationships at school and their impact on classroom management.

The study presented in chapter nine investigated within-year changes in teacher-student relationships (TSR) and links with autonomous motivation among first-grade secondary school students in Indonesia. Maulana and Opdenakker use self-determination theory as a theoretical framework to study these relationships and autonomous motivation. In their study, teacher involvement, structure, and autonomy support were key factors and student surveys were conducted in five waves during the school year, for 504 students in the west of Indonesia. Multilevel growth curve modeling was also applied during their data analysis. Their findings, nconsistent with general findings in the western educational context, found that the quality of teacher-student relationships in Indonesian classrooms increased over time. Maulana and Opdenakker describe that relational factors are significant predictors of autonomous motivation. Differences between the Indonesian and western context in teacher student relationships are also discussed.

Research on social networks in schools is also increasing rapidly. Yet, knowledge on how demographic characteristics of teachers and schools affect the pattern of social relationships among educators is scarce. Chapter ten examines the extent to which teachers' work related social networks are affected by teacher and school demographic characteristics. In a study conducted by Moolenaar et al.

survey data were collected among 316 educators from 13 elementary schools in the Netherlands. Using social network analysis, they analyzed the effect of teacher and school demographics on individual teachers' probability of discussing work with their colleagues. The findings indicate that the probability of having work related relationships depends on gender, grade level, working hours, formal position, and experience. The study also discovered that educators tend to prefer relationships with educators of the same gender and from the same grade level. Moreover, years of shared experience as a school team appeared to affect the likelihood of teachers discussing their work together.

Supportive teacher-student interactions are a characteristic of a powerful learning environment and are thought to contribute to student learning. In Chapter eleven, Opdenakker and Minnaert relate how self-determination theory, teacher support and teacher involvement/relatedness play an important role in the fulfillment of students' basic psychological needs and, therefore, to students' motivation and engagement for school. In addition, they emphasize the importance of students' perceptions of their learning environment. Their study is an investigation as to whether students' perceptions of their teacher in relation to the satisfaction of their psychological needs of autonomy, competence and relatedness could explain differences in the (development of) students' academic engagement at the end of primary education. Using multilevel modeling, their study pays attention to the unique and joint effects of the learning environment as well as to student gender, ethnic-cultural background and prior academic engagement. Their results reveal important significant positive effects from all learning environment experiences on the development of students' academic engagement.

Chapter twelve reports on an alternative methodology to evaluate environmental education programs; one that acknowledges the importance of psychosocial and relational factors in educational settings (i.e. learning environment) that can influence students' learning. The study by Ormond and Zandvliet gives a description of place-based education, learning environment research, and environmental learning and discusses how learning environments research has important insights for the field of environmental education. The study illustrates that a positive learning environment as perceived by the student is a predictor of greater learning and that place-based environmental education settings tend to have more positive learning environments. The study by Ormond and Zandvliet also validates the administration of a distinctive questionnaire: the Place-based and Constructivist Environment Survey (or PLACES) for use in Post-secondary education environments. Supporting focus groups and interviews completed the description of these unique and place-based learning environments and the role of interpersonal relationships in supporting student learning.

The social network of an individual is shown to highly condition people's life outcomes: from education to earnings to health outcomes. Although sociologists differ on their ideas as to how social capital is developed, the educational outcomes from it are clear: the social relations that students have with their friends, peers, parents, and parents' network influence their educational aspirations, attainment, and achievement. Chapter thirteen presents a study by Price that focuses on how

the social identities of teenagers influence educational attainment and aspirations. She describes how these relations can be formed at the individual-friend level or at the group-friend level. The study by Price maintains a very tangible definition of peers as 1) those people that teens name as friends and 2) those other teens that teens associate within their activity groups. With these definitions, and the corresponding data about friends and activity groups (or crowds). Price asserts tha this allows a more thorough analysis of the association of peers with social identity and that the mechanisms related to schooling outcomes can be better understood. In her study, the correlates of personal identity, namely the influence of personal attitudes and beliefs, and parent and school context are accounted for so that an estimate of the influence of social identity is more precisely estimated.

In the final chapter (fourteen), Wijsman et al relate that the social context for learning is conceptualized in terms of the interpersonal perceptions students have of their teachers: that is to what degree do students perceive their teacher as conveying agency (i.e., dominance, interpersonal influence) and communion (friendliness, interpersonal proximity) in class. The goal of their study is to show to what extent the perceived interpersonal teacher behaviour is related to the quality of a student's controlled and autonomous motivation. Recent literature in the area of interpersonal relationships has lead to a consensus among researchers that (for students) autonomous motivation (as opposed to control) leads to more volitional persistence, better social relationships, more effective performance, and greater health and well-being (among other outcomes). The extent to which students' motivation is controlled or autonomous, describes a difference in the quality of motivation with autonomous motivation being associated with more positive learning outcomes. Wijsman et al. assert that the social context for this interaction should not be overlooked however other contextual factors, such as teacher structure require further investigation.

In summary, the chapters in this book paint a varied and eclectic selection of works which investigate both the theory and practice of Interpersonal Relationships in Education and their importance for educational processes. In this they draw on a range of methods including: analysis of communication processes; the study of interpersonal perceptions; research on class and school learning environments; research on school or teacher effectiveness; urban and multicultural issues; social justice, inequity and school reform; classroom management and attachment theory. We hope you find these perspectives useful in your work.

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ANDREW MARTIN

# 2. INTERPERSONAL RELATIONSHIPS AND STUDENTS' ACADEMIC AND NON-ACADEMIC DEVELOPMENT

*What Outcomes Peers, Parents, and Teachers Do and Do Not Impact*

## INTRODUCTION

The present chapter integrates theory and research in the area of interpersonal relationships in the academic context. It examines why interpersonal relationships are important, how relationships assist outcomes, how relationships can be a useful lens through which to understand educational phenomena, the role of interpersonal relationships in salient achievement motivation theory, recent findings from a multi-study research program, and a summary of 'connective instruction' as an approach to building interpersonal relationships into the everyday course of pedagogy.

## THREE MAJOR INTERPERSONAL RELATIONSHIPS IN STUDENTS' LIVES: PARENTS, TEACHERS, AND PEERS

Three major relationship sources are influential in students' academic and non-academic lives: parents/caregivers, teachers, and peers. Each is linked significantly to students' healthy functioning and development. In terms of parents/caregivers, better academic functioning has been associated with parents' positive expectations for their child, the academic goals parents hold for the child, consistent feedback on the child's behavior and performance, and the educational values and standards they hold for their child (see Martin & Dowson, 2009 for a review). Empirical work by Mansour and Martin (2009) showed the positive role of parental involvement in students' academic engagement. This is supported by other recent research demonstrating the significant link between parental involvement and educational outcomes (Bempechat & Shernoff, 2012; Pomerantz & Moorman, 2010).

The role of the teacher is also influential in students' academic and non-academic development (Martin, 2013; Martin & Dowson, 2009; Pianta, Hamre, & Allen, 2012; Wentzel, 2010). Students of the view that their teacher cares for them also report learning more (Teven & McCroskey, 1997). In earlier years, adaptive relationships with teachers are associated with enhanced social, cognitive, and language development among young children (Kontos & Wilcox-Herzog, 1997).

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Students' feelings of being accepted by the teacher have been linked to positive emotional, cognitive, and behavioral engagement (Connell & Wellborn, 1991). Similarly, teacher warmth is associated with student confidence (Ryan & Grolnick, 1986). In terms of autonomy-supporting practices, teachers who encourage student autonomy instill greater motivation in their students (Flink, Boggiano, & Barrett, 1990).

The third major relationship source is peers, who are also significantly linked to academic development (Juvonen, Espinoza, & Knifsend, 2012). Positive peer relationships are the basis of much research attesting to their benefits for young people's academic and non-academic functioning (e.g., Juvonen, 2006; Martin & Dowson, 2009; Wentzel, 2010). In terms of motivation and engagement, for example, it has been shown that adolescents immersed in positive interactions with peers are also higher in motivation (e.g., Furrer & Skinner, 2003), evince greater engagement, and demonstrate higher academic performance (e.g., Liem & Martin, 2011).

## THE IMPORTANCE OF INTERPERSONAL RELATIONSHIPS

There are numerous benefits attributed to the role of positive interpersonal relationships. Positive interpersonal relationships have been proposed as a buffer against stress and risk, instrumental help for tasks, emotional support in daily life, companionship in shared activities, and a basis for social and emotional development (Argyle, 1999; ; Battistich & Hom, 1997; De Leon, 2000; Gutman, Sameroff, & Eccles, 2002; Martin, 2013; Martin, Marsh, McInerney, & Green, 2009; Pianta, Nimetz, & Bennett, 1997).

Relatedness also positively impacts students' motivation, engagement, and achievement by way of its positive influences on other self-processes relevant to academic outcomes (Connell & Wellborn, 1991). For example, in the context of a student's life, positive interpersonal attachments to parents, teachers, and peers foster healthy social, emotional and intellectual functioning, as well as positive feelings of self-esteem and self-worth (Martin & Dowson, 2009).

## HOW DO INTERPERSONAL RELATIONSHIPS ASSIST STUDENTS' OUTCOMES?

As reported in Martin (2013) and Martin and Dowson (2009), there are numerous theories and conceptions seeking to explain how interpersonal relationships may assist student outcomes. It has been suggested that social interactions teach students about themselves and about what is needed to fit in with a particular group in the school or classroom (Wentzel, 1999). Additionally, students develop beliefs, orientations, and values that are consistent with their relational environment (Ryan & Deci, 2000). In this way, relatedness in the academic domain teaches students the beliefs, orientations, and values needed to function effectively in academic environments (Ryan & Deci, 2000). These beliefs then function to direct behavior in the form of enhanced goal striving, persistence, and self-regulation (Wentzel, 1999). Through positive relationships, students not only learn that particular beliefs

are useful for functioning in school and the classroom, they also internalize beliefs valued by significant others such as teachers and parents (Wentzel, 1999). In the academic context, for example, good relationships with a particular teacher have a good probability of leading students to internalize some of that teacher's beliefs and values (Martin & Dowson, 2009). Importantly, relatedness is also an important self-system process in itself (Martin, 2013; Martin & Dowson, 2009). For example, positive relationships have an energizing function on the self, working to activate positive mood and affect (Furrer & Skinner, 2003). This energy gained from positive interpersonal relationships provides an important pathway to motivation and engagement (Furrer & Skinner, 2003; Martin & Dowson, 2009).

Further insight into how relationships yield their positive impacts is provided by the 'need to belong' hypothesis. This proposes that "human beings have a pervasive drive to form and maintain at least a minimum quantity of lasting, positive, and significant interpersonal relationships" (Baumeister & Leary, 1995, p. 497). When this need is fulfilled, its fulfillment gives rise to positive emotional responses. These positive emotional responses are believed to adaptively 'drive' students' achievement behavior including their self-regulation, participation, response to challenge, and strategy use (Meyer & Turner, 2002).

## INTERPERSONAL RELATIONSHIPS AS A LENS THROUGH WHICH TO UNDERSTAND EDUCATIONAL PHENOMENA

Interpersonal relationships may also serve as a useful lens through which to understand diverse theories of achievement motivation. Hence, relatedness may provide a useful tool with which to view and understand behavior in the classroom and to address any motivation and engagement issues in the classroom that may be 'other' related (Martin & Dowson, 2009). For example, adjustment and settling difficulties in school have been interpreted in terms of the failure of the learning environment to meet a student's need to belong (Wentzel, McNamara Barry, & Caldwell, 2004).

Because relatedness centrally accommodates the interconnectedness of social, academic, and affective dimensions of the student, by implication, recognition of relatedness on these terms demands that educational programs also recognize this interconnectedness (Martin & Dowson, 2009). Accordingly, the concept of relatedness can provide the impetus for educational programs to accommodate 'the whole self' and its place in the relational academic context. More broadly, because positive relationships may be deemed as valued human outcomes in their own right, they are helpful for better understanding human functioning more widely.

## INTERPERSONAL RELATIONSHIPS IN SALIENT ACHIEVEMENT MOTIVATION THEORIES

In 2009, Martin Dowson and I reported on a somewhat expeditious search of the Education Resources Information Center (ERIC) database. The search was limited to publications that were: (a) journal articles, (b) peer reviewed, (c) dealing with

motivation and/or achievement as keywords, (d) written in English, and (e) published since 2000 (inclusive). Through searches of keyword and/or mapping onto subject headings, this search identified approximately 1500 articles dealing with "self-efficacy", "self-worth/self-esteem", "achievement goals", "goal orientation", "attribution/s", "expectancy/ies", and "self-determination". We considered 'relationships' in the context of theories of: Attribution, Goals, Self-efficacy, Expectancies and Values, Self-worth, and Self Determination.

*Attribution theory* focuses on the causes ascribed to outcomes and events in one's life and the impact of these causal attributions on behavior, affect, and cognition (Weiner, 1986, 1994). From a relatedness perspective, personal attributions may be learnt from the attributional styles of others. Additionally, the specific consequences of attributions (such as a sense of personal control) can also be developed through feedback from and observation of significant others (Hareli & Weiner, 2000, 2002). *Goal theory* focuses on the 'why' of behavior, or reasons for doing what one does (Elliot, 2005; Maehr & Zusho, 2009). From a relatedness perspective, the 'why' can be communicated through the values and expectations of significant others (working at individual, group, and organizational levels) (Martin & Dowson, 2009). *Self-efficacy* refers to a belief in one's capacity and agency to achieve a desired outcome (Bandura, 1997, 2006; Schunk & Miller, 2002). From a relatedness perspective, this sense of capacity and agency can be instilled through direct or vicarious influence, modeling, and open communication from others (Bandura, 1997). Following on from this, *expectancies* and *values* have also been substantively linked to socializers' beliefs, attitudes, and behaviors (Eccles, 1983; Wigfield & Eccles, 2000; Wigfield & Tonks, 2002). *Self-determination theory* focuses on the psychological need for relatedness which is satisfied through the warmth, support, and nurturance of significant others (Deci & Ryan, 2000; La Guardia & Ryan, 2002; Reeve, Deci, & Ryan, 2004). Hence, SDT has relatedness as a pillar. *Self-worth motivation theory* focuses on the link between worth and achievement (Covington, 1992, 1998). It demonstrates that this link is in part determined by relationships in the child's life in which worth, affirmation, and approval are communicated in either conditional or unconditional ways. Taken together, salient achievement motivation theories directly or indirectly rely on or accommodate interpersonal relationships as an important part of their operational and explanatory processes.

## RECENT FINDINGS FROM A RESEARCH PROGRAM INVESTIGATING INTERPERSONAL RELATIONSHIPS

Over the past five years, our research program has investigated diverse aspects of interpersonal relationships and their impact on various academic and non-academic outcomes. This research has traversed multilevel modeling, the role of relationships with teachers, peers and parents, the impact of personality, and even the nature of distant relationships (such as parent-child relationships for students in residential education). An important focus of this research has been to disentangle

what outcomes teachers, parents, and peers do and do not impact. Salient findings from this research program are described.

*Teacher-student Relationships in the Educational Ecology*

Before turning to the impact of interpersonal relationships in the classroom and the role of teacher-student relationships in students' academic and non-academic outcomes, it is important to address the somewhat neglected issue of how much variance in teacher-student relationships there is from student-to-student, class-to-class, and school-to-school. The answer to this question holds significant implications for the level at which to direct educational intervention aiming to enhance teacher-student relationships. For example, if there is substantial variance in teacher-student relationships from class to class, then whole-class intervention is appropriate. If there is substantial variance from student to student, then more individual approaches to relationships are also indicated. This question was the focus of a study by Martin, Bobis, Anderson, Way and Vellar (2011).

Their study was predicated on the fact that education is a hierarchically structured domain, with students nested within classes that are nested within schools. Martin et al. (2011) explored variance for different psycho-educational phenomena at different levels of this hierarchical education structure. A total of 4,383 middle school students were sampled from Year 5 (22%), Year 6 (22%), Year 7 (28%), and Year 8 (28%), located in 257 classrooms, from 47 Australian schools. Multilevel analyses conceptualized a three-level model: student/residual at the first level (Level 1, L1), classroom at the second level (Level 2, L2), and school at the third level (Level 3, L3). Their analyses showed that 88% of the variance in teacher-student relationships was between students (or, at the residual), while 12% of the variance was between classrooms. Interestingly, there were negligible differences between schools in teacher-student relationships after accounting for student- and classroom-level variance.

The implication of these findings is that the bulk of variance in teacher-student relationships resides at the student level – suggesting that teacher-student relationships very much vary from student to student. This also signals something of a challenge for the teacher in ensuring connections with every student in the classroom. Some variance resided at the classroom and thus there is some merit in whole-class approaches to connecting with students – but not at the expense of developing more individual connections with each student.

*Impact of Relationships with Teachers, Parents and Peers*

Having established that individual student-to-teacher relationships explain the bulk of variance in interpersonal connections between student and teacher, the question now is: what are the effects of teacher-student relationships on student motivation and engagement and how do these effects compare with the impacts of parent-child relationships and peer relationships? A further question connected to this is: do

different stakeholders have distinct impacts on different academic and non-academic outcomes?

In a study of 3,450 high school students, Martin and colleagues (2009) found that teacher-student relationships explained the bulk of variance in motivation and engagement. Parent-child relationships accounted for the next greatest variance, followed by same-sex peers, with relatively less variance explained by opposite-sex peers. In further analysis of other outcome variables, relationships with teachers, parents and same-sex peers explained significant variance in literacy and numeracy, whereas opposite-sex peer relationships were negatively associated with these outcomes (Martin, 2012).

Interestingly, however, relationships with opposite peers had significantly positive connections with non-academic self-concept in the form of mental health. Thus, whilst not being particularly adaptive for academic outcomes, the role of opposite-sex peers was clearly adaptive for non-academic outcomes – thus signaling the overarching desirability of interpersonal relationships across multiple dimensions of students' academic and non-academic lives.

In a complementary study, Martin and colleagues (2007) examined the same sample of 3,450 high school students and their relationship with teachers and parents; importantly, in this study, teacher and parent relationship factors were entered simultaneously into the model thereby enabling researchers to estimate unique variance attributable to teachers and unique variance attributable to parents. Findings indicated that relationships with teachers and parents significantly predicted motivation, engagement, self-concept, and general self-esteem. These results thus further demonstrated the distinct role that different relationship sources play in student outcomes. They also underscored the importance of different sources of interpersonal support for adaptive academic and non-academic functioning. Thus, while positive teacher-student relationships are beneficial, positive parent-child relationships further add to the student's functioning.

### *Relationships and School Absenteeism*

In a subsequent study of 8,300 high school students, the role of peers was included alongside teachers and parents in modeling in order to establish their unique effects on enjoyment of school, class participation, and absenteeism (Martin, 2012). Not surprisingly, relationship with teachers, parents, and peers positively predicted school enjoyment and class participation. Interestingly, however, after controlling for shared variance with peers and parents, only teacher-student relationships significantly predicted absenteeism (negatively; such that poorer relationships with teachers predicted higher absenteeism). In explaining this finding, Martin suggested that most students can navigate through the day staying away from most students with whom they have negative relationships. However, if they have a negative relationship with their classroom teacher, they cannot avoid that teacher. Given the inescapable nature of this poor

relationship, it may be that school absenteeism is seen by the student as the most viable solution.

*Same-sex and Opposite-sex Peers*

Having dedicated much focus to teachers and parents, our research program oriented more closely to peer relationships and their impact on student outcomes. In particular, we investigated the role of peers in students' academic engagement and the subsequent impact of relationships and engagement on student outcomes (Liem & Martin, 2011). We posed the following questions: does engagement mediate the link between peer relationships and academic and non-academic outcomes and, are there different effects for same-sex vs. opposite-sex peer relationships? Findings from a study of 1,436 high school students indicated the rather substantial role played by same-sex peers in predicting academic engagement, academic performance, and general self-esteem. Interestingly, the role of opposite-sex peers was more focused on non-academic outcomes, with a significant direct link to general self-esteem but no link to academic performance. Once more, these findings suggest that students' relationships with different significant others have distinct effects on different academic and non-academic factors. Thus, specific outcomes are impacted differently by relationships with same-sex peers and opposite-sex peers.

*Balancing Multiple Teacher-Student Relationships in the Classroom*

In the classroom context it is challenging for the teacher to connect to each student in a qualitatively intensive and equal way. As a student connects with the teacher, that student must also accept that the teacher needs to connect with other students in the class. Thus, there is tension between how much the teacher must attend to an individual student and how much that teacher must attend to other students in the class. This tension may represent something of a zero-sum game in that time dedicated to one student is time not dedicated to other students. What are the implications of this for students' motivation and engagement?

Research reported by Martin (2012) examined the extent to which the teacher's interest in a student impacts that student's motivation and engagement and the extent to which the teacher's interest in the class impacts the student's motivation and engagement. In this study of 4,383 middle school students, respondents were asked to report on the teacher's interest in them and to also report on the teacher's interest in other students in the class. Under focus was the relationship between the two reports and students' motivation and engagement. It was found that the teacher's interest in the individual student significantly predicted that student's motivation and engagement; but that the teacher's interest in the class had no impact on the individual student's motivation and engagement.

This finding suggests a very subjective experience of the teacher such that a student's motivation and engagement rests much more on the teacher's interest in

that student than the teacher's interest in the class as a whole. This very subjective and individualized impact of the teacher demonstrates the challenging task ahead of teachers as they seek to balance their attention to each student in their classroom whilst ensuring academic motivation and engagement is sustained.

### *The Quality of Distant Parent-Child Relationships*

Thus far, the discussion has centered on physically proximal relationships occurring in the classroom and in the home. More recent research has investigated distant relationships (Papworth, Martin, Ginns, Liem, & Hawkes, 2012). With a sample of 5,198 high school students, this research explored the nature of parent-child relationships for students in boarding school and compared these relationships with students in day school. The students in boarding school are physically distant from their parents and the students in day school are physically proximal to their parents. Under question was the extent to which 'absence makes the heart grow fonder'.

In fact, boarding school students reported significantly more positive relationships with their parents than did the day school students. When asked to rate their relationship with teachers, there was no significant difference between boarders and day students. Interpreting these findings, Papworth and colleagues (2012) posited that the daily challenges of homework and the like were now the responsibility of the boarding school. Thus, areas of parenting where there is typically conflict between parent and child are no longer a source of conflict for boarding students. In addition, with many negative parent-child interactions no longer present, there ensued greater scope for positive interactions, thus further amplifying positive dimensions of the parent-child relationship for boarders.

### *The Role of Personality in Interpersonal Relationships*

In the aforementioned Papworth et al. (2012) study, we also examined personality factors that predict good parent-child and good teacher-student relationships. The study assessed students on the Big 5 personality factors: extraversion, conscientiousness, neuroticism, openness, and agreeableness (McCrae & Costa, 1996). Across the two relationship dimensions (with parents and with teachers), two personality factors were consistently influential: agreeableness and conscientiousness. Conscientiousness is associated with responsibility, reliability, effort, and the drive to achieve and complete goals. Agreeableness refers to the extent to which an individual feels part of a larger community and is concerned with interpersonal relationships (McCrae & Costa, 1996). Thus, attending to students' agreeableness and conscientiousness may be an avenue of promoting more positive interpersonal connectedness. Although some commentators claim that personality is relatively fixed, other work (e.g., under free trait theory; Little, 1996; Little & Joseph, 2007 and in intervention meta-analyses; Jorm, 1989) suggests personality is not immutable. In addition, the reader is directed to the

review by Ginns and colleagues (2011) who describe how individuals can be taught to change behavior, cognition and affect in the face of personality attributes that might otherwise leave them 'stuck'.

## INTEGRATING RELATIONSHIPS INTO THE EVERYDAY COURSE OF PEDAGOGY: CONNECTIVE INSTRUCTION

In terms of applications to practice, for the purposes of the present chapter, the discussion will focus on teacher-student relationships. To the extent that interpersonal relationships are an important factor in student outcomes, teachers who develop their practice in relational terms are more likely to facilitate motivated and engaged students (Martin & Dowson, 2009). The concept of 'connective instruction' was developed to provide guidance on how to effectively integrate interpersonal relationships into the everyday course of pedagogy (Martin, 2010, 2013; Martin & Dowson, 2009; also see Munns, 1998).

Given the very full curriculum in most education systems, it is a reality that teachers do not have a great deal of time to solely dedicate to building relationships with students. It is also realistic to advise that 'perfect' teacher-student relationships are probably not needed (or possible) across the student body. Instead, for most students there will be a need for a positive, functional, working relationship with the teacher – and for some students (e.g., those with additional needs), the relationship may be somewhat closer to ensure individual needs are better met. Thus, the focus here is on how to build positive interpersonal relationships into the everyday course of pedagogy.

As noted, Martin proposed 'connective instruction' as one such approach. Connective instruction is that which connects the teacher to students on three levels: interpersonal, substantive, and pedagogical. The 'interpersonal relationship' refers to the connection between the student and the teacher (i.e., the human connection). The 'substantive relationship' refers to the relationship between the student and the subject matter, content, and nature of tasks in the teaching and learning context. The 'pedagogical relationship' refers to the relationship between the student and the teaching or instruction itself. Considered another way, Martin (2013) proposed that connective instruction refers to the 'who' (interpersonal), 'what' (substantive), and 'how' (pedagogical) of the teacher-student connection. Thus, students are optimally motivated and engaged when they connect to 'who' the teacher is, 'what' the teacher is saying and 'what' tasks and activities are being administered, and 'how' the teacher administers these messages and tasks. In more creative terms, one may liken a terrific lesson to a terrific musical composition: a great singer ('who'), a great song ('what'), and great singing ('how'). As Martin and Dowson (2009) report, connective instruction explicitly positions relatedness as an instructional need and that academic development is promoted when this need is met.

Martin (2011) has developed self-audit sheets for teachers on connective instruction (see Appendices A, B, and C; also downloaded from www.lifelongachievement.com). Each self-audit sheet presents an indicative ten

items for teachers to consider. These items tap into the three dimensions of connective instruction. Thus, a teacher is able to score him/herself up on ten features for each of the 'interpersonal relationship', 'substantive relationship', and the 'pedagogical relationship'. This enables ready identification of strengths for the teacher to sustain – and areas of improvement on which the teacher might like to focus that term or semester.

## CONCLUSION

There are substantial data showing that positive interpersonal relationships are important for healthy human functioning; a source of happiness and a buffer against stress; and, instrumental in help for tasks, challenges, and emotional support in daily life. There is also a long line of research and theory emphasizing the substantial role that interpersonal relationships play in students' academic success and engagement and motivation at school. More recent research has progressed current understanding of the distinct roles that different people play in impacting distinct dimensions of students' academic lives. Recent theorizing has also posited a multidimensional framework ('connective instruction') that can assist educators to better integrate relatedness into the everyday course of pedagogy and classroom life. Taken together, research, theory, and practice in the area of relationships attest to the importance of interpersonal connections for healthy human functioning and effective ways to optimize these connections.

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APPENDIX A: CONNECTIVE INSTRUCTION – INTERPERSONAL RELATIONSHIP

Students' relationship with the teacher ('the Singer')
(reproduced with permission from Lifelong Achievement Group – visit www.lifelongachievement.com to download)

| | ***STRENGTH*** "I do this well and it is a part of my regular practice" | ***NOT APPLICABLE/ RELEVANT/ IMPORTANT*** | ***COULD DO BETTER*** "I don't do this very much or very well" |
|---|---|---|---|
| | TICK ONE (✓) | | |
| I make an effort to listen to my students' views | | | |
| A good teacher-student relationship is one of my priorities | | | |
| I give my students input into things and decisions that affect them | | | |
| I enjoy working with young people | | | |
| Where appropriate I try to have a sense of humor with my students | | | |
| I get to know my students | | | |
| I explain the reasons for rules that are made and enforced | | | |
| I show no favoritism | | | |
| I accept my students' individuality | | | |
| I have positive but attainable expectations for students | | | |
| **TALLY** | | | |

APPENDIX B: CONNECTIVE INSTRUCTION – SUBSTANTIVE RELATIONSHIP

Students' relationship with the message/content/assessment ('the Song')
(reproduced with permission from Lifelong Achievement Group – visit www.lifelongachievement.com to download)

| | ***STRENGTH*** "I do this well and it is a part of my regular practice" | ***NOT APPLICABLE/ RELEVANT/ IMPORTANT*** | ***COULD DO BETTER*** "I don't do this very much or very well" |
|---|---|---|---|
| | TICK ONE (✓) | | |
| I set work that is challenging but not too difficult | | | |
| Where possible, I set work that is important and significant | | | |
| I inject variety into my teaching content | | | |
| I inject variety into my assessment tasks | | | |
| I provide students with interesting work | | | |
| I use broad and authentic (relevant and meaningful) assessment | | | |
| I try to ensure that my teaching content is not boring to young people | | | |
| In class and assigned work, I reduce monotony as much as possible | | | |
| Where possible I draw on material that is fun to learn | | | |
| Where possible I use material that arouses my students' curiosity | | | |
| **TALLY** | | | |

APPENDIX C: CONNECTIVE INSTRUCTION – PEDAGOGICAL RELATIONSHIP

Students' relationship with the teaching/pedagogy ('the Singing')
(reproduced with permission from Lifelong Achievement Group – visit
www.lifelongachievement.com to download)

| | ***STRENGTH*** "I do this well and it is a part of my regular practice" | ***NOT APPLICABLE/ RELEVANT/ IMPORTANT*** | ***COULD DO BETTER*** "I don't do this very much or very well" |
|---|---|---|---|
| | TICK ONE (✓) | | |
| I get students to do something well as much as possible and provide support needed to do this | | | |
| I have multiple indicators of success in schoolwork (marks, effort, group work, reaching goals, improve) | | | |
| I provide clear feedback to students focusing on how they can improve | | | |
| I make an effort to explain things clearly and carefully | | | |
| I inject variety into my teaching methods and reduce repetition or monotony | | | |
| I encourage my students to learn from their mistakes | | | |
| I aim for mastery by all students | | | |
| I show students how schoolwork is relevant and/or meaningful | | | |
| I make sure all students keep up with work and give opportunities to catch up or go over difficult work | | | |
| I don't rush my lessons or my explanations | | | |
| **TALLY** | | | |

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# 3. PROBLEM BEHAVIOUR AND THE DEVELOPMENT OF THE TEACHER-CHILD RELATIONSHIP IN SPECIAL EDUCATION

## INTRODUCTION

In Europe, inclusion of students with special educational needs (SEN) in general education is common practice. However, mainstream education cannot provide all children with the necessary care and education. Therefore, in the Netherlands, approximately 2% of all children are placed in schools for special education (Roeters, 2012; Smeets, 2007). One third of these children in special elementary education cope with psychiatric disorders, such as attention deficit hyperactivity disorder or autism spectrum disorder (Smeets, 2007). Children with these disorders often display behavior that disrupts the educational process, such as out-of-seat behavior, verbal disruptions and aggressive behavior (Albrecht, Johns, Mounsteven, & Olorunda, 2009; Greene, Beszterczey, Katzenstein, Park, & Goring, 2002), which precludes them from attending general education. This disruptive behavior may pose a challenge for teachers in special education to build the supportive relationship that is required to properly educate and care for children with psychiatric disorders. The aim of this study is to examine the developmental links between behavior problems and teacher-child emotional closeness among children with psychiatric disorders placed in schools for special education across one school year.

Children's classroom behavior problems may threaten the establishment of a positive and supporting educational context in which children can optimally flourish. In general education, it has been found that a single disruptive child may disrupt the educational process of all children in class (Carrell & Hoekstra, 2010). Moreover, behavior problems can be regarded as an important threat to children's own development, as several studies have showed behavior problems to be highly predictive of poor prognoses in academic achievement (Frazier, Youngstrom, Glutting, & Watkins, 2007). Reported long term effects also include higher prevalence of substance abuse, juvenile delinquency and mental health service referrals (Broidy et al., 2003; Fergusson & Lynskey, 1997; Verhulst, Koot, & Van der Ende, 1994). Several studies have also shown that children's disruptive behavior has a negative impact on the relationship these children have with their teachers (Doumen, Verschueren, Buyse, Germeijs, & Luyckx, 2008; Leflot, van Lier, Verschueren, Onghena, & Colpin, 2011; Mercer & DeRosier, 2008), indicating that children with disruptive behaviors are at risk of encountering an

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educational environment characterized by low teacher support. As a supportive and emotionally close teacher-child relationship is also positively related to children's academic achievement (Birch & Ladd, 1997; Roorda, Koomen, Spilt, & Oort, 2011; Valiente, LemeryChalfant, Swanson, & Reiser, 2008) and has been found to reduce the chance of developing behavior problems (Hughes, Cavell, & Jackson, 1999; O'Connor, Dearing, & Collins, 2011; Silver, Measelle, Armstrong, & Essex, 2005), having a supportive and close relationship with the teacher may protect vulnerable children from further developing adverse outcomes. In addition, studies in general education showed that positive social experiences and warm relations in the classroom may be particularly important for students at risk, including students with significant social, behavioral and emotional problems (Baker, 2006; Hamre & Pianta, 2005). For example, Baker (2006) has found that children with developmental vulnerabilities and an emotionally close teacher-child relationship, significantly improved relative to similarly affected peers who lacked such relationships. Since teachers' emotional closeness is essential for the development of vulnerable children with psychiatric problems, it is important to simultaneously examine the development of children's behavioral problems and teacher-child emotional closeness during the school year.

There are some studies in general education that have examined the development of children's behavior and the teacher-child relationship across one or more school years. It has been found that behavioral problems tend to increase across the first few years of elementary school (Silver et al., 2005; Witvliet, Lier, Cuijpers & Koot, 2009). On the other hand, findings on the development of teacher-child emotional closeness across the school year are inconclusive. Reported results range from high stability in teacher-child emotional closeness (Koomen et al., 2007) to a decrease in teacher-child closeness across the year (Opdenakker, Maulana & den Brok, 2012).

It is important to note that all studies described above have used general education samples. To our knowledge, it is unknown how children's behavioral problems and the teacher-child relationship simultaneously develop among children placed in special education due to having psychiatric disorders. Given that such children generally display heightened levels of disruptive behaviors, teaching these children can be a challenging task, as behavior problems are an important cause of teacher stress (Greene et al., 2002; Orpinas & Horne, 2004). It is therefore likely that disruptive behavior development is negatively related to the development of an emotionally close teacher-child relationship among children placed in special education. On the other hand, teachers in special education have chosen to educate and care for children with special needs. They often have received additional training and are provided with further resources, such as support from classroom assistants or remedial teachers, to cope with their students' behavior problems and special needs (Albrecht et al., 2009). It is therefore uncertain if developmental links between children's behavior problems and the teacher-child relationship in special education are comparable to those found in general education.

Thus, although not specifically studied among a clinical sample of children, some studies suggest that teacher-child emotional closeness may be especially beneficial to children with psychiatric disorders in special education. Therefore, in this study, we will examine the developmental links between children's behavior problems and teacher-child emotional closeness over the course of one school year. In line with previous findings from general education, we expect a negative association between the level and development of children's disruptive behavior and the level and development of teacher-child emotional closeness in special education.

## METHODS

### *Participants*

All children in grades 1-6 placed in one of the five participating primary special education schools (23 classrooms) were approached to participate in a longitudinal study (N = 233). For 82% of the children (n = 190), written informed parental consent was obtained prior to their participation in the study. Children (91% boys) had a mean age of 10.07 years (range 5-13 years) and a mean IQ of 95 (range 62-143). All children had at least one psychiatric disorder, most frequently in the disruptive behavior spectrum (attention deficit hyperactivity disorder (ADHD), oppositional deficit disorder (ODD), conduct disorder (CD)), or autism spectrum disorder (ASD). Furthermore, 44% had comorbid psychiatric disorders. Data were collected at the beginning of the school year ($T_{0,}$ autumn), halfway through the school year ($T_{1,}$ winter) and at the end of the school year ($T_{2,}$ early summer). During the course of the one-year follow-up, 13 children dropped out of the study because they changed schools, resulting in a study sample of 177 children. Thirty-three children changed teachers during the school year. As we focused on stable teacher-child dyads, these children were excluded from the analyses resulting in a final sample of 144 children. Children lost to follow-up did not differ from the other children at baseline regarding demographic characteristics and study variables. The study was approved by the Dutch Medical Ethics Committee for Mental Health Care (METiGG).

### *Measurements*

Teacher ratings of children's behavior problems were collected using the Problem Behavior at Schools Interview (PBSI; Erasmus Medical Center, 2000). The PBSI is a 43-item questionnaire in which teachers' perceptions of children's behavioral and emotional problems are rated on a 5-point scale ranging from 1 (*never*) to 5 (*very often*). The Behavioral Problems scale was composed of three subscales (ADHD 8 items, ODD 7 items, CD 12 items; range of correlations between the subscales: .62-.80; example item "*This child disobeys teachers' instructions*"). The internal consistency of the Problem Behavior subscale was good; Cronbach's alpha ranged

from .95 to .96 for each time point. Missing data ranged from 0%-1% for each measurement occasion.

Teacher reports of the teacher-child relationship for all individual children in class were collected using the closeness subscale (11 items, Cronbach's alpha .88-.90) of the Student-Teacher Relationship Scale (STRS; Koomen, Verschueren, & Pianta, 2007; Pianta, 2001). Teachers rated items such as "*I share an affectionate, warm relationship with this child*", on a 5-point scale ranging from 1 (*definitely does not apply*) to 5 (*definitely applies*). Missing data ranged from 0%-1% for each measurement occasion. Concurrent and predictive validity of the STRS have been established (Pianta, 2001).

### *Data analysis*

The analyses were conducted in two consecutive steps. First, we fitted two separate growth models, one for problem behavior development and one for the development of the teacher-child relationship. A growth model estimates two latent variables: the intercept (estimated starting point) and the slope (estimated growth curve), using repeated measures across the three time points of this study. This was done to examine the significance of the variances of the growth parameters and to determine the fit of the separate growth models to the data.

Next, the developmental links between behavior problems and the teacher-child relationship were analyzed using a parallel process latent growth model, which estimates the associations between the growth parameters (intercept and slope) of these variables. In this model, the associations between the intercept of behavior problems to the slope of the teacher-child relationship, and from the intercept of the teacher-child relationship to the slope of behavior problems were allowed. However, these pathways were small and non-significant. To decrease the number of free parameters to be estimated, which was desired to preclude having more free parameters than clusters, these pathways were fixed to zero.

All analyses were conducted using Mplus version 5.1 (Muthén & Muthén, 1998-2007). Evaluation of overall model fit was determined by examining multiple indices of fit; the comparative fit index (CFI), the Tucker–Lewis Index (TLI) and the root mean square error of approximation (RMSEA). The following criteria for model acceptance for each fit index were used: CFI = 0.95, TLI = 0.95, and RMSEA = 0.06 (Hu & Bentler, 1999). To handle missing data and to account for possible non-normality of outcome variables, we used maximum likelihood estimation with robust standard errors (MLR). To account for the hierarchical structure of the data, standard errors were adjusted at the class level using the cluster sampling module in Mplus.

## RESULTS

The means and standard deviations of the study variables at the three time points are presented in Table 1.

*Table 1. Means and standard deviations of study variables*

| Assessment | Behavior problems | | Teacher-child closeness | |
|---|---|---|---|---|
| | *M* | *SD* | *M* | *SD* |
| $T_0$ (autumn) | 2.36 | 0.73 | 41.08 | 7.83 |
| $T_1$ (winter) | 2.45 | 0.75 | 40.45 | 8.38 |
| $T_2$ (early summer) | 2.51 | 0.71 | 40.40 | 8.08 |

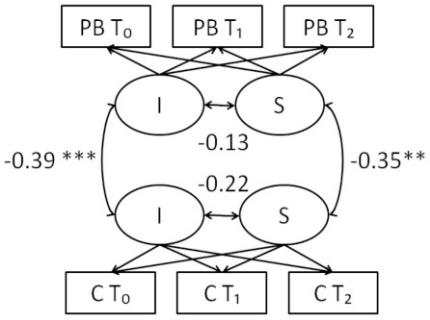
Results from the two separate growth models showed significant variances for the growth parameters (Table 2). Significant changes in development across the school year, as indicated by significant slope means, were only found for children's behavior problems. In general, children's problem behavior increased 6% during the school year.

*Table 2. Means and variances of growth parameters and model fit indices*

| Model | Intercept | | Slope | | CFI | TLI | RMSEA |
|---|---|---|---|---|---|---|---|
| | *Mean* | *Variance* | *Mean* | *Variance* | | | |
| Behavior problems | 2.36*** | 0.46*** | 0.08** | 0.03*** | 1.00 | 1.00 | 0.03 |
| Closeness | 41.02*** | 49.91*** | -0.33 | 5.95* | | | |

*Note.* * = $p < .05$, ** = $p < .01$, *** = $p < .001$

Next, we fitted a parallel process growth model of children's problem behavior and the teacher-child relationship (Figure 1). This model showed good fit to the data (Table 2). Initial level of problem behavior (intercept) was negatively associated with initial level of emotional closeness ($\beta$ = -0.39, $p$ <.001). This is a medium effect (Cohen, 1988) and suggests that higher levels of problem behavior at the first assessment were associated with a poorer teacher-child relationship at the start of the school year. In addition, the development of problem behavior (slope) was negatively associated with teacher-child emotional closeness




*Note. PB* = problem behavior, *C* = closeness. Estimates are standardized regression coefficients; ** = $p<.01$, *** = $p<.001$

*Figure 1. Parallel process growth model of problem behavior and teacher-child closeness*

development ($\beta = -0.35$, $p < .001$). This medium effect suggests that an increase in behavior problems was associated with a decrease in teacher-child emotional closeness across the school year.

## DISCUSSION

The current study examined the developmental links between behavior problems and teacher-child emotional closeness of children with psychiatric disorders in special education across one school year. In general, behavior problems increased slightly during the school year while teacher-child emotional closeness remained relatively stable. In addition, we found that these developments were significantly and negatively related, indicating that if an increase in behavior problems did occur, it was associated with a decrease in teacher-child emotional closeness.

The finding that behavior problems increased slightly during the school year does not appear to be specific for this special education population. Although previous research on problem behavior development encompasses more than one school year, several longitudinal studies showed similar results regarding externalizing behavior in general education. For example, Witvliet, Lier, Cuijpers, and Koot (2009) found that teacher-reported externalizing behavior was characterized by an increase over a period of two years. Similarly, a study by Silver, Measelle, Armstrong and Essex (2005) found that teacher-reported externalizing behavior tended to increase slowly from kindergarten through third grade. However, as children with psychiatric problems in special education already cope with relatively high levels of behavior problems, and given the increased risks on a range of future adversities that are associated with such behavior in childhood, (Broidy et al., 2003; Fergusson & Lynskey, 1997; Verhulst et al., 1994), the increase we found in our study can be regarded as a worrisome development.

On the other hand, we found teacher-child emotional closeness to remain relatively stable during the school year. This is in line with previous findings in general education studies that found high stability in teachers' perception of teacher-child emotional closeness (Koomen et al., 2007), and suggests that once established, teachers' view on their relationship with a specific child does not change much during the school year. However, these findings deviate from a study by Opdenakker, Maulana and den Brok (2012) that found teacher-child emotional closeness to slowly decline over the school year. Although our raw means did show a slow decline across the school year, this decrease was not significant. The study by Opdenakker et al. (2012), however, used student ratings instead of teacher ratings of teacher-child emotional closeness, which may account for the different results. It has been found that teachers and students tend to disagree in their perception of the teacher-child relationship. Specifically, approximately two-thirds of all teachers rate their interpersonal behavior more favorably when compared to students' ratings of their teachers' interpersonal behavior (Wubbels, Brekelmans, & Hooymayers, 1992). In addition, the Opdenakker et al. (2012) study was performed among first grade students in secondary education, a school environment and population quite different from the elementary school children

that were under investigation in our study and the study by Koomen et al (2007). Combining teachers' and students' perspectives for different age groups may offer more insight in these differences. With regard to our findings, it is important to note that even though children's problem behavior in special education is more severe than in general education, mean teacher-child emotional closeness scores as found in this study's population were approximately the same as mean teacher-child emotional closeness scores found in general education (Koomen et al., 2007). Although teacher-child closeness was relatively stable during the school year, the significant slope variances indicated that there were significant individual differences in the development of the teacher-child relationship in our study. Specifically, children whose behavior problems increased were found to have a decrease in teacher-child emotional closeness. Such developmental links between problem behavior and the teacher-child relationship were also previously found in general education (Meehan, Hughes, & Cavell, 2003; O'Connor et al., 2011; Silver et al., 2005). Our results thus extend research regarding the importance of children's disruptive behavior for their relationship with the teacher reported in other studies (Baker, 2006; Doumen et al., 2008; Hamre & Pianta, 2005). Though not unique for special education (Greene et al., 2002), these developmental associations may suggest that teachers in special education find it difficult to handle children with many behavioral problems. This may contribute to the developmental risks of these children. One study indeed found that children with psychiatric disorders placed in special education have a high risk of adverse outcomes (Heijmens Visser, van der Ende, Koot, & Verhulst, 2003). As a decrease in teacher-child emotional closeness may indicate a negative and non-constructive way of teachers dealing with these children's disruptive behavior, and may thereby threaten their future prospects, creating a close and supportive environment can be considered an important topic in schools for special education, as this may be beneficial to both children with psychiatric disorders and their teachers.

*Recommendations*

Teachers play an important role in creating a supportive classroom environment as they are key actors in construing social classroom processes. Based on the results of this study, we recommend to provide teachers with special training to be aware of their possible negative responses to disruptive behavior and to find positive ways to handle children's classroom behavior problems as not to jeopardize their relationship with them. Such an intervention can encompass teaching practices like targeting the frequent use of praise, which has been shown to positively impact children's behaviors (Gable, Hester, Rock, & Hughes, 2009), and may also benefit children's academic development (Sutherland, Wehby, & Copeland, 2000). Moreover, investing in a positive teacher-child relationship may contribute to teachers' wellbeing (Spilt, Koomen, & Thijs, 2011), by increasing teachers' motivation and capacity for creating a supportive classroom environment for these vulnerable children in special education. An intervention that provides teachers

with a practical training in focusing on children's positive behavior might make a difference for these children's behavioral, social and academic development.

*Limitations*

This study had some limitations. First of all, boys were overrepresented in this study sample as they are in special education (Smeets, 2007). Due to the low number of girls in this sample, it was not possible to test whether developmental links were similar across boys and girls. Many studies in general education have shown that girls differ from boys with regard to the level of behavior problems and teacher-child emotional closeness (Pianta, 2001; van Lier, Vuijk, & Crijnen, 2005).

A second limitation is that we used the teacher as informant on both children's behavior problems and teacher-child emotional closeness. The association between these constructs may be overestimated as the same informant rated both these outcome measures, reflecting in part a general attitude towards the child. This is problematic since it has been found that teachers and students tend to disagree in their perception of the teacher-child relationship (Wubbels et al., 1992; Maulana et al., 2011). However, teachers are the natural informants about children's classroom behavior and their perspective on the relationship may be what counts when it comes to their own efforts in creating a supportive classroom environment. Nevertheless, it would be worthwhile when they are aware of their students' perspectives to optimize these efforts. Therefore, it is advisable that future studies incorporate both teachers' and children's observations of the teacher-child relationship.

Finally, this study showed that when behavior problems increased during the school year, teacher-child emotional closeness decreased. However, our analyses do not allow for conclusions about the directionality of these effects. Research in general education samples generally showed that children's externalizing behavior preceded and predicted lower levels of teacher-child closeness, rather than the other way around (Doumen et al., 2008; Mercer & DeRosier, 2008). For future research, it would be interesting to go beyond developmental associations, and examine the directionality of these effects for children in special education, as this knowledge may be of importance in creating the supportive environment that these vulnerable children need.

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MICHAEL DYSON AND MARGARET PLUNKETT

# 4. ENHANCING INTERPERSONAL RELATIONSHIPS IN TEACHER EDUCATION THROUGH THE DEVELOPMENT AND PRACTICE OF REFLECTIVE MENTORING

## INTRODUCTION

This chapter presents research on a model of reflective mentoring developed and implemented as a way of enhancing interpersonal relationships between pre service and mentor teachers involved in a longitudinal school-based professional experience. The process of reflective mentoring (Dyson, 2002) was developed as an alternative to the more traditional forms of supervision, which tend to involve a power relationship in which the student teacher is monitored and assessed by an experienced teacher or a university lecturer. The student teacher in traditional models are supervised, in order to meet the expectations of the more experienced person, who is deemed to know what is best practice.

The process of reflective mentoring described in this chapter was originally developed in 2002 and became the underpinning philosophical and procedural approach used within the primary teacher education program at one of Australia's largest universities, particularly relating to the final year internship. Reflective mentoring in this context was specifically influenced by a range of theoretical perspectives beginning with Korthagen's (1999) ALACT model of teacher reflection, which linked reflection with teacher competencies. The implementation of reflective mentoring supports the enhancement of interpersonal relationships whilst recognising the broader implications and issues facing education and teacher education in the 21st century. The process, within the school experience practicum, deals not with stand-alone single events but is part of an ongoing process involving the mentor teacher and the pre service teacher. It involves: support and guidance, a relationship built on trust, frequent conversations, the creation of a non judgemental environment and returning to issues and problems for further discussion. Pre service teachers (PSTs) and their mentors are introduced to reflective mentoring through a range of approaches including modelling, continuous engagement with professional learning and a series of face to face discussion forums.

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## BACKGROUND TO THE STUDY

The aim of this chapter is to report on the development, implementation and refinement of the original reflective mentoring model and to highlight the value of such an approach in enhancing interpersonal relationships and developing mentors/mentees capable of deep and focused reflection. The original research, which began in 2002, sought to validate a model of reflective mentoring that was built on Korthagen's (1999) ALACT model. Further research was then conducted in 2006 to refine the model to incorporate feedback from mentors and mentees who were utilising it in their school experience practicum relationships.

There were a number of questions guiding this research relating to validation of the model, including: How do mentor teachers and their pre-service teacher mentees experience the process of reflective mentoring? How might the process be enhanced? Has it assisted interns understand what it means to be a teacher? And has the process helped in establishing a positive relationship between mentor/mentee?

The reflective mentoring process was embedded in the Internship, which constitutes the final year of the Primary Education course at Monash University, Gippsland. The interns, that is, the pre service teachers (PSTs) spend the first weeks at a school working closely with their mentor teachers to establish a relationship with their class, which is scaled back to two days per week once university classes begin. They remain with their class and their mentor teacher for the entire school year and develop strong relationships with the school and community. In order to enhance these interpersonal relationships it was considered desirable that mentoring within the schools needed to be focused on a shared professional and reflective learning experiences involving the university as well as the school and the pre service teacher. These experiences were designed to facilitate both modelling as well as a supportive integrated approach. It was anticipated that a process of reflection, that had been theorised and formalised, would provide greater opportunities for interrogating and refining current conceptualisations and approaches to educating teachers for the 21st century.

## SIGNIFICANCE OF THE RESEARCH

The original theorisation of the model of Reflective Mentoring (Dyson, 2002) was developed for PSTs at the Gippsland campus of Monash University. The theoretical underpinning of the process was based on Korthagen's (1999) theorisation of the cyclical interrelationship between action and reflection as described in the next section (Figure 1) and the then National Competency Framework for Beginning Teachers (NPQTL, 1996). However, interactions between mentor teachers and PSTs during university based professional learning sessions and through data gathering in Gippsland indicated that there were also other dimensions to the reflection process, and relationships, that had not been captured in the existing literature. The research discussed in this chapter was conducted in an attempt to clarify aspects of the reflection process and the

importance of interpersonal relationships that had not been adequately articulated within existing teacher education models. The refinement of the model through an implementation phase and subsequent redevelopment represents the integration of

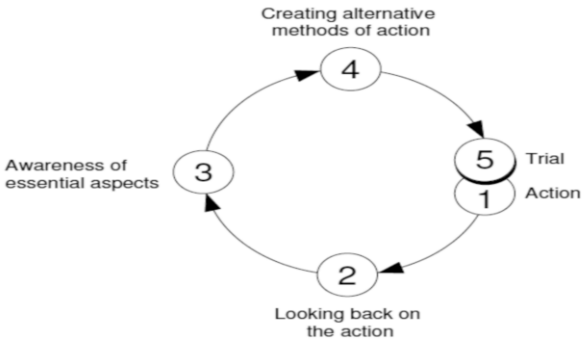


*Figure 1. The ALACT model of reflection (Korthagen, 1999)*

a range of diverse but complementary theories that work together to inform the practice of reflective mentoring which has the potential to provide an effective model to assist all those involved in teacher education and other professions.

## CONCEPTUAL FRAMEWORK

Reflection has a long association with the process of 'mentoring', which has been described by Fletcher (2000) as potentially creating "a one-to-one professional relationship that can simultaneously empower and enhance practice" (p. xii). Korthagen (1999) describes reflection as "the mental processes of structuring or restructuring an experience, a problem, existing knowledge and insights" (1999, p. 192). This supports Schön's (1983) position that the capacity to reflect on action so as to engage in a process of continuous learning was one of the defining characteristics of professional practice (Atherton, 2011). Korthagen (1999) suggests that since the 1980's the relationship between reflection and practice has been reframed by paying more attention to the development of the whole person. In recognising this relationship between reflection and practice he developed the ALACT model of reflection (named after the first letter of the five phases), which focuses on a process of learning in and from practice. The model is based on five phases: (1) Action, (2) Looking back on the action, (3) Awareness of the essential aspects of the action, (4) Creating alternative methods of action or actions, and (5) Trial, which itself is a new action and thus the starting point of a new cycle (Korthagan & Vasalos, 2009).

The initial theorisation of the process of reflective mentoring (Dyson, 2002) was developed for the internship program in 2002 and was based on the ALACT model, to which two additional components were added: the inclusion of the role and work of the mentor teachers and a framework to facilitate reflection, which

was at that time the National Competency Framework for Beginning Teachers (NPQTL, 1996). See Figure 2 below.

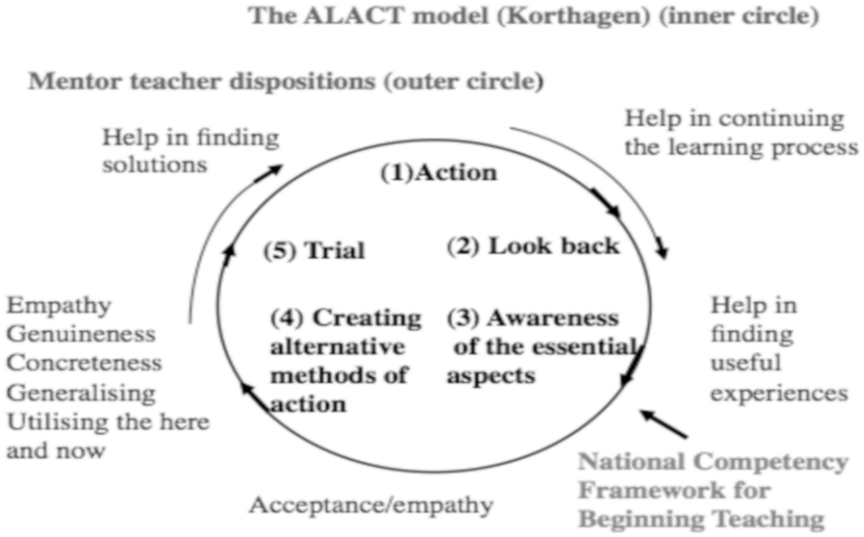


*Figure 2. Reflective mentoring model version 1 (Dyson, 2002)*

The competencies for beginning teachers and therefore by default, competencies required for the final year interns, became a viable framework to centre mentoring conversations between mentor teachers and PSTs (Dyson, 2002). The competencies included: 1. using and developing professional knowledge and values; 2. communicating, interacting and working with students and others; 3. planning and managing the teaching and learning process; 4. monitoring and assessing students' progress and learning outcomes; and 5. reflecting, evaluating and planning for continuous improvement (NPQTL, 1996, pp. 5-6).

In essence the data gathered in 2001 and 2002 re-emphasised the following five elements, as necessary components of an effective mentoring relationship;

– On going support and guidance
– A relationship built on trust over time
– Frequent and regular conversations
– The creation of a non judgmental environment
– Returning to issues and problems a number of times for further discussion.

Each of these themes emerged from the data gathered from the mentor teachers and the pre-service teachers who participated in a research study, which is described in the next section.

## METHODOLOGY

There were two phases of data collection implemented in this research project. about the nature, benefits and the experience of the reflective mentoring process. In phase one (2001 and 2002), data was collected from the mentor teachers and the pre service teachers. In phase two (2006), data was again collected from mentors and pre-service teachers. All pre-service teacher participants were from the Gippsland campus of Monash University while their mentors were from a range of local schools in the Gippsland region.

For the original data gathering in 2001 and 2002, a qualitative framework in the form of multiple case studies (Stake, 1998; Yin, 1994) was employed, involving semi structured and focus group interviews with 74 PSTs and 51 of their mentor teachers. The second phase of data was collected using focus group interviews from 10 mentor teachers during a series of forums in 2006 and from 50 pre-service teachers in focus groups during seminar days.

All interviews in both phases were analysed using a combination of constant comparison (Patton, 1990) and inductive analysis (Lincoln & Guba, 1985; Denzin & Lincoln, 2005) to develop and consider emergent themes. Following a rigorous process of repeated reading of the data, a compilation of quotes that related to the five elements, considered to be necessary components of an effective mentoring relationship, was drawn from the interviews. This formed the first-order analysis and highlighted thematic descriptions relating to the reflective mentoring process in terms of enhancing relationships. Relevant and interesting behaviours and events were identified through descriptive codes and then further inferential coding assisted in developing conceptual linkages and the creation of new categories. Finally emerging patterns were explored in relation to the nature and impact of the reflective mentoring process as part of the learning journey of the mentor and mentees. The data presented in the next section illustrates part of the analysis that was undertaken to refine the model.

Phase 1 data analysis from focus group and individual interviews provided support for the inclusion of the five elements that were identified as evident in the reflective mentoring process. Table 1 outlines the themes and subthemes that emerged in relation to each element and the frequency of mention by both PSTs and mentors. Following Table 1 are samples of quotes from the interviews with both groups of participants.

*Table 1. Phase 1 PST/Mentor interview data*

Themes and subthemes

| | | No. of times mentioned | |
|---|---|---|---|
| | | PST (n=74) | Mentors (n=51) |
| Support & guidance | Active listening | 36 | 30 |
| | Encouragement to search for solutions rather than having them provided | 30 | 28 |
| | Mentoring support in terms of professional learning from uni | 0 | 48 |
| Relationships built on trust | Gradually increasing responsibility for planning and teaching | 39 | 11 |
| | Encouragement of risk taking | 32 | 9 |
| | Working collegially with university liaison lecturers | 0 | 38 |
| Frequent conversations | Regular scheduled feedback | 34 | 41 |
| | Supported involvement in staff room conversations/ meetings | 32 | 38 |
| | Accessible university lecturers | 30 | 41 |
| Non judgemental environment | Tolerance of teaching mishaps | 30 | 21 |
| | Non-emotive language in feedback and reports | 22 | 19 |
| | Acceptance of mentor's concerns about PST progress | 0 | 22 |
| Returning to issues for further discussion | Emphasis placed on gradual but continued progress | 37 | 21 |
| | Short and longer term goal setting and continuous review | 34 | 20 |
| | Regular forums/discussions between mentors/university and mentees | 12 | 42 |

The following comments were selected to briefly present some commonalities of the pre service teachers' and mentor teachers' reflections about their understanding of their reflective mentoring experience in relation to each of the five elements within the model:

**Theme 1: Support & guidance**

PST: *I have really noticed that my mentor teacher this year really listens when I have questions… I've had some bad experiences in the past but the stuff we did on active listening at the forum seems to have made a big difference* (Pauline, 2002).

Mentor: *Support is essential – in every facet…but it is also about helping them to learn how to help themselves – I tend to reduce my sort of help, as time goes on – I don't throw them in the deep end from the start but once I think they have enough strategies/resources etc. then I am happy to let them flounder a bit* (Paula, 2001).

**Theme 2:Trust**

PST: *I think that in general the mentor teachers can hold the key to the successful or unsuccessful placement. In first semester I found myself very much sitting on the sidelines. By second semester I felt that she saw me as an equal and I felt that she was eager with the different ideas and the things that I had to offer* (John, 2001).

Mentor: *It is essential to build up trust over time – it takes time and there aren't really shortcuts – but once it is there then it can make such a difference to what you can say to them and what you can expect of them* (Jill, 2002).

**Theme 3:Frequent conversations**

PST: *I thoroughly enjoyed my internship - my mentor was always there to answer any questions I had, any concerns I needed to talk about and to willingly share with me her own ideas and suggestions which I was pleased to implement into my teaching. Having a mentor is a fantastic way of "easing" into teaching and knowing there is always help there* (Katy, 2001).

Mentor: *I guess it's different relationship with interns – they come in expecting to be a part of the school and not to be seen as a student. If you don't build this in then you can't expect the mentoring process to be fully effective, because it is really about the continuity and the chance to build on what you discuss each time. Then you know if you are going over old ground too much and that things are progressing* (Peter, 2002).

**Theme 4:Non judgemental environment**

PST*: I think being forced to confront things when they go wrong has helped. I was expecting criticism but instead I got critique – and I'd never known the difference before. My mentor always tries to find the positives about what I learned or did well as I get down on myself when things don't go as planned* (Jacob, 2001).

Mentor: *Its good for them to know they are allowed to make mistakes and it is expected. I think they see a lot more of that over a year – with us I mean – so they see even experienced teachers don't always get it right and it's good for us to talk about that too* (Sarah, 2001).

**Theme 5:Returning to issues for further discussion**

PST: *It was great to have some sessions on goal setting at uni - when we were back at school, my mentor Jo sat me down and we really got into it ….we spent quite a bit of time refining my goals and then we had them to return to for the whole year* (Anna, 2001).

Mentor: *The whole thing is to get there by the end so they have spurts and then consolidation periods but as long as they can see that it is moving forwards overall then that is progress. It takes time to make them see it in that way* (Mark, 2002).

The above comments from the PSTs are examples which provide support for how they perceived their personal and professional growth as educators which appeared to be shaped as a result of being given more responsibility for their own learning and being asked to negotiate their role and relationships in the school. They recognised their dependence on their personal involvement in the school, their attitude, disposition and personality and that they had a role in their own transformation. Moreover, they recognized the significant importance of forming and maintaining longitudinal relationships as a vital part of school life and the key role their mentor teacher played in terms of developing knowledge, skills and attitudes and in their transition towards becoming a reflective educator.

In terms of mentors the comments illustrated that mentor teachers also saw the value of the five theorised elements as a valuable part of the mentoring process. In addition, their feedback highlighted a number of other factors related to their involvement in the reflective mentoring process. In particular the mentors emphasised that they had to learn to let go and allow the interns to make mistakes. There was a clear indication given by mentor teachers of 2002 that the process of reflective mentoring had been understood and found to be effective by the mentor teachers. All participants agreed that the process assisted their intern in becoming a self-efficacious beginning teacher, while the vast majority (88%) of interns agreed that the process of mentoring, provided by their mentors, assisted them in becoming self-efficacious beginning teachers. This area of self-efficacy is important because as Bandura (1982) suggests personal self-efficacy is about having the confidence to know and complete the task(s) (of teaching) successfully and make the choice about how much effort and for how long they will persist in particular tasks.

## LITERATURE REVIEW

### *Re-theorising the Model*

The re-theorising of the process of reflective mentoring came about as a result of gathering and analysing the data obtained in 2002 and 2006 and the further interrogation of the data in light of the literature deemed to be relevant to this study. In particular through incorporation of Bauman's (2001) theory of tertiary learning, Arendt's (1990) social interaction theory, which includes the concepts of

thinking and judging, actors and spectators, Mezirow's (1991) theory of transformative learning, Leary's interpersonal theory (1957) and William Glasser's (1998) Choice Theory psychology together with the notion of Lead Management.

According to Peluchette and Jeanquart (2000) a mentor is someone who is generally considered to have higher status than the person they are mentoring, and they as mentor, are willing to invest time and support to the lesser person over a period of time. This notion of mentoring, consisting of different levels of status contrasts with the understanding of mentoring revealed by Young, et al., (2004) who interpreted two studies using the lens of relational knowing (Hollingsworth et al., 1993) which suggests that knowledge is gained through relationships, is fluid and influenced by social contexts. Young et al., (2004) found that friendships had a place in mentoring relationships, which in turn lessened the traditional mentor /mentee hierarchies. This was demonstrated by the mentors and mentees willingness to support and learn from each other and gradually release power. This in turn encouraged interdependency, which supported individual growth and "a sense of friendship, collegiality, connectedness and caring between the mentors and mentees" (p. 23). This aligns with Leary's (1957) interpersonal theory especially when the mentoring relationship is viewed as a nurturing role. Leary (1957) suggests that, "The various types of nurturant behavior appeared to be blends of strong and affectionate orientations towards others. Distrustful behaviors seemed to blend hostility and weakness" (p. 64). Indeed according to interpersonal theory (Leary, 1957) all interpersonal trends have some reference to power or affiliation or what Leary refers to as dominance-submission and hostility-affection. We would suggest that an effective reflective mentoring relationship consists of a blend of these four dimensions.

It would also seem likely that effective mentors 'working with' pre service teachers, with whom they have a positive relationship, can capitalise on the students existing knowledge and experiences which is based on a minimum of thirteen years of formalised schooling. It was Britzman (2003) that claimed that students already have ingrained attitudes towards 'teachers' and have established strong opinions about what teaching and learning is all about. They have already sat for thousands of hours in the classrooms of a post-modern world. Bauman's (2001) concept of tertiary learning therefore becomes an imperative in the post-modern world where everything seems to be in a state of flux,

> Every single orientation point that made the world look solid and favoured logic in selecting life strategies: the jobs, the skills, human partnerships, models of propriety, and decorum, visions of health and disease, values thought to be worth pursuing and the proved ways of pursuing them – all these and many more stable orientation points seem to be in flux. (p. 125)

In this state of flux the application of mindful future age thinking, rather than just more present age thinking, has the potential to facilitate a shaking down of what is thought to be known by individuals. Bauman (2001) in commentating on the post modern world suggests that a key enabler to shaking down what is thought to be known is what he refers to as tertiary learning: "learning how to break regularity,

how to get free from habits and prevent habitualisation, how to rearrange fragmentary experiences into heretofore unfamiliar patterns while treating all patterns as acceptable solely until further notice" (p. 125). For this to occur an essential element would seem to be what Mezirow (1997) referred to as critical reflection.

When referring to 'critical reflection', Mezirow (1997) argues, "We transform our frames of reference through 'critical reflection' on the assumptions upon which our interpretations, beliefs, and habits of mind or points of view are based" (p. 7). In turn this type of reflection facilitates a synergy between thought and action and a deep shift in perspective, which can be thought of as a shift in consciousness or a change in the mind. As Mezirow (1991) proposes, "Mindfulness is described as being aware of content and multiple perspectives. It is what the transformation theory calls reflective action" (p. 114). This is also in synergy with what Cranton (2007) refers to when describing Mezirow's (1991) approach to transformative learning, "as a process by which individuals engage in critical self-reflection that results in a deep shift in perspective toward a more open, permeable, and better justified way of seeing themselves and the world around them" (p. 101). These notions of thinking about what you are doing or reflecting on action have a long tradition and can be traced to the works of Kolb (1984), Schön (1983) Bateson (1973) and Mezirow (1991) and Arendt who coined the term "Think what you are doing" (p. 5).

While considering these issues of breaking free from habit, thinking and reflection about action, Arendt's (1958) and Coulter and Wiens' (2002) concept of a different form of political debate, founded on mutual collaboration, acceptance of diversity, effective dialogue and resource sharing was thought to be a good place to start in developing effective mentoring relationship involving Mezirow's (2000) concept of critical reflection in order to bring about transformative learning, which he defines as:

> The process by which we transform our taken-for-granted frames of reference (meaning perspectives, habits of mind, mind-sets) to make them more inclusive, discriminating, open, emotionally capable of change, and reflective so that they may generate beliefs and opinions that will prove more true or justified to guide actions. (Mezirow, 2000, p. 7)

To help understand the nature of transformative learning the work of William Glasser provides some guidance as he presents a different psychology based on internal control rather than external control. Glasser's (1998, 2005) work is focused on the notion of an internal locus of control as distinct from an external locus of control (Knight, Bellert & Graham, 2008), together with self-determination theory (Deci & Ryan, 2008) which highlights autonomy as a fundamental psychological need for all humans with self-rule and the capacity to take ownership of one's actions an essential component of what it is to be a human being. As noted by Guay, Ratelle and Chanal (2008), self-determination theory rejects control, rewards and competition.

Glasser's internal control psychology, known as Choice Theory (Glasser, 1998, 2005) has, as a foundation principle, the belief that individuals are in control of their own life and themselves within their environment. This notion of control is a very important one to consider when examining mentoring as an activity between two persons. The PST is seen as the protégé of the mentors but the mentors are also learning. They are therefore, according to McNally and Martin (1998), "co-learners within the school setting and collaborative learning takes place" (p. 39). It is also considered more likely by Cairns (1995) that interns will meet the requirements of what is deemed to be a 'capable teacher' when provided with the opportunities to assess and monitor their own needs within the school to which they are assigned.

Indeed Glasser's thinking and psychology of 'Choice Theory' supports this notion of self-monitoring, self-evaluation and self-assessment. Changing ourselves, rather than being changed by others, potentially leads to ongoing self-development and self-improvement. The use of Glasser's (2005) seven positive habits within the mentoring relationship and the concomitant avoidance of the seven negative habits, have the potential to change education significantly. Teachers who do not seek to control the lives of others and work with and on relationships, to build a connectedness with others, can bring about a transforming and transformed way of being and a transformed way of teaching. Realizing as a teacher, whether as mentor or mentee, that one is not in control of the environment but only in control of oneself, within the environment, is a significant change to the way education, teaching and mentoring is perceived. Guiding others in learning situations, as a mentor has the potential to lead individuals to self-evaluation, self-monitoring and *self-control*. It has been argued by Atherton (2011) that real reflective practice needs another person as mentor … who can ask appropriate questions to ensure that the reflection goes somewhere.

The positive environment of reflective mentoring can lead to what Glasser (1998) refers to as Lead Management as distinct from Boss Management. Lead Managers coach and empower others, rather than attempt to coerce and control. Essentially Lead Management involves: a coaching approach; involves democratic decision making; focuses on internal motivation; creates of a needs satisfying environment; implements procedures that lead to change; uses skillful questioning techniques; encourages self responsibility and encourages self evaluation.

All of these theorists played an important part in the re-theorisation of the original model, which involved an integration of the understandings provided by each theorist in relation to the process of mentoring, reflection and relationships. This was tested out by gathering feedback from participant mentor teachers and PSTs in 2006.

### *Time for Reflection – Gathering and Analyzing Data in Phase 2*

As with the first phase of data collection, mentor teachers and PSTs in the 2006 Internship program were invited to provide feedback in relation to the original questions. Ten mentors were interviewed and 50 PSTs participated in focus group

interviews during seminar days associated with their internship course during 2006. Data was analysed as described in the methodology section.

During interviews, mentor teachers indicated strong support for the process of reflective mentoring, which they saw as relationship-based, developmental and as an effective means of encouraging self-reflection. While a small number of mentors continued to view themselves in the traditional role of a supervisor it is considered likely that this notion of supervision can linked to the nature and extent of professional learning involvement engaged in by these teachers.

Comments from the mentors indicated that the ecosystem of the school played an important role in providing a safe environment for PSTs to establish their concept of teacher identity and self-efficacy. There was strong support for the process of reflective mentoring over traditional forms of supervision, with recognition that mentoring was effective when implemented in a one-to-one relationship that was built on mutual trust. The following comments briefly present some key understandings presented by the mentor and pre-service teachers in Phase 2:

*I didn't want to comment too much on specific things with her. I actually wanted Louise to think and say things about how she did something and why. I think that she became better at it as the internship went on and I think she became more comfortable with the idea of judging her actions without being too hard on herself* (Katrina, 2006).

*Yes, to me there's a challenge in reflective mentoring. There needs to be a bit of pushing in order to get them thinking about what it is they're doing in the classroom. Like – What do you want to work on next? How are you going to make it happen? Initially they hate it because it's too hard for them. They do dislike it initially. I'd say "I'm asking you to think". They'd say, "I don't want to think. I want to do the work* (William, 2006).

We would suggest a mentor teacher using reflective mentoring is a lead manager rather than a boss manager and empowers their PST rather than controls or coerces them into doing what they want. This also supports the theories outlined above, which suggest that personal and professional change involves the whole person.

*Reflective mentoring is probably a better word than supervision, which implies that you're looking down on them whereas this is more like we are partners in what we're doing. We have to actually develop a relationship and learn to trust each other – it is a new way of thinking about it for me but I can see the benefits in how we relate to each other and the deeper level of talking that we do* (Phil, 2006).

*The interns, through personal reflection, identify the areas they need further work in and pat themselves on the back when they have done well* (Joanne 2006).

*In using the process he actually had to reflect on what he was doing. Nine times out of ten, I didn't say much. It was an opportunity to let him unload and he'd come and say things like "I could have done this". His reflecting came out with his*

*own suggestions. I was a sounding board to guide him in different ways* (Kathy, 2006).

*The program is beneficial to the school and to the interns. It is a two way process. The Interns are fresh, energetic and have new ideas to share with the staff. You know having the interns in the school assists the teachers in the school to reflect about their practice and it helps them to clarify their role and share their experiences* (Joanne, 2006).

*I actually thought it was more like working in partnership. There'd be times in the classroom where things would go wrong with me and I'd have another person to talk to about it and ask her what she thought about it. It was really good to have that other person just to share the day, like parent issues. Also we talked about what would happen to her next year when she's in her own classroom and different issues come up* (Barb, 2006).

As suggested by Dyson (2011) the school-based mentor teachers, in particular, supported the vision that they were no longer the supervisors and the directors of practice. They were willing to let go and enable the interns to recognise for themselves their developing skills, competencies, interrelationships, and the need for the interns to make their own educational judgements. Indeed the mentor teachers understood the devolution and empowerment that was transferred to the schools in a partnership with the university, and confirmed the understanding that successful teacher education occurred in a created, open and worked environment, based on a balance in relationships and partnerships. This is evident in Josie's (2006) summation of her experience,

*My intern was a valuable team member. This classroom has five students with LDs, two SSO's and parent helpers in the morning session. T was always included in activities, and kept up-to-date. This was enhanced by her efforts and dedication; coming in to school many more days than required. The children viewed her as an integral team leader and (like me) were disappointed when she finished up. I am keen to see her gain a teaching position and would like to continue working with her in my Professional Learning Team.*

*While my mentor teacher has helped me a great deal I have found I have modeled much of what I did on how she ran the classroom. At times I felt okay about communicating with her but at other times she was not as approachable. Generally I had to ask for feedback and it was mostly positive, when really I wanted suggestions and areas to work on/develop. I think that at times we were both unsure of each other and what was expected of us. I think that we didn't have a very good communicative relationship, which I now wish I had made more of an effort to establish* (Janine, 2006).

*During my Internship year I have undergone many transformations as a facilitator of learning. I have watched my confidence grow in dealing with students, parents and staff, which I believe is due to the support given by my mentor*

*teacher and her encouragement of me ''to get into teaching.'' In doing so, I have learnt so much, about the children, about school life and about me, as a teacher* (Cathy, 2006).

This second vignette presents the recognition of continual transformations and the development of confidence through working with the mentor teacher, a significant other.

*In the past we had been given a lot of direction and we got used to thinking that we knew what we were doing, but we didn't and we had to work it out. Once we changed our mindset and realized that for us to get something out of the internship we had to make it happen. We had to negotiate our role* (John 2006).

Kate suggests in the following statement that the mentor teacher is really the key to an interns' success.

*I think at times it depends on your mentor teacher, how much actual time they allow you to do things, how much control and how much they actually let you teach within a classroom, plan and actually take charge a little bit* (Kate, 2006).

John extended this idea by adding that he thought that the mentor teachers changed over the year.

*I think that in general the mentor teachers can hold the key to the successful or unsuccessful internship. I found that there was this big change between first and second semester. In first semester I found myself very much sitting on the sidelines. By second semester and towards the end of semester I felt that she saw me as an equal and I felt that she was eager with the different ideas and the things that I had to offer because of different abilities and talents and as my mentor teacher was a bit older I was more confident with computers and IT and she had no idea and music and sports* (John, 2006).

*My internship year was a very productive and professional one. My mentor and I worked together. We did a lot of team teaching. He introduced me to other members of staff. He always made me feel as though I was a teacher. My mentor stepped back and let me do what I had to do. He didn't interfere with any of the ideas I wanted to integrate. He was more than happy to try something new. I knew that I was respected by the staff and I found this whole experience to be really beneficial, probably the most beneficial thing of the course* (Tony, 2006).

*If the university helped me out along that way I wouldn't have done it by myself. It was good. I hated it, but in hindsight it enabled me to actually take the responsibility for my own self. Otherwise, if I had relied on uni I would not have done it. The beauty of being in the deep end is that after a while you start*

*swimming. But, before you get into the water you panic, but once you're in the water, you cannot fail. I've done it this year. I had to. It's my last year and I was not going to waste it* (Carol, 2006).

Within the reflective mentoring process the PST with the support of their mentor teacher, would therefore examine their patterns of habitualisation, personally and professionally, and then rearrange their fragmentary experiences into unfamiliar patterns in order to establish new patterns, which in turn may only be temporary. Engaging in this process has the potential to guide learners, and in particular PST's, in the essentials of adaptability, flexibility, and a willingness to break free from habit. For this to occur requires some effort on behalf of both the PST and the mentor. In essence what it entails is thinking about what has occurred in practice, that is, examining the relationship between reflection and practice, which Korthagen (1999) suggests has been reframed through more attention being given to the development of the whole person.

Arendt's ideas about actors, spectators, thinking and judging contributes to the debate about the reflective mentoring, which can be thought of as a process of deep thinking mentoring. To Arendt (1990) all humans have the faculties for thinking and judging and choose to be either actors or spectators, or both, within the world. As articulated by Dyson (2011),

> A synergy between thought and action would seem to be vital in teacher education if pre service teachers are to embrace what Arendt (1958) suggests, that is, to "think what you are doing" (p. 5) as an actor and as a spectator in the world. This can only occur within individuals who are willing to think within their own person and then make good judgments [choices], within the world, based on this thinking. This type of "critical reflection" (Mezirow, 1991) is an underpinning of effective teacher preparation programs. (p. 16)

In a further reconceptualization of the process as a result of interrogating the literature and gathering and interpreting data from Gippsland program participants in 2001, 2002 and 2006, the process of Reflective Mentoring was seen to be most effective when it was not dealing with one off stand-alone single events but returning often to the issues and concerns that required an ongoing effort to be resolved or understood. In this way reflective mentoring came to be recognised as an ongoing transformative process involving both the mentor teacher and the PST who were both involved in a developing interpersonal relationship found on trust and care rather than power and coercion.

### *The Refined Model*

The new version of the model of reflective mentoring presented below (Figure 3) incorporates the upward movement of the individual to an open worldview (Heylighton, 2000) and highlights both the cyclic and the transformative nature of the process. In order for transformation to occur both the mentor and the PST require a willingness to live in a state of flux and embrace tertiary learning.

Furthermore it appears that those who are actors and spectators in the world and engaged in thinking and judging embrace tertiary learning. This in turn has considerable synergy with Mezirow's (1999) notion of critical reflection by which frames of reference are transformed and all beliefs; habits of mind and points of view are challenged. This in turn enables a synergy between thought and action, which transforms one's consciousness. Consciousness, according to Glasser (2005), deals with the current realities which are focused on what is going on in the world around the mentor and the PST in the here and now. Glasser (1998) suggests that this is all one can manage or change. This model further suggests that as the PST and the mentor teacher engage in regular and meaningful conversations about daily events and experiences there is potential for a gradual movement towards transformative learning and independence. This occurs through self-monitoring, self-evaluation and self-assessment and leads to interdependence i.e. the development of a worldview.

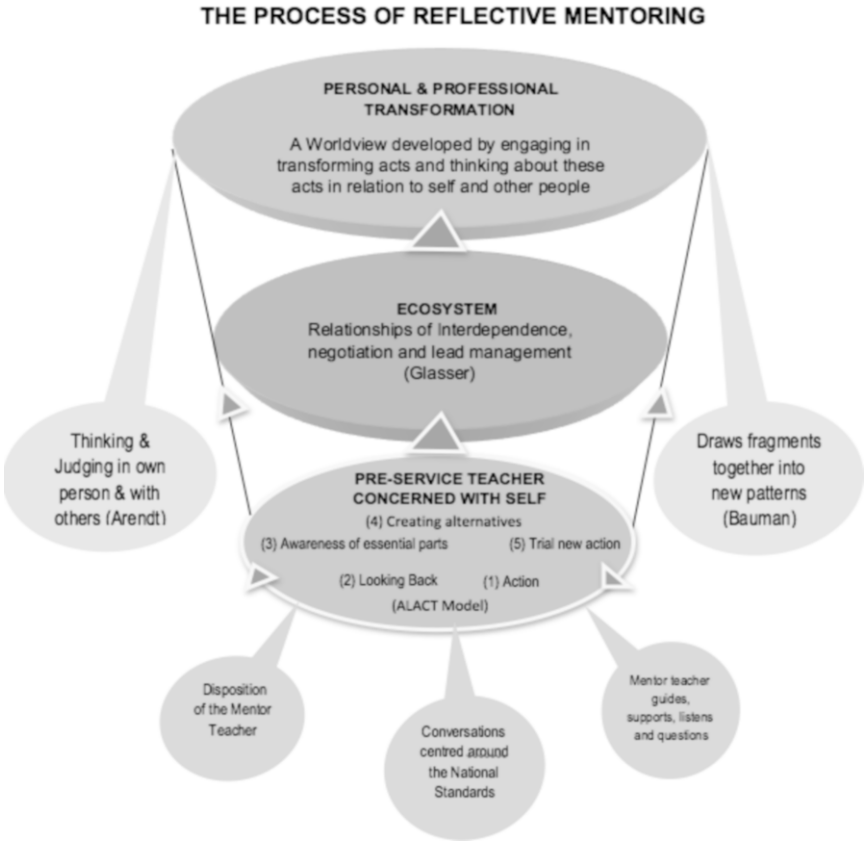


*Figure 3. Reflective mentoring model-version 2 (Dyson & Plunkett, 2012)*

*Conversations Conducted around Standards for the Teaching Profession*

As part of the reflective process, it is also important that conversations are conducted around the standards for the teaching profession. In Australia we now have the National Professional Standards for Teachers (AITSL, 2012), which replaces the National Competency Framework for Beginning Teaching (NPQTL, 1996). The mentor teachers encourage and conduct in-depth discussions based on and around the standards relating to the three themes of Professional Knowledge, Professional Practice and Professional Engagement, which contain the seven standards for teachers. Furthermore, the mentors assist and guide their mentees in finding evidence that they are working towards meeting the standards of the teaching profession.

Although the process of 'reflective mentoring' can take the place of traditional supervision at all year levels of pre-service teacher education there may still be a perception that two or more human beings are working together on unequal footings, i.e. a student and a teacher. This should be understood in terms of experience, rather than equality, and with the recognition that all parties involved can learn from the experience of mentoring.

Ongoing monitoring of this approach has led to an understanding of the need for continuous, responsive professional learning opportunities for both the mentor teachers and their mentees to ensure that the full potential of the process is realised. Funding support from the Victorian Department of Education and Early Childhood Development (DEECD) in 2010 has enabled a stronger focus on the collection of audiovisual data in the form of mentoring vignettes, to be used as a teaching resource. As a result, this approach to mentoring is now being further developed, and supported through the professional learning of mentor teachers with the aim of becoming the modis operandi of all mentors at each level of pre service teacher education (PSTE).

In the absence of a controlling power relationship the pre-service teachers have the opportunities to talk about what they already know, rather than just being instructed in the theories of teaching and learning without regard for what they know.

## CONCLUSION

The role of pre-service teacher mentors has changed substantially over the past decades, with many universities attempting to provide support for enhancing the mentoring experience for both their PSTs and the school based mentor teachers. Ongoing research into the reflective mentoring approach used within one teacher education program has led to valuable insights into the need for deep reflection to be built into the mentoring process to ensure that teachers are prepared for the challenges of educating in the 21st century. The process of reflective mentoring is facilitated by both the PST and their mentors and differs substantially from traditional supervision in which the supervising teacher is in a position of relative power and directs the PST in what to teach, how to plan and how to manage a

classroom. The development of the reflective mentoring model described in this chapter, resulted from an approach based on critical reflection involving initial theorisation, followed by collecting and analysing data from program participants and then refinement of the model through the gathering of further data and further theorisation of the model. The evolution describes a relationship where both independence and interdependence co-exist as the PST experiences a transformation entailing a move from thinking about themselves in terms of being a PST, to thinking of themselves as *teacher.* Feedback provided through interviews with both PSTs and their mentors suggests that this refined model of reflective mentoring provides an effective way of enhancing the experience of mentoring for both mentors and mentees, especially in an environment in which both parties are considered to be equals – with different level of experience. In deed they can be friends experiencing a positive interpersonal relationship.

In this case, the 'curriculum' of 'reflective mentoring', which could be considered as the 'hidden curriculum' signals repeatedly to mentees that they belong, are respected, are valued, and that the mentor teacher's primary role is to provide psychosocial support, not to grade, rate, or critique. Reflective mentoring presents a more complex and organic view of the development of the mentees identity that is critical for them to internalize and model for students whom they will in turn teach and mentor going forward. The model described in this chapter can be considered as the future in the teaching profession rather than the current model of individual assessment in which the power dynamic is *not* challenged. In professions other than teaching there is a call for the increased use of reflection and transformative learning in fostering professionalism as opposed to assessment of competencies using rating scales and grades.

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ANNELI FRELIN AND JAN GRANNÄS

# 5. NAVIGATING MIDDLE GROUND

*A Spatial Perspective on the Borderlands of Teacher-student Relationships in Secondary School*

## INTRODUCTION

The UN Convention on the Rights of the Child (UNICEF, 2000, § 28) not only states rights to education, but also that "[d]iscipline in schools should respect children's dignity. For children to benefit from education, schools must be run in an orderly way – without the use of violence". To this end, the benefits of positive teacher-student relationships are well established (see e.g. Evertson & Weinstein, 2006; Wentzel, Battle, Russell, & Looney, 2010). For example, person-centered teacher variables were associated with positive student outcomes (Cornelius-White, 2007), including the outcome of lifelong learning and citizenship (Doyle, 2009), student engagement (Margonis, 2004) and self-esteem (Pianta, 2006). Positive teacher-student relationships are especially important for students facing social borders in school, (Davidson, 1999), for minority students (Erickson, 1987) and for disadvantaged students (Hamre & Pianta, 2001).

Moreover, teachers are central when it comes to creating favorable social relationships in the classroom, especially those associated with less violence and delinquency (Sprott, 2004) and better student behavior (Brackett, Reyes, Rivers, Elbertson, & Salovey, 2011).

Closeness is one of the features of a positive teacher-student relationship. The proximity between teachers and students has been shown to have a positive effect on student effort and confidence (see e.g. den Brok, Levy, Brekelmans, & Wubbels, 2005), student resilience (Johnson, 2008) and students' subject-specific motivation (Davis, 2003; den Brok et al., 2005; Lingard, Hayes, & Mills, 2003). The relationships are negotiated by the behavior and verbal and non-verbal communication of students and teachers and are sometimes based on very subtle judgments on both parts (Davis, Gabelman, & Wingfield, 2011; Frelin, in press; Wubbels, den Brok, Veldman, & van Tartwijk, 2006).

The teacher-student relationship is a professional one, and while there is a need for teachers to have both professional closeness and professional distance (Frelin, 2008), there are limits to how close teachers and students can get without overstepping professional boundaries (Andrzejewski & Davis, 2008). These boundaries establish what is (in)appropriate in relationships (cf Austin, Bergum, Nuttgens, & Peternelj-Taylor, 2006). Boundaries can vary within and across cultures (Thayer-Bacon, 2008) and teachers who are aware of such variations may

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affect the learning environment (den Brok, Wubbels, Veldman, & van Tartwijk, 2009; Ullucci, 2009). It is held that teachers need to maintain teacher-student relationships within a professional territory (cf Austin et al., 2006) in order to delimit the space in which the professional can maneuver, and work to create a middle ground between teachers and students, which is often necessary for education to occur (cf Woods, 1990). In this chapter we specifically use the term middle ground to denote the space in which it will be possible for individuals to emerge in ways that extend beyond the given teacher and student roles.

In their daily work, teachers are constantly faced with dilemmas, especially when striving for balance, for example between care and control (Aultman, Williams-Johnson, & Schutz, 2009; Edling & Frelin, in press). These dilemmas can relate to issues of self-disclosure, where teachers want to be perceived as "real" (Aultman et al., 2009) or "human" (Frelin, 2010) in order to improve the learning environment for their students. To some extent, professional boundaries are also negotiated on a case-by-case basis. However, teachers express that getting "over-involved" affects their teaching capacity and life outside school in a negative way and threatens the maintenance of their teaching identity (Aultman et al., 2009). Dilemmas may entail the weighing of institutional boundaries against the welfare of a student (Aultman et al., 2009). Andrzejewski and Davis (2008) discussed the topic of teachers touching students and found that they were negotiating risks, viewing themselves as for example "the kind of teacher who takes risks to touch students because they viewed connecting with students as a responsibility and touch as a vital tool for making connections" (p. 786). The above referenced research contains streaks of spatiality.

The purpose of this chapter is to use spatial theories to explore how teachers and students in secondary education view and navigate middle ground for achieving positive and professional teacher-student relationships. How do teachers and students reason about the borderlands of teacher-student relationships and how do they navigate them? In the next section we turn to spatial theories.

## SPATIAL DIMENSIONS IN SCHOOL LIFE

Spatial dimensions permeates our use of language and thinking (Edwards & Usher, 2003). Spatial theories are fruitful for understanding the factors that contribute to positive relational processes in the school context (cf Ferrare & Apple, 2010). In the following section, we present a comprehensive spatial perspective based on three forms of spatiality.

We argue that spatiality is an effective analytical tool for constructing a spatial perspective on everyday school activities. Three forms of spatiality are focused on: *physical space, social space* and *mental space* (Grannäs, 2011; Lefebvre, 1991; Mcgregor, 2004a). The three forms of spatiality are not and cannot be completely separated from each other, but are always dynamically related.

*Physical Space*

The analytical concept of physical space, the first aspect of the triad, highlights the dominant ways in which time and space are organized. We perceive space by seeing, smelling, hearing, moving and attending to everyday practices that shape patterns, routines and behaviors among people. The way we relate to time / space is crucially important to how education and learning take place and can take place. In this paper, we suggest an approach that is different from a Euclidian understanding of space; I do this in order to develop a theoretical framework against which different ways of organizing education and learning can be analyzed. In everyday life, we relate to spatiality with relatively few problems using a Euclidean starting point in which the room is considered a fixed container for human activity (Gruenewald, 2003; Gulson & Symes, 2007; Kostogriz, 2006). Transgressing the idea of space as a fixed container, and not reducing space to a point on a grid, opens up a different view on educational settings.

The interaction in physical space, or rather the frequency of human behavior, creates meaning in that space. Actions are linked to the involved individual's construction of meaning in that particular space. It is not quite certain that the intended purpose for a school corridor when that corridor is designed, or for that matter the intent of school operations planning, coincides with the students' construction of meaning in the school.

The school building forms a backdrop against which assumptions are expressed regarding how teaching and learning are organized and expected to take place. Gordon and Holland argue that: "The spaces of the schools reflect prevailing societal expectations of the education of children and the construction of citizenship" (Gordon & Holland, 2003, p. 28). Physical space in school consists of spatial practices that place work, play and leisure in pre-established classrooms, cafeterias, hallways, playgrounds etc. The school building as a physical space is regarded as a consequence of social practices and thus as a social construct. The physical space has a compelling but not predetermined character, which means that school buildings and their surroundings are mainly planned and built with a view to certain activities taking place there, but nevertheless allowing for some degree of flexibility. Such possibility, we argue, emerges from the social interaction that gives the physical space meaning. According to Biesta, we should understand the architectural room/space and the event in tandem, i.e. the physical space exists because of the occurring event. Biesta's theories about the architectural space contribute to an understanding of space that is neither objectivistic, where a room is seen as a fixed container in which human life unfolds, nor phenomenological, where the room is reduced to the subject's perception of the room (Biesta, 2006).

The ways in which physical and social spaces are organized in school shape the routines and structures that produce particular social relations (Gordon & Holland, 2003; Mcgregor, 2004b; Thomson, 2007). For example, a school building consisting of rooms on several floors with corridors linked by staircases (physical space), where the different floors and corridors are only accessible to the group of teachers and students designated to be there (social space), is reminiscent of the

architecture and social interaction of prisons. Schools with such architecture, and with activities that are organized in such a way, thereby produce specific social relations that are not necessarily positive for teacher-student relationships or lead to good learning environments.

*Mental Space*

The second aspect of the triad refers to conceptualizing and conceptualizations linked to methods, planning, systems, strategies, discourses etc. The concept of mental space highlights the artifacts, symbols, signs and codes of meaning and knowledge systems that show the practices of power. Mental space can be understood through people's notions of schooling, its forms and contents, which structure ideas about teaching and learning in different educational ideologies (Gordon & Holland, 2003). School policy documents are societal expressions of expectations regarding the kind of citizens that schools set out to prepare for a future active citizenship (Gordon, Holland, & Lahelma, 2000). The ways in which education and schools in particular are imagined and conceived are directly related to the construction of the abstract teacher and also to the construction of the abstract student. All this has an impact on workplace philosophies, ideologies, practices and regimes.

Based on Gordon and Holland (2003), it can be stated that written policies and other directives contribute to the mental spaces that are constructed and maintained in the school context. Mental space is also the intersubjective creation of meaning in which the individual is related to both material and symbolic factors. From the perspective of teacher-student relationships, one example of such intersubjective meaning-making is the constantly emerging negotiations between teachers and students. The way in which an individual perceives the negotiations has implications for the following action, for example in the form of collaboration and/or resistance.

*Social Space*

The third aspect, social space, is the place where lived experience takes place and where meaning is created – both individually and communally (inter-subjectively). Social space is defined by lived experience and occurs in moments when everything comes together in interaction. The dynamics of the ongoing creation and recreation of social spaces are expressed through processes of differentiation, categorization and discrimination (Gordon, Holland, & Lahelma, 2000). The structuring ideas, the imaginary and the abstract all have an impact on social practices.

Social space can also be understood in terms of a differentiated space (third space) that allows for the emergence of unique subjectivities, in contrast to the pre-given notion of the abstract teacher and abstract student (mental space).

In school as a social practice, various policies regulate the activities and people by so-called "time-space-trajectories", of which the school timetable is perhaps the

most vivid example (Giddens, 1984; Thomson, 2007). This routinization of the social space is described by Gordon and Holland (2003) as a means of limiting students' opportunities to make decisions in everyday practices, and the expected "time-space-trajectories" are described as expressions of power relations in school activities. The schedule profoundly regulates the everyday life of school practice. There is, for example a difference between how students and teachers interact during lessons and breaks.

To sum up, as Kostogriz and Peeler (2007) suggest: "the production of teacher workplaces embodies a close association with how professional space is perceived as a set of appropriate practices and professional attributes; how the representations of professional knowledge and professionalism are constructed and standardized by educational authorities and bureaucrats; how this space is lived in the daily reality of local, routine and situated events of the classroom and how the local is informed by the life of teachers outside the classrooms and staffrooms" (p. 108).

### *Consequences for Teachers' Work*

We argue that the temporal structuring of schooling (consequences of the administration of time) both restrains and facilitates teachers' work of creating and sustaining educational relationships with students (Frelin & Grannäs, 2010). By attending to the time-space dimension, the power dimensions in teacher-student relations that influence the form and results of the negotiations are brought to the fore (Carlgren, 1997). While the physical space has a bearing on how school is organized and controlled (Biesta, 2006), this organization of time is often taken for granted, despite its central significance for and influence on the school activities. Order and control become central parts of school, because teachers and students (who) are expected to be in a particular place (where) at a particular time (when) to pursue a given education (what).

However, teachers cannot take this order for granted, since it is more or less under constant negotiation with students. Negotiations can either take the form of open conflicts between teachers and students, or be very subtle, such as when students display boredom or worry and the teacher changes her or his teaching accordingly (Frelin, 2013). Basic and explicit rules may be set in advance, although the social complexity of the educational practice make it necessary to negotiate and renegotiate rules, given that every action is unique (Carlgren, 1997; Grannäs, 2011). Informal situations and places within schools often have a greater degree of unpredictability and can offer alternative opportunities for negotiation (Frelin & Grannäs, 2010).

## METHODOLOGY

Although prior research sought both students' and teachers' views on professional boundaries, combining them has been less common. An exploratory combined case study (Creswell & Plano Clark, 2007; Stake, 2006) was conducted in which data was drawn from two qualitative studies inquiring into teacher-student interaction.

The methods of data collection included interviews and observations and the two studies were conducted separately. One of the case studies, conducted by Frelin, covered the teachers' perspectives and the other, by Grannäs, those of the students. Combining teachers' and students' points of view is less common and offers scope for exploration. The data for the two studies consisted of in all interviews with 23 students and five teachers. Frelin interviewed experienced teachers in secondary and upper secondary schools in order to inquire into relational professionality. All the teachers were interviewed twice, with each interview lasting approximately one hour. They were also observed for one or two lessons following the first interview. During the interviews, the teachers were asked to tell stories from their everyday practice and were repeatedly asked to provide arguments for their various actions in relation to students. In the interviews conducted by Grannäs, the participating young people were aged between 16 and 19 years. The overarching theme for the interviews considered students' experiences of democratic fostering, which were in turn backed up by sub-themes focusing on students' learning experiences in school and experiences of relationships in school.

Both data sets contained many accounts of how educational teacher-student relationships were built and sustained, but also damaged and even ruined, from two different points of view. These were reanalyzed for the purpose of exploration of the boundaries of relationships. The interviews were coded using the software AtlasTi. Initially, all accounts pertaining to building and sustaining of positive teacher-student relationship were sorted. These were analyzed from a spatial theoretical perspective (Gordon & Holland, 2003; Gordon et al., 2000) where the concepts of *physical, mental* and *social* space guided the process (Grannäs, 2011). The exploratory nature of the this small qualitative study marks a preliminary mapping of the area of study as one mean for guiding further analyses using this perspective.

## NAVIGATING MIDDLE GROUND IN SCHOOL

In this section, we present results on how teachers and students reason about the physical, mental and social borderlands of teacher-student relationships and how they try to navigate them. The teachers' and students' accounts are presented separately.

### *The Teachers*

To varying degrees, all five teachers actively worked towards attaining closeness in relationships with students by various means, one of which was casual chats in informal places like the corridor. The space available for such casual interaction varied depending on the larger context in which teachers and students were situated (Frelin & Grannäs, 2010). In the Swedish context, students are less monitored (there are for example no hall passes) but are expected to take responsibility for being in the right place at the right time in school. The breaks are also longer.

For example: Adrian, a secondary school Math/Science teacher, intently interacted with his students in the corridor with a view to building such relationships.

> I feel that it is so important, being out in the corridor. I know that they appreciate it. Because I hear it too: Adrian, he is the one who comes out here, he is the one who talks [to us]. And they appreciate it. I feel, I think that it is a big and important thing that I have to do.

The informal chats took place between students and teachers in the corridor, and were viewed as emerging *social spaces* or practices of informal interaction. In actual fact, students and teachers were only meant to interact in the classroom and only in relation to the content that the students were expected to learn. The corridor thus functioned as a *borderland* in relation to the intended learning processes. This was because it was a space that both students and teachers inhabited, and because the social space was less regulated than that during lessons. In these borderlands Adrian had an opportunity to negotiate *middle ground.* This may have contributed to the closeness of the teacher-student relationship, which might in turn be positive for education.

However, as he remarked, in his work in the corridors he had become more cautious about respecting students' *physical space*. Earlier, he used to put his hand on a student's shoulder, but at times had felt students' reactions to this and reflected that he was not always comfortable with being touched. As a result he decided to be careful. He said that when he had come to know the students well and whether or not they were comfortable with being touched, he considered reciprocating.

Gunilla worked with students who were not eligible for upper secondary school because they had not met the requirements necessary for passing the core subjects. She highlighted the advantages of the very small school in which she worked. The school had only 10 students and was located in an ordinary house in a residential area. The fact that the house was not originally built for schooling allowed for displacement in relation to the *physical space* that the students perceived, many of whom were burdened with previous negative experiences of school. This alteration in terms of physical space facilitated conditions for creating middle ground and allowed for the creation of social spaces that were conducive to positive relationships and learning.

In this school house, the teachers and students had a joint coffee area in the kitchen. In Gunilla's experience, if she and a student met over a cup of coffee during the break it became easier to deal with any problems that arose in the lesson that followed. In Swedish schools the coffee break is part of the daily rhythm, although the joint coffee area is also a borderland where teachers have an opportunity to step back from the expected routines and conceptions of how teachers should act. Gunilla remarked that:

> … the tension is reduced if it is the same person that just popped in and … had a cup of coffee with them. It doesn't get so noticeable, it becomes more

> relaxed, this atmosphere. This is, I guess, something one can create thanks to the proximity, open doors and what not.

At times teachers feel the need to stand back in order to keep a professional distance. For example, Gunilla also struggled to stay within a professional space, which was difficult when she saw that parents neglected their sons and daughters and she had to refrain from acting as a parent in their place. She said that: "We become almost like their parents somewhere in the end, we try not to be but sometimes one becomes that". Stepping into this middle ground between teacher, student and parent can thus involve risks of treading outside a professional space, thus muddling the relationship.

*The Students*

The students emphasized how important it was for teachers to maintain the right distance for the task in hand in their relationships with students. Several of the young people believed that an important approach of the "good teacher" was the ability to see, hear and speak with the youth in a way that felt genuine. That is, although they appreciated closeness, they were very sensitive to teachers who tried to relate to them outside the professional space. However, examples were given of teachers who were good at managing this balancing act between being personal but not private, and also between being a grown-up but still friendly. The student Jonathan, aged 19, said: "It is about meeting half way /…/ in a way that does not feel phoney".

Meeting half way, we argue, is a good metaphor for describing important relational dimensions in everyday school activities. Meeting half way means creating middle ground without overstepping the professional boundaries. From a democratic viewpoint, and one based on fundamental human rights, this interaction is worth highlighting because it demonstrates the value of both parties recognizing each other, and avoids a view of the student as only an object to fill with knowledge (UNICEF, 2000). It is precisely by meeting half way that the parties create middle ground.

In another example, Linda described events where teachers – in an effort to preserve the homogeneous group order – chose not to meet half way, but instead excluded individuals who did not fit into the existing norms. In contrast, Linda said this about a teacher at the school:

> I had a teacher who taught the subject of Swedish language and who was great. He was quite young and a very educated person for his age. It felt like he knew everything. I looked up to him, very much. We got along very well and you could sit and talk to him during the breaks. Since there were no others to talk to.

Here, Linda talks about approach in which the teacher established middle ground and facilitated a genuine encounter between him and Linda.

The students also gave examples of teacher traits and approaches, including humor, openness and interest in the individual student. Based on these experiences, it could be said that from the students' perspective, teachers need to develop an approach that matches what a student values and thinks is important: that students perceive the teacher as fair, interested and caring. It is important for students to be viewed and acknowledged as unique individuals and not just as abstract beings. Part of what we from a spatial perspective term mental space is students' expectations of what a teacher or student 'is' and 'should be' shape the conditions for interaction between students and teachers. For Victoria, this was an important approach.

> There is one that I've had since seventh grade when he was my mentor. He was great, he was always kind and he helped me with the test … he would always come and ask me how I was. If one is about to lower the test scores he helped all the time to improve the results and did not give up. He is very kind and now, though he is not my mentor, he sits down and asks how things are going. He helps a lot of people.

Students described places outside the classroom, such as dining halls, corridors and areas where they spent much of their break time, as important for informal interactions with teachers, which in turn contributed to closeness in relationships. This suggests that the professional space of teachers may stretch way beyond the classroom.

In the young people's stories about their experiences of different teachers, a recurring theme was identified when they talked about what characterized a "good teacher". Several of the interviewees thought that it was important for the teacher to take the time to get to know the student as an individual. Taking the time to get to know the student is also a form of recognition, in that the teacher shows an interest in the unique individual. This also means that the teacher needs to take the risk to deflect from the given and expected roles in everyday practices in school.

## CONCLUDING COMMENTS

Achieving education that is humane is a worthy cause, and knowledge about how to create middle ground and educational relationships with all students is vital for successful teaching. Using both teachers' and students' accounts, together with a spatial perspective, this study adds to the field by exploring examples of how, where and when such educational relationships are achieved. Teachers having difficulties relating to students are widely reported (e.g. Wideen, Mayer-Smith, & Moon, 1998). The results of this study are of value for teachers, and for future research into professional teacher-student relationships, for example when developing measures in research such as comparative studies. It can be argued that the borderlands constitute so called *absent presences*, that is, important features for educational processes that have become obscured in the managerial discourse aiming at standardization and efficiency (cf. Frelin & Grannäs, in press).

Highlighting the significance of the borderlands can support the important work that teachers do, often at a personal cost.

It is common in Swedish schools to have at least 10 minutes between classes and thereby allow some space for teachers to socialize and talk with students. We argue that the physical and temporal structuring of schooling is of major importance, because it impacts on the spaces for relational practices, which require an openness and accessibility in the sense that the physical locales are organized in ways that allow for it (cf Brown, 2012). The mission and approach of teachers also facilitates meeting half way and constructing middle ground (cf Frelin, 2013; Grannäs, 2011). The Swedish teaching assignment, regulated through the policy documents, requires a professional closeness and not only professional distance (cf Frelin, 2008). The teaching assignment is based on the idea (mental space) that young people are capable of taking responsibility. In the Education Act it is stated that students have a legal right to influence their conditions in school (SFS, 2010:800), an Act that rests upon the UN Convention on the Rights of the Child.

In our studies, it appears that beliefs (mental space) about good schools (the abstract school) are based on fundamental human rights and the notion of the capable student (the abstract student) (Gordon & Lahelma, 2000; Grannäs, 2011). Conceptions of what constitutes good, high quality teaching are largely consistent with how the physical space, i.e. school buildings, is built and organized. Our results also show that teachers together with their students intersubjectively create meaning, and that such meaning is not always directly related to teaching and subject matter related issues, but may have significance for them in the end (Frelin & Grannäs, 2010; Jan Grannäs & Frelin, 2010). This chapter has presented spatial theories and illustrated how they can deepen our understanding of how teachers and students in secondary education view and navigate middle ground in order to achieve positive and professional teacher-student relationships in the borderlands of school.

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ANN HIGGINS

# 6. I FELT SAFE TO BE A CHILD, I WANTED TO LEARN

*Locating Caring Respectful Relationships as Core Components in Enabling Learning Accessibility*

> You walked away from here really feeling that you could change the world in so many different ways. 'Cause if you believed in us, we believed in ourselves'.
> (Participant in the 3 O'Clock School)

## INTRODUCTION

These At its heart's core, this longitudinal study explores the factors affecting learning accessibility for children and adults within a specific context. Learning accessibility is understood as 'the individual's personal circumstances and experiences located within and across contexts which impede or support that person in accessing learning' (Higgins, 2008, p. 11). This study examines the impact on individuals and settings when a school moves beyond its traditional role and embraces an ecological perspective, listens and responds to the identified needs of the community and operates with an open mind and heart. In 1985 a community-led school-based project, Kileely Community Project (KCP), evolved as a grass-roots response to the learning needs of children and adults in low socio-economic status (SES) areas. This chapter describes the contest, evolution and impact of this initiative and firmly locates caring respectful relationships as a key component in the development and sustainability of KCP and the mechanism through which learning accessibility was addressed.

The author is a former pupil, teacher, and principal of the school in which this study is situated as well as founder and director of KCP.

## METHODOLOGY AND DATA SOURCES

Research is a political tool, 'be it by default, by design, or by recognition' (Lynch, 2000, p. 73). It is precisely because it is a political tool that it is necessary to consider not only the methodologies employed, but also the philosophy guiding any study. This is particularly pertinent given the experiences of marginalised communities which in the past have frequently had their experiences appropriated

*D. Zandvliet et al. (eds.), Interpersonal Relationships in Education: From Theory to Practice, 71–93.*

by researchers. Daly decries research shortcomings particularly in relation to understanding women's poverty and cautions that 'research can conceal as well as reveal' (1989, p. 10). And, this is possible because implicit in the research process are issues of power, relationship and representation. Conscious of the political and potentially transformative impact of research studies, Fine and Weis contend that 'researchers can no longer afford to collect information on communities without that information benefiting those communities in their struggles for equity, participation, and representation (1996, p. 271). The centrality, as opposed to neutrality, of the relationships between researchers and participants must be addressed as a key site of power. Researchers need to be vigilant that research relationships do not mirror power relationships in society, which, according to hooks, are 'equated with domination and control over people and things' (1984, p. 84). According to Banks, 'social research has to be an engagement, not an exercise in data collection' (2001, p. 179). O'Neill contends that working class culture is 'neither fully understood nor properly documented' (2000, p. 106). This study, situated within a working class culture, offers an insight into how and why this community responded to the challenge to address its own learning needs. This study asked participants to enter into dialogue, to engage actively with the research process, and to claim and name their world. Indeed, Freire advocates dialogue as a tool of empowerment, and defines dialogue as a 'horizontal relationship between persons' (1974, p. 40).

Narrative understanding and inquiry methodologies (Clandinin & Connelly, 2007; Josselson, 2007; Lyons & Kubler La Boskey, 2002; Stuhlmiller, 2001) embedded within feminist emancipator research principles (Byrne & Lentin, 2000; Lather, 1991) and case study design (Quinn Patton, 2002) were employed in this study. Josselson contends that narrative research 'is inherently a relational endeavour' (2007, p. 537), in which the narrator is 'is identified as having some knowledge [and] expertise' (Stuhlmiller, 2001, p. 67), thereby reversing the traditional research roles in which participants were seen as subservient to the expertise of the researcher. Such is the quality of narrative inquiry practice that Clandinin and Connelly claim that the interview can turn into 'a form of conversation' when intimate participatory relationships exist between the researcher and participants (2000, p. 66). This mode of interaction is described by Ellis and Berger as reflexive dynamic interviewing, where 'the interview is conducted more as a conversation between two equals' (2003, p. 472). Ultimately, narrative methodologies are relational and bring us into a deeply personal realm where according to Clandinin and Connelly the 'researcher's personal, private and professional lives flow across the boundaries into the research site; likewise, though often not with the same intensity, participants' lives flow the other way' (2000, p. 115). Feminist research methodologies attend to issues of researcher subjectivity (Byrne & Lentin, 2000; Clandinin, 1985; Kohler Riessman, 1993), power relationships (Aull Davies, 1999; Clandinin & Connelly, 2000; Daly, 2000; Reinharz & Chase, 2003; Starhawk, 1987), participation (Lynch, 2000), co-creation of knowledge (Byrne & Lentin, 2000; Oakley, 1981), representation (Field Belenky et al., 1997; Fine et al., 2000; Kohler Reissman, 1993; O'Neill, 2000),

reflexivity (Hertz, 1997; Freire, 1974; Lynch, 2000; Quinn Patton, 2003), epistemology (Fonow & Cook, 1991; Kelly et al., 1994; Palmer, 1983), language (Edmondson, 2000; hooks, 1984; Lynch, 2000) and transformative intent and outcome (Daly, 2000; Deyhle et al., 1992; Fonow & Cook, 2000; Stuhlmiller, 2001).

*Table 1. Interview participants*

| Group membership | Interviewees | Focus group |
|---|---|---|
| Target group | | |
| Mature Adult leaners | 13 | 4 |
| Young adult leaners | 11 | 3 |
| SPACE participants | 6 | 4 |
| Former three o'clock school attendees | 10 | 4 |
| Mothers of three o'clock school attendees | 7 | |
| Committee members | 4 | 4 |
| Nontarget group | | |
| Tutors | 6 | |
| Teachers | 6 | 4 |
| Ancillary staff | 6 | |
| Volunteer | 1 | |
| Statutory organisation representative | 1 | |

The data set included more than 50 semi-structured interviews (Quinn Patton, 2002) and six focus groups (Fine & Weis, 1996). Research participants included programme participants including mature and young adult learners, SPACE participants,[i] former 3 o'clock school participants,[ii] mothers of children attending the 3 o'clock school and KCP committee members.[iii] The second group of research participants included tutors who worked in KCP, teachers in the host school, ancillary school staff,[iv] volunteers and statutory agency representation.[v] This study was informed by a rich cache of secondary data,

including visual data in the form of over 600 photographs, and 11 hours of video footage, audio data from 7 hours of radio interview transcripts, and print data including national, regional and local newspaper cuttings, letters, reports and census data spanning 20 years.

## SETTING THE CONTEXT

It is important to understand the social, educational and economic context in which KCP evolved in order to appreciate the challenges presented along with the outcomes achieved within this setting. Consequently, I draw briefly on census data[vi] and personal testimonies from research participants to describe the context. Indeed, this mixed methods approach enabled me to bring to life 'the static pictures which statistics paint' (Mc Cafferty, 1993, p. 2) (Phd C-33).

This study is located within a local authority housing area in Limerick city, on the west coast of Ireland. KCP evolved within a five- roomed local elementary school, built in 1941, which operated within the traditional school opening hours of 9.00 am to 2.30 pm. The study timeframe begins in the mid 1980s, a time of severe economic depression. At a national level O'Reardon described the 1980s as 'an excruciating period of economic history, with negative employment growth, unemployment reaching some 19 per cent, high outward migration, and seemingly insoluble problems in the public finances' (2001, p. 113). According to Nolan et al. 'high risks of poverty are associated with being a local authority tenant, between 1987 and 1994 and the level of risk for such households increased significantly' (1998, p. 97).

Kileely suffered disproportionate levels of unemployment in comparison with adjacent private housing areas and with the city as a whole. For instance, in 1981 Kileely recorded an unemployment level of 12.71%, in 1986 a rate of 16.27%, in 1991 and the rate had increased further to 17.34%, and by 1996 the rate had decreased to 10.48% and by 2002 an unemployment rate had further decreased to 9.47%. While this decrease was welcome Kileely continued to compare negatively with adjacent private housing and the city as a whole. The severe unemployment of the 1980s was graphically recalled by the research participants who spoke of the atmosphere of depression and the bleak prospects for young people. As one adult learner noted '*unemployment was unbelievable ... it was a hand to mouth existence*'. Another young adult learner recalled '*when my children were young we didn't have our supper, we had nothing. I used to go down to the classes (KCP) and no one ever put me under pressure to put £1 into the box or cup ...*'.[vii]

The link between educational attainment and job opportunities and risk of poverty is clear and according to Kellaghan ' there is considerable evidence to support the view that students who leave school having taken no public examination or having obtained poor results on a junior cycle examination are poorly placed in the labour force' (1995, p. 44). Indeed 'educational achievement (in turn) is widely recognised as a key factor in determining the individual's labour market prospects (Mc Cafferty, 1999, p. 210). This is very significant as according

to Nolan et al. 'the education system in the absence of counter measures, can reproduce inequalities and poverty. The educational system has a key role to play in providing a route out of poverty' (1998). Early school leaving was a feature of this community, and census data reveals a disturbing profile of formal educational attainment for this area.

The census data offers disturbing evidence of early school leaving for this community. The 1986 census records 53.20% of the population of Kileely aged over 15 years left school at or under 15 years old, the corresponding figure for 1991 census was 55%, for the 1996 census was 44.48% and for 2002 was 40.30%. This figure is disproportionate with the recorded rates for adjacent private housing area and the city as a whole. Educational attainment not only impacts on the life of the person concerned but also on the broader family and the community as a whole. Kellaghan et al. citing Bourdieu and Passeron posit that 'levels of parental education would seem to be particularly relevant to children's school performance since it can be argued that it is the best socio-economic indicator of the cultural capital that a family can provide for children' (Bourdieu & Passeron, 1977 in Kellaghan et al., 1995, p. 34). Again the research participants were acutely aware of the importance of education and the implications of the lack of educational attainment in their lives. All of the adult learner participants interviewed had left school at an early age, some as young as 12 years old, and as they recalled the circumstances which led to them not completing their formal education, including financial constraints school culture and family responsibilities. They also acknowledged their unmet aspirations as one very active adult learner reminisced '*I regretted it* [leaving school early]*, I would have love to have been a nurse .... I can read, but my spelling .... I swore my children would not do that. I always valued an education. I said my children will not go through what I went through*'. Another mature adult learner poignantly caught the hunger of adult learners who had been early school leavers stating, '*they* [adults who left school early] *want a bit of knowledge ... they feel they missed out. They really need it in their lives. They didn't get it when they were young. They had no choice but to work or look after parents or whatever*'.

In many ways the school building was a physical manifestation of the challenging social and economic climate of the mid 1980s. It was both physically and demographically deteriorating and during the mid 1980s and early 1990s suffered severe vandalism, as one teacher who recalled her first introduction to the school '*every time we came in on Monday the windows were broken and the place was very run down and shabby .... half of the school wasn't used ... you know damp ... broken windows ... it wasn't much of a place*'.

The social context in which this study is set is also of note. In the mid 1980s there was no tradition of after school programmes for children and young people in the area. There was neither a tradition nor opportunities for adult education. Many women described a typical week in terms of '*doing housework, raising the kids and going to mass at weekends*'. So the growth of KCP offered opportunities to both children and adults to engage in a social learning context within their own communities and beyond. This was not without tensions

as fundamentally, women, all of whom were mothers, were for the first time leaving their homes to engage in morning and evening adult education programmes. It was a radical change in mindset and lifestyle. The tensions were both intrapersonal and interpersonal.

Finally, this study is set in a school with Delivering Equality of Opportunity (DEIS) status. While this specific label was not in place in the mid 1980s the school would have had designated disadvantaged status. DEIS schools draw their student population from low SES contexts.

## THE GROWTH AND DEVELOPMENT OF KCP

KCP emerged as a grass roots response to local learning needs. I was teaching in the school and in 1985 took a career break and began to explore avenues through which parents might become empowered to support their children's learning. Drawing on both the experiences of teaching and the conviction that parents paid a key role in the educational outcomes for their children, I developed a programme 'Parents and Children Learning Together' and offered parents the opportunity to engage in a series of eight morning classes designed to build their skills to support their children's learning. This initial programme became the foundation of KCP, and as the programme evolved I gained a deep understanding of the needs of parents and the dynamics involved in parents supporting their children's learning, growth and development. As parents sat and talked about the challenges of supporting their children's learning the conversation naturally turned to their own learning needs. They spoke of their hunger to learn and identified a number of areas of skill development including knitting, cookery, and literacy. Voluntary tutors were recruited, and later tutors[viii] were supplied by the City of Limerick Vocational Educational Committee (CLVEC) and so from a humble eight week programme a community programme offering a variety of morning and evening classes for adults evolved.

A local committee of which I am a member was formed and this committee nurtured the growth and development of KCP since 1985. Over that time frame morning and evening adult education classes, an after school programme for children (the 3 o'clock school) a SPACE project (project for young mothers who were neither in education nor employment), a crèche (to facilitate parents to attend classes) and Saturday morning art classes for children were all established in the school building under the umbrella of KCP. Furthermore, KCP ran a variety of social activities which offered opportunities for celebration and fun, these included women's holidays, family trips, day trips, dances and celebrations. Through the mixture of educational opportunities and social events relationships were forged within and across families and age groups, within and between the school and the community.

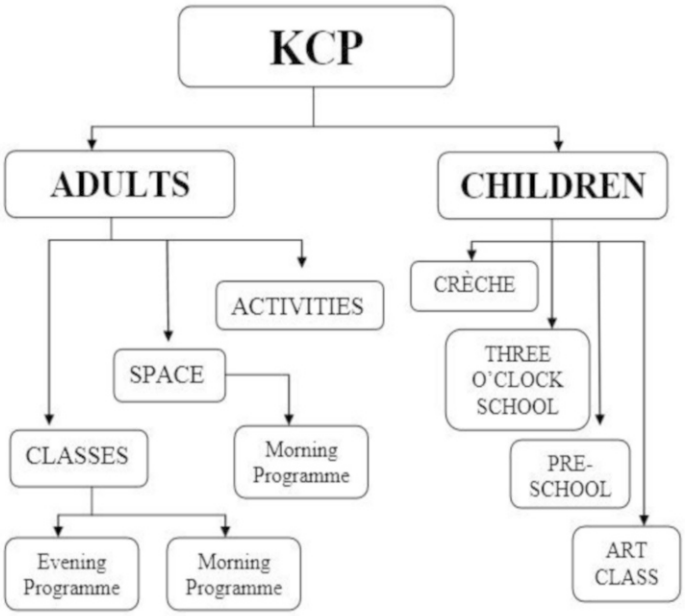


*Figure 1. KCP programme activities*

## OUTCOMES

KCP profoundly affected the quality of people's individual lives and family lives. It radically transformed the way in which the host primary school functioned, and furthermore it impacted on the local community. No baseline data was collected prior to the establishment of KCP, however, participants regularly compared their lives prior to, and subsequent to, their involvement in KCP in an effort to express the impact it had on their lives, and on the individual ecologies of home, school and community. In the following section I profile the impact of KCP on the target individuals who engaged in programmes in KCP, including adult learners, children and SPACE project participants. I make brief reference to the impact on the non-target interviewees which included tutors, teachers, ancillary staff, volunteers and representatives of statutory agency. Finally, in line with FER principles I acknowledge the impact of engagement in KCP and in this research on my own life.

## IMPACT ON TARGET INDIVIDUALS

The understanding of the impact of KCP over a 20 year period was informed by the work of the International Institute for Social change, one of their tools, 'Dimensions of Success' enables reflection and understanding of success in terms of relationships, process and results. This tool, renamed the 'Dynamics of Success' was adapted to frame the findings of this study as it enabled an exploration of the factors which contributed to building and maintaining success. The theory is that when these three inter-related elements are in balance sustainable success is achieved. In this context, relationships were understood as the 'quality and nature of relationships that were formed between individuals and between individuals and services, as a consequence of involvement in KCP' (Higgins, 2008, p. 247). Indeed relationships can be conceived as both an outcome of this initiative and part of the process which built a sustainable project. Process was understood in terms of how KCP functioned to identify, deliver, and evaluate services for adults and children and results were understood as short and long term outcomes for individuals, contexts, and services.

### *Adult Learners: 'The Wheel Turns'*

In this section 'participants' refers to interviewees who participated in adult education programmes within KCP. I interviewed twenty-four mature and young adult leaners who had participated in adult learning programmes over a period of years.

Relationships: The vast majority of adult learners were early school leavers who had not been involved in any educational programmes since leaving school. Adult learners developed supportive relationships, as one woman said '*they* [adult learners] *got on very well …. They are all good to one another and good for one another*' These supportive relationships offered friendship in times of need, nurtured aspiration raising, and built solidarity between adult learners who heretofore were '*neighbours*' and through the process of engagement became '*friends*'. One tutor described the dynamics of a group in which '*the frankness is unreal. There is a sense of confidence in the group*'.

The relationships between adults and tutors was identified as a core component which contributed to the success of the programme. The participants described this relationship as warm, respectful and affirming. They said that the nature of these relationships built resilience, confidence and skills. The following extract from one of the adult learner focus groups captures the nature of this relationship, '*they are not like tutors, they are our friends*'. One of the ancillary staff described the ethos and atmosphere of the adult education classes as a place where there was '*no hierarchy*', and everyone was '*on the same level*'.

The nature of relationships between adults and teachers also emerged as an important component of generating a successful project. Many of the adults who participated in adult learning had negative school experiences as children and some had even negative experiences engaging with schools as parents. They often used

comparisons in order to describe their experiences of engaging with KCP and the host school. One adult learner drawing on her experiences of other schools stated, '*there is no warmth in the other schools. It's just you drop your kids in, and that's it. There's no talking to teachers, no nothing, you know. You have to make an appointment. Whereas when you are dropping your children in here, if you have a problem you just say 'can I talk to you for a minute?*'

Some adult learners were not parents of children attending the host school were also loud in their praise for the teachers. They felt teachers made them welcome, and took an interest in the programmes they were undertaking. Teachers and adult learners shared a communal space[ix] as the staff room also functioned as the adult education room.

Another dimension to adult relationships was their interaction with children in the host school. Adults met children in the school corridors and greeted the children and acknowledged their achievements when a child might be sent from their classroom to the kitchen to show their parent their work.

Results: Adult learners identified academic achievements, skill development, improved health, enhanced lifestyle, a sense of solidarity, choosing to undertake learning to meet their own needs, and a greater identity with the community as tangible results emanating from engaging in KCP. While all the time acknowledging the importance of academic achievements, of '*trying to educate themselves a bit more*'. Research participants believed that to focus on this alone would be to do a disservice to an holistic and realistic vision for learning. Adult learners spoke of the pride and satisfaction they got from learning specific skills such as cookery, sewing, hairdressing, literacy, personal health as well as computer and musical skills.

Adult learners shared stories of their hunger to learn and the joy of being able to bring newly acquired skills and confirmed aspirations back into their own homes. They also spoke movingly of the transformative outcomes the impact of finding and claiming their voices. They believed that KCP offered a warm, friendly, non-threatening leaning environment where their confidence was fostered, their resilience built and close supportive networks nurtured. This was movingly captured by one adult learner who said that being involved with KCP was '*like a comfort blanket*' around her.

Process: This study sought to understand the process by which non-traditional learners chose to get involved in KCP and to stay engaged over long period of time. The opportunity to engage in learning for this cohort was counter-cultural. The reason they came and stayed had a lot to do with '*learning, laughing and drinking tea*'. Engagement met learning, social and psychological needs. The leaning was important but the friendships and solidarity was the 'glue' that kept the project alive and relevant.

Engagement in KCP offered opportunities for learning, leadership,[x] and the opportunity to contribute to the community. The pedagogy respected prior learning, was interactive, and needs-led. Local leaders emerged through this process and they recruited participants, promoted attendance and built a sense of pride and belonging. In the process of sharing a physical learning space, hope and

dreams were shared, affirmed and realised. One of the important ways in which KCP built solidarity and pride was through the celebration of achievements. We did this by honouring our adult learners at annual social events

*Children: A Safe Place to Be a Child*

In this section 'participants' refers to the ten interviewees who were former 3 o'clock school attendees.The impact on children who engaged in the after school programme was no less profound than that of adult learners. Again the outcomes are discussed under relationships, results and process. The findings on the impact of the 3 o'clock school on participants were triangulated through interviews with their parents, tutors and teachers.

Relationships: These young adults had attended the after school programme three to four days per week for a number of years. Many of the children attended in family groups. Over the timespan during which these participants were involved there had been four tutors in all working in the after school programme but only two at any one time.

Many of the children attending the 3o'clock school in the early years of KCP with siblings and cousins. The participants believed that the time they spent in the 3 o'clock school strengthened their family bonds, helped them to get along together, built resilience, promoted educational attainment and provided them with common experiences. The bonds they developed culminated in a sense of security. They described the 3 o'clock school as a sanctuary, or a safe haven where they could '*be themselves*'. They graphically described the '*family-like atmosphere ... you could feel very comfortable*'. One participant reflected on the impact it had on her stating that she '*felt safe to be a child*'. The participants spoke of their relationships with their tutors with warmth and appreciation. The bond between participants and tutors was precious to them. They said that the tutors were '*like parents*', stating that '*it wasn't just like and adult and kid thing, or an educational thing. It was more like a family thing*'.

In this caring environment tutors supported children, listened to them, laughed with them, taught them, and had high aspirations for them. The child-tutor relationship was deemed the most important aspect of the 3 o'clock school experience by many of the participants interviewed. While the homework support and nutrition were named as important aspects, the love and care children experienced surmounted all other aspects. The 3 o'clock school focus group aptly described the quality of relationships between children and tutors as, '*the key which opened the door to learning*':

- Voice 1: *that was the key* [nature of relationship]
- Voice 2: *That opened the door to learning*
- Voice 1: *Cos even if you had the good dinners. I'm not being smart like Ann. Even though you had the good dinners, and you had the homework, but if there was no communication, or no trust, it would be a waste of time, to be honest with you.*

Results: the results for participants in the 3 o'clock school were numerous, and included academic improvements, improved school attendance, improved behaviour, development of a sense of belonging, development of self-esteem and confidence, resilience and formation of positive relationships and positive life choices. For some involvement in the 3 o'clock school offered a place of social and psychological safety. One former participant graphically described her experience as follows:

> I remember me as young. We wouldn't have so much and you were inclined to get bullied at school for it you know ... whereas you might not have the best skirt on or the best pair of shoes. Whereas you were targeted for it. But when you came to the 3 o'clock no one judged anyone. You know that's the kind of feeling, and I always said it, It changed my life.

A teacher who worked in the host school during the initial stage of the development of KCP believed that the 3 o'clock school had a positive impact on children in terms of behaviour, learning motivation and capacity to interact with peers and teacher, she stated that,

> The children displayed more interest in [school] work and on the whole were more willing pupils than they might have been otherwise. In many cases their behaviour in class, previously disruptive, became amiable and op operative with both teachers and other pupils. In my classroom, I saw much improvement in general attitude, towards myself and the school at large.

Participants believed that the academic support they received in the 3 o'clock school impacted on the quality of their school lives, in that they went to school with their homework done and increased confidence in their abilities. As one participant noted:

> It [participation in the 3 o'clock school] had an effect on education. Cos we started to like it [school work] then. Cos you don't like it when you don't know how to do it. But, when you know how to do it, it becomes fun.

Process: Participants described how a 'place of safety' was created through open communication, a shared ethos around behaviour expectations and open and warm communication. A place where they enjoyed being children and a place where resilience was nurtured. The processes involved in the after school programme are best captured in the words of a former participant who highlighted the importance of communication and trust:

> With the tutors there was always an understanding. There … That's very important, and communication. It was very important that they would be able to talk to you. And you would be able to talk to them. And if there is no communication, there is nothing you know. I think ye [tutors] were happy, and we were happy. Cos ye brought out the best in us, and maybe we brought out the best in ye.

*SPACE Participants*

The SPACE participants were a group of young women who were mothers who were living in their family homes and were neither in education nor employment. The SPACE facilitator was a member of KCP committee, a local woman, outraged because she observed a *'waste'* of young women's lives. Their educational opportunities had ceased on becoming mothers and she strongly believed that KCP needed to develop specific opportunities to meet their needs. So we cleared out a classroom, found a small amount of funding to buy a sofa and comfortable chairs and set up a 'sitting room' within the school building. The facilitator created a safe nurturing space for conversations to take place, and invited guest speakers on topics of interest. She made contact with organisations in the city to provide support and guidance to these young women. KCP set up a crèche to provide childcare. SPACE provided young women who were mothers with a forum to share their experiences, hopes, aspirations, and frustrations with life. It provided a confidential context in which young women made friends, developed self-confidence, built resilience and focused on their own needs and aspirations:

> It was good to get me out of myself. Cos you do tend I think with me, tend to be surrounded with your own family. And tend to want to stay there. Cos it's safe, do you know that kind of a way. That [SPACE] started me off, bringing me out, doing other things. I found, for me anyway, it was great. I did anyway. I found it was brilliant.

Relationships: The nature of relationships between the young women involved in the SPACE project and their relationship with the facilitator was key to the success of this initiative. There was absolute confidentiality within the SPACE group.

Through engagement with SPACE the young women developed a deep bond, as one participant noted, '*we shared views with one another, and if any of us had problems, we spoke about them, and everyone tried to help … We got on grand*'. They met on Wednesday mornings, in their own room in the school, and in an atmosphere of caring, sharing, and confidentiality. They discussed their life situations, identified their needs, and began to realise they were entitled to have dreams for themselves, and their children. They supported each other, listened to each other, and were delighted with any achievements within the group. In the following extract one of the participants captures the ethos and solidarity which prevailed in the group:

> It was great. There was no rivalry, no jealousy, you know. Say if one girl said, say I bought him [her son] a pair of shoes and they were 20 pounds at the time, no one no one would get jealous. They would say 'Good on you', that, 'You saved up the money'. Cos money was tight at the time you know. You only got a certain amount on your book [social welfare payment]. And if you had a place of your own it was very hard to even pay out £20 for a pair of shoes for the child, and no one would begrudge em. That we were all friendly and we wouldn't be backstabbers, you know we wouldn't … I wouldn't go

> along and read [gossip] one girl, cos she got the shoes, and she wouldn't read me, cos I hadn't the money you know. We all supported each other now.

SPACE provided young women with the opportunity to share their opinions, and offer support to each other. They shared a common experience, which formed the foundation for the development of friendships and solidarity. As one young woman said:

> Once I came here, I made new friends. Cos they knew what it was like too. Cos they were on their own' . Do you know when the other parents are your own age, you are able to understand them more. And mainly all in the same boat as one another ... Most of us were unmarried mothers at the time, all around the one age.

Another young woman described SPACE as a safe place in which she could express her emotions. In SPACE, she was free to cry, in a context in which she would get support:

> It was brilliant. We done so much there. And we would go over there Ann, if one of us was having a bad day, or a bad week, we could talk. We all got our turn. Our space to talk, you know what I mean. If I wanted to have a good cry, what I wouldn't do at home, upsetting the mother and father, I could do it over there with the girls. If I had something I wanted to know about, the girls would tell me like. We could laugh and cry together. It was absolutely brilliant now.

Many of the young women felt their 'lives were over', when they became mothers. They saw a lifetime of childrearing ahead, with little personal freedom. Some of them had been in post-primary school when they became pregnant, and had subsequently dropped out of school.[xi] The SPACE project afforded them the opportunity to discuss their aspirations and to dream, to envisage further learning, and work opportunities:

> What I wanted to do all my life was to work with people or animals. That was my life-long dream. And I'd be saying 'I can't, I've left school, I have a child'. And they [the other SPACE participants] would be saying, 'Of course you can, of course you can, why can't you'? They gave me the confidence, do you know what I mean. Definitely I'll never regret the day coming over.

SPACE participants simply loved the facilitator and she loved them. She saw them as young talented women who had babies. While the facilitator was an adult learner and member of KCP the trust that was built between the facilitator and the SPACE participants and between the SPACE participants themselves was never compromised. They went into that room which they described as a '*safe place*' and were free to discuss their concerns and to dream their dreams and in this process nurture their aspirations.

The facilitator gained their trust, confidence, and respect. This is how one of the former participants described her:

> I think we felt even though she was an older person, we could confide in her. Definitely you could like. And even when she would pass out [from the adult classes] with the women of her own age, we would always get a big salute off her. And we would always salute her. And do you know, it was great that she was involved with our group, as well as being with her own crowd, She was still with us. And I think she felt close to us as well.

*Non-target Individuals*

Space does not allow a comprehensive discussion on the impact of KCP on tutors, teachers, ancillary staff and volunteers. However it would be remiss not to acknowledge the profound impact on these individuals. Teachers working within the host school acknowledged the positive relationships they developed with adult learners and tutors as a result of the location of KCP within the school building. This respectful adult to adult relationship was characterised by on-going communication, relating on a first name basis, teacher's genuine interest in parental learning, an understanding of the child in the context of family and a commitment to making learning accessible for children and adults. Teachers spoke of the joy of working in a multi-service school, and again contrasted it to the traditional model, where schools open between nine and three. In the traditional context there is minimal parental involvement, and consequently very different types of relationships between the adults in the child's life.

The ancillary staff are very complimentary of the ethos of the school and the role teachers play in building that inclusive ethos. The following excerpt from a member of ancillary staff highlights the ethos, and the extent to which teachers are proactive in creating a welcoming and inclusive atmosphere:

> Its so friendly, its brilliant. People walk in, the parents walk in, no matter who they meet they are all greeted, and again it's all first name terms. Its great, it doesn't matter whether the child is going to the crèche or to first class all the parents are greeted the same way, and friendly. And if they are going to see anybody along the way, along the hall a teacher or whatever, they will come out and straight away the teacher will know the person by first name. You know it is brilliant it is.

Ancillary staff were also conscious of the multi-service nature of the school. They worked in the crèche and pre-school as well as in the classrooms They visited the kitchen to collect equipment when adult classes were going on and knew the adult learners by name, felt they were friendly and might often have a chat with them. They enjoyed the interaction with adult learners, teaching staff, and children. Ancillary staff were also very aware of different aspects of the project, and of the value to the adult learners.

City of Limerick Vocational Educational Committee (CLVEC) supported KCP by supplying tutors for the classes, and facilitating grant applications. I interviewed a key member of CLVEC who was very familiar with the evolution and nature of KCP. According to this interviewee, KCP represented an innovative approach to

building educational capital and providing accessible learning opportunities to people who had not benefited fairly from the education system. This research participant acknowledged the impact her interaction with KCP had on her own life and on her skill development:

> I'll say one thing about KCP. It was very much part of my own education. I had come from a rural background, and I would have known very little about an inner city way of life. It would have been a culture that I wouldn't have been at all familiar with, so I said that I learned a lot about people … especially as I was being paid to provide a service. And I really think that part of my own learning was to get to know and understand local communities, particularly ones I would not be familiar with that were not part of my own earlier experience. And I think it is essential you know to ... It is important to keep learners to the fore. So for people like me you have to be open to learning open to seeing the learner as a ... creating a system for learners really.

*Researcher*

I came to this study site with a previous hestory of engagement. As I captured the lived experiences of participants I was all the time conscious not only of the impact of KCP on myself and but also conscious of the impact of doing this research on myself. The importance of declared subjectivity is well established. Lieblich in conversation with Clandinin and Murphy contends that 'what we require of our interviewees is something that we should be able to look at in ourselves as well' (Clandinin & Murphy, 2007, p. 643). Fine and Wise believe that we have 'responsibility to talk about our own identities, why we interrogate what we do, what we choose not to report on, on whom we train our scholarly gaze, who is protected and *not* protected as we do our work' (1996, p. 263). Indeed, the 'bracketing in' of the researcher has implications within the broader epistemological debate concerning the generation and validation of knowledge. According to Aull Davies researcher reflective practice, once seen as 'an undesirable effect to be minimised', is now welcomed 'as an opportunity to liberate the field from a positivist commitment to value free scientism' (1999, p. 178). Furthermore, the feminist and post modernists 'emphasised the socially situated nature of knowledge and hence the importance of specifying the knower' (ibid., 178).

Qualitative research demands we feel deeply and according to hooks 'to feel deeply we cannot avoid pain' (1997, p. xxiii). The challenge is not to just to feel the emotions but to acknowledge, understand them and consequently work from an informed perspective. This is not easily done as 'emotional labor is often ignored or devalued across a range of arenas, as it is seen as women's work' (Harris & Huntington, 2001, p. 131). Deegan repudiates the 'benign unidimensional portraits' painted by some qualitative researchers, and advocates reflexive practice which interrogates the 'multiplicity of researcher roles' which might be encountered in

fieldwork (1995, p. 350). Fine and Deegan problematise the relationship between the researcher's attributes and the research process. They contend that 'attributes such as humility, empathy, maturity, energy, determination and creativity are not ends in themselves, but a means through which rapport can be established, data gathered, and theory generated' (1996, p. 445). Deegan's call for a 'self portrait of the researcher, warts and all' (1995, p. 350), poses a challenge to qualitative researchers, to extend beyond personal reflection and to make oneself known to the reader, echoing Grumet's call to have 'courage to reveal our work' (1988, p. 93). Our work is ultimately reflective of who we are. While this honesty may place the researcher in a 'vulnerable' position, Clandinin repudiates the antithesis where the researcher may 'stay silent, or present a kind of perfect, idealised, inquiring moralising self' (2000, p. 62).

As qualitative researchers 'we are in the parade we presume to study' (Clandinin, 2000, p. 81). Indeed, 'narrative practice lies at the heart of self-construction' (Holstein and Gubrium, 2000, p. 104).

> My life has been nourished by my involvement with KCP, by my involvement in both the school and community, and by the process of researching this study. In Rager's words 'it was a life-changing experience'. (2005, p. 24)

> As I interviewed participants and came to a very deep understanding of the transformative impact of KCP on their lives, I was challenged to reflect on the impact of KCP on my life and the impact of undertaking this study. I can honestly say that the impact was transformative, as I engaged in conversations the participants reflected questions back to me and asked me directly what impact working in the 3 o'clock school or working with adults had on me I was called to answer their questions. I told them that working with them had enriched my life, taught me about education, and that my relationships with them were very precious.

## WHY KCP WORKED

There are a number of reasons why KCP sustained and was successful for over two decades. KCP met identified needs, embraced and built effective leadership practices (Dominelli, 1995; Field Belenky, 1997; Stall & Stoecker, 1998; Witt Garland, 1998), engendered hope (De los Reyes & Gozemba, 2002; Fine & Weis, 1996; Freire, 1992; Greene, 1995; hooks, 2003) and built and acknowledged aspirations and employed effective pedagogical practices. The development and nurturance of respectful relationships was integral to all of the above.

Freire's contention that 'our relationships with learners demand that we respect them and demand equally that we be aware of the concrete conditions of their world, the conditions that shape them' (2005, p. 102) resonates strongly with this study where relationships was found to be a key component in contributing to the success of KCP. This was manifested in pedagogical and relational ethos of KCP

through the creation of an inclusive learning environment in which according to one participant learners '*were all treated the same .... I did not feel intimidated*'. One of tutors also captured this phenomenon stating '*the adult learners realised they could give each other a lot and that they each had something to give*'. KCP worked because attended to building and nurturing quality of relationships which in turn infused the processes through which it operated and the results it achieved. Commitment to building quality relationships was manifested at committee level as well as at a programme level. KCP worked because it met the identified needs of the target group.

Understanding the nature and impact of relationships in the learning context is critical to fostering learning accessibility. This field of research is influenced by a number of theoretical discourses including attachment, selfdetermination, feminist, developmental and multicultural models (Cornelius-White, 2007; Hughes, 2012). Attachment theory has played a key role in the development of this field of inquiry. According to Cornelius-White, 'attachment theories (e.g. Bowlby, 1969; Stern, 1977) are influential on teacher student relationship research and originate from perspectives on mother-child relationships. Attachment research emphasizes the long-lasting and personality-forming nature of relationships. Secure and reciprocal attachments are important for students to engage in their relationships with teachers, peers, and subject matter and develop healthy self-concepts and senses of well-being' (2007, p. 115).

Hughes (2012) acknowledges the substantial body of research which has taken place in the area of teacher-student relationships over the previous two decades. She offers a lens through which to decipher this body of research by differentiating first and second generation research, with first mode focusing 'on documenting the effect of student-teacher relationships on children's behavioural and academic adjustment' (2012, p. 319). The second generation she posits is concerned with increasing 'our understanding of the development of these relationships, and the processes responsible for their effects, as well as to evaluate theoretically-informed interventions designed to enhance teacher-student interactions' (ibid., p. 319).

First generation research linked a number of outcomes to positive teacher-student relationships. These included prevention of early school drop out, positive school engagement, social functioning, behaviour, academic achievement and the growth of resilience. Bergeron et al. in their study designed to test the impact of teacher-student relationships and achievement motivation on predicting dropout intention equally for low and high socio-economic status students found that 'a negative relationship with teachers remains the strongest predictor of high intentions to dropout for most students' (2011, p. 277). Furthermore, Davis and Dupper attest to the 'growing evidence that interpersonal relationships are an important factor in student's choice to remain in school or drop out' (2004, p. 183). Drawing in a variety of sources (Gadsden, Smith, & Jordan, 1996; Metz, 1983; Willie, 2000) they conclude that 'poor relations with school officials and teachers can contribute to early school leaving' (ibid., p. 183).

In a meta-analysis Roorda et al. acknowledge the 'increase in research on the importance of affective teacher-student relationships (TSRs) for students' school adjustment' (2011, p. 493). They find that the quality of TSRs has been shown significantly associated with students' social functioning (e.g., Ladd, Birchm, & Buhs, 1999), behaviour problems (e.g., Graziano, Reavis, Keane, & Calkins, 2007), engagement in learning activities (e.g., Skiller, Wellborn, & Connell, 1990), and academic achievement (e.g., Waliente, Lemery-Chalfant, Swanson, & Reiser, 2008) (ibid., p. 493).

Johnson (2008) drawing on the work of Hatzistergos (2007) and Newman (2002) acknowledges the substantial improvements in children's physical health in industrialised countries. Newman (2002), however highlights the increase 'in psycho-social disorders of children [which] has taken place in most developed countries over the past half century (2002, p. 6), and advocates that the 'promotion of resilience' as an effective mechanism to support children and young people. Johnson defines resilience as 'both a *process* and *outcome* of coping in response to risk, adversity, or threats to wellbeing. It involves the interplay between internal strengths of the individual and external supporting factors in the individual's social environment' (2008, p. 386). Johnson, (2008) drawing on Luthar and Zelazo (2003) and Dryden, Johnson and Howard (1998), highlights the importance of student-teacher relationships in promoting resilience. Newman, highlights the importance of resilience stating that 'the promotion of resilience may be an important strategy in attempting to reverse this trend, through placing more emphasis on factors that promote well-being, and not just on the identification and elimination of risk' (Rayner & Montague, 2000).

There is a strong consensus on the broad benefits of positive teacher-student relationships. The second generation research according to Hughes, excavates the factors that contribute to that positive alliance. Toste posits that 'the environments in which children live and learn have a significant impact on their development' (2012), and contends that 'the classroom should be an environment that fosters strong and positive *working relationships*' (ibid., p. 21). Drawing on the field of psychology, Toste conceptualises this 'working relationship' as a 'working alliance' thereby term used when, 'referring to the quality of the relationship between therapist and client' (ibid., p. 22). Indeed she notes that 'the quality of alliance has consistently been found to be one of the best predictors of positive outcomes for clients participating in therapy' (ibid., p. 22). She concludes confirming the importance of teacher-student relationships, stating that 'warmth, trust, and bond that define an emotional connection, a positive working relationship also include a sense of collaboration and partnership shared between the teacher and the student' (ibid., p. 23).

Jones and Deutsch observed 'relational strategies that staff employ within an urban youth organization, and the ways in which those strategies contribute to a positive developmental climate' (2010, p. 1381). They found 'three specific relational strategies that staff used to develop relationships with youth' namely active inclusion, and attention to proximal relational ties. They concluded that 'these strategies contribute to an overall supportive culture, suggesting a relational

pedagogy in this after-school setting' (ibid., p. 1381). They contend that 'the club-as-home model, in which youth develop and emotional attachment to an organization driven primarily by psychosocial aspects of the place, points to how relationships can contribute to an overarching socioemotional experience for youth' (ibid., p. 1383). Ultimately, drawing on the work Bottrell, (2009), Brunie, (2009) and Lin (2001), they posit that the relationships developed by youth may 'serve as important sources of social capital for youth' (ibid., p. 1383).

Liew et al. (2001) hightlight the key role of teacher-student relationships in influencing learning. They note that 'although the characteristics that students bring into the classroom may influence their learning, characteristics of the learning environment may also directly or indirectly influence students' achievement. An aspect of the learning environment that has received considerable attention is the quality of teacher–student relationships' (2010, p. 51). Drawing on a substantial body of literature (Goodenow, 1993; Hamre & Pianta, 2005; Ladd, Birch, & Buhs, 1999; Palermo, Hanish, Martin, Fabes, & Reiser, 2007; Reddy, Rhodes, & Mulhall, 2003), they posit that 'teacher–student relationships consisting of a high level of warmth and low level of conflict has been associated with students' positive academic beliefs, motivation, and performance' (ibid., p. 52).

The ethos of care resonates with Greene's 'perspectives framework' in which she contends that we choose to either see big or to see small (1995). In 'seeing small' we distance ourselves from people, 'we choose to see from a detached viewpoint, to watch behaviors from the perspective of a system, to be concerned with trends and tendencies rather than the intentionality and concreteness of everyday live' (1995, p. 10). In 'seeing big' we choose to resist 'viewing other human beings as mere objects or chess pieces and view them in their integrity and particularity instead' (ibid, p. 10). Indeed, in choosing to 'see big' we see life from the other's point of view and understand them within the context of their life circumstances. In 'seeing big', we come into 'close contact with details and with particularities that cannot be reduced to statistics or even to the measurable' (ibid, p. 10). We see the kaleidoscope of life in all its richness, messiness, joy and colour.

The findings in the literature review strongly resonate with the study findings. Respectful relationships manifested through warmth, care, listening and investment created safe nurturing environments in which learning was made accessible. The model was school-based, incremental, intergenerational, ecological, multi-service, needs-led and respected power sharing. This model was guided by a set of reflective tools that enabled a three-fold investigation in to how we act, how we think and how we feel.

## NOTES

[i] SPACE was an intitiative within KCP which offered young women who were mothers and were not in education or employment opportunities to build their skills, identify their needs and find ways to meet those needs.

[ii] 3 o'clock school is an after school programme.

[iii] KCP committee comprised six local women along with the author.

[iv] Ancillary school staff comprised Special Needs Assistants (SNAs), Workers on a Community Employment Scheme and caretakers.

[v] Statutory organisation representation, comprised a member of City of Limerick Vocational Educational Committee, the organisation which supplied tutors for the adult classes and the after school programmes.

[vi] The Kileely estate is located in the Kileely A Small Area Population Statistics (SAPS) area. While Kileely comprises 368 houses the ward itself is larger and includes additional housing units ( 1981 total was 494, 1986 total was 465, 1991 total was 453, 1996 total was 499 and 2002 total was 535) the additional housing comprised a mixture of local authority housing and a small number of private households.

[vii] There was a nominal fee for attending adult education classes. The cup for collecting this fee was placed to the side and no records were kept of payment so that payment would never inhibit attendance.

[viii] In order to differentiate between the staff in the school and in KCP, I refer to school staff as teachers and KCP staff as tutors

[ix] This communal space was called 'the kitchen' and functioned as the staff room, adult education room and one of the rooms used by the 3 o'clock school. It was a converted cloakroom which initially had old school desks on which parent attending adult education classes sat.

[x] A group of local women along with the author formed a committee to manage KCP.

[xi] Some schools had asked the girls to leave on becoming pregnant, believing they would be bad examples to other young girls, if allowed to stay and complete their education.

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# 7. THE ROLE OF ROLE-TAKING

*Social Perspective Taking and Interpersonal Relationships in Virtual Simulations*

## INTRODUCTION

The idea that adopting the roles of others will foster an array of desired educational outcomes pervades the field of education. Social studies simulations, anti-bullying interventions, conflict mediation programs, and other role-taking exercises are borne from the implicit logic that when participants can "walk a mile in someone else's moccasins" better interpersonal outcomes will result. Specifically, by taking the perspective of others we will better understand them, and that understanding will pave the way for smoother interactions and relationships. Because education is a fundamentally social enterprise (Gehlbach, 2010), learning how to enhance the social interactions between teachers, administrators, students, and peers is essential to K-12 and higher education. Thus, improved interpersonal relationships should generate better educational outcomes. With the development of virtual environments, people can now walk a mile in the shoes of others and take the perspectives of others more flexibly, efficiently, and authentically than ever before. Virtual environments also allow for the systematic evaluation of these role-taking exercises. In this chapter, we explore theoretical pathways through which role-taking might improve interpersonal relationships. We articulate hypotheses connecting role-taking – a particularly powerful approach to taking the perspective of others – to improved relationships. We then provide an illustrative example of a virtual environment from the Social Aspects of Immersive Learning (SAIL) project. Through this case example, we describe how these hypotheses might be tested and how the resulting knowledge could lead to improved relationships in educational contexts.

> *Mrs. Andrews: "Honestly, Bill, that child hasn't got a clue about my life, not a single clue"*
> *(Freaky Friday, 1976)*

In the movie *Freaky Friday*, Mrs. Andrews and her adolescent daughter Annabel are annoyed with each other. Both wish for a life as easy as they perceive the other leads. They soon get their wishes. By magically switching bodies, Annabel and Mrs. Andrews each learn that the other's life is not so easy.

Many role-taking exercises in education employ the same implicit logic portrayed in *Freaky Friday*: that if we can "walk a mile in someone else's

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moccasins", then we will better understand their situation, constraints, and behaviors as well as their thoughts and feelings. As a consequence of this enhanced understanding of the other party, role-taking might engender a more accurate perception of the other party's point of view, and, consequently, increase empathy toward the other. According to this logic, interpersonal relationships should be strengthened as a result of effective role-taking exercises i.e., the two parties should become more caring (Noddings, 2006) and supportive (Wentzel, Battle, Russell, & Looney, 2010), as well as less conflictual (Pianta & Hamre, 2009) and disaffected (Skinner, Furrer, Marchand, & Kindermann, 2008). Because relationships are comprised of the two parties' actions, perceptions, and memories of those interactions (Gehlbach, Brinkworth, & Harris, 2012), improved relationships are essentially a subjective perception. In education, the capacity of teachers and students to develop and sustain positive, trusting, and reciprocal interactions is paramount to effective learning (Pianta & Allen, 2008).

Until science allows us to magically switch bodies with someone else, however, we must rely on more metaphorical approaches to improve relationships and, potentially, learning. Being able to don someone else's role, position, or psychological experience is a critical capacity. Role-taking interventions based on these types of metaphors promote a host of desired educational outcomes ranging from decreased stereotyping to increased helping behavior (Ku, Wang, & Galinsky, 2010).

The variety of forms interventions take raise questions about *how* and *through what processes* such positive outcomes result. Does role-taking improve relationships by creating cognitive dissonance between one's own views and those adopted through the role-taking (Festinger & Carlsmith, 1959)? Does the shift in role from observer to actor change people's perceptions of the situation and lead people to make new attributions for why others behave as they do (Ross, 1977)? Perhaps taking on the persona of another increases the possibilities that you will see similarities and commonalities between yourself and your adopted role – which in turn promote increased liking (Galinsky & Moskowitz, 2000). Another possibility is that role-taking exercises simply blur the identity boundaries between self and other (Aron et al., 1991). It could also be that through imagery and shared neural patterns, role-taking helps people to mirror and mimic others in a way that fosters improved relationships (Chartrand & Bargh, 1999). There may be truth to several of these possibilities. This chapter explores these hypothesized pathways and the critical question of why role-taking activities might enhance social outcomes in educational contexts. We begin by placing role-taking within a larger context – as a specific, but uniquely powerful approach to social perspective taking (SPT) – and defining SPT.

## SOCIAL PERSPECTIVE TAKING

SPT entails "discerning what others are thinking and feeling in a non-egocentric manner" and attending to how others perceive the situation (Gehlbach, 2004, p. 209). There are two key elements of SPT – the ability to accurately assess the

thoughts, feelings, and motivations of others, as well as the motivation to engage in this ability in the first place (Gehlbach, 2010).

Role-taking is one of many ways that a person might engage in SPT. Specifically, role-taking is a form of *projection* (see Gehlbach & Brinkworth, 2012, for other SPT strategies). By "putting ourselves in somebody else's shoes" while remaining attuned to their goals, pressures, limitations, and feelings, we can better empathize with them and take their perspective. In contrast to overt behavior or conduct, George Herbert Mead defined role-taking as "a strictly mental or cognitive or empathic activity […] a process by which a person momentarily pretends to himself that he is another person, projects himself into the perceptual field of the other person, imaginatively 'puts himself in the other's place,' in order that he may get an insight into the other person's probable behavior in a given situation" (Coutu, 1951, p. 180). Thus, the specific strategy of role-taking is one of many strategic approaches a person could use to attempt taking the perspective of someone else.

However, putting yourself – with your own personal history, personality traits, and values – in someone else's situation may be tremendously difficult in some instances, particularly when SPT targets are quite different from you. Thus, in more sophisticated versions of role-taking, people are not only asked to take on the role of someone else, but they are psychologically immersed in the target's situation and made cognizant of the ways in which the target is a different person. In other words, more effective role-taking activities combine the act of projecting oneself into someone else's shoes while scaffolding an adjustment process to help role-takers account for differences between themselves and the "target" (Gehlbach & Brinkworth, 2012).

Through the role-taking process, perceivers engage in SPT to better understand and empathize with targets. Consequently, this unique strategy is well suited to promote interpersonal relationships. Several studies indicate that SPT can be taught (Gehlbach, Young, & Roan, 2012; Marangoni, Garcia, Ickes, & Teng, 1995) and that we can improve relationships by getting a person to take the perspective of the other party (Galinsky & Moskowitz, 2000). Yet the pathways between SPT and improved relationships are unclear.

Several theoretical pathways may cause role-taking activities (see Figure 1) to enhance interpersonal relationships. We focus on four distinct channels. First, role-taking may spark evolving perceptions of targets' behaviors and situational constraints. As these perceptions develop, they may become more empathetic, thereby improving relationships. Second, role-taking activities may provide opportunities for perceiving a greater number of similarities between the parties. By transforming "them" into "we", perceivers may increasingly bestow in-group preferences on former out-group members. Third, as a new persona is adopted through role-taking exercises, identity overlap may blur boundaries between self and other – allowing our egocentrism to give the benefit of the doubt to the other person. Fourth, role-taking may expose a perceiver to particular images and/or have them engage in certain behaviors which result in shared neural structures between the perceiver and the target. These shared structures may generate vivid

cognitive experiences that are readily available to facilitate the understanding and acceptance of a target's subsequent behaviors. These pathways may all have the potential to increase perceptions of friendliness, trust, and caring between two parties. We outline the pathways in the following section, and then explore how virtual environments could test these and other mechanisms that underlie role-taking. The ultimate goal is for scholars to apply the findings to educational settings in order to improve relationships and enhance learning.

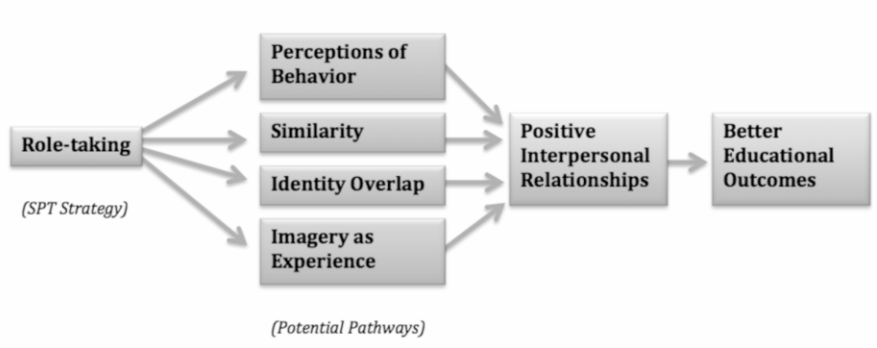


*Figure 1. Potential pathways linking role-taking to improved relationships.*

## ROLE-TAKING AND INTERPERSONAL RELATIONSHIPS

### *Perceptions of Behavior*

Role-taking may improve relationships by changing perceptions of behavior – both our own behavior and those of others. By attempting to maintain a consistent self-image or by understanding the situational constraints of others, we may allow flexibility in our perspective and/or decrease the degree to which we are judgmental of others' behaviors, either of which should enhance interpersonal relationships.

### *Cognitive Dissonance*

People like to maintain a consistent self-image (Cialdini, 2009). If students hold a self-image of being caring and friendly, but find themselves teasing their peers, the inconsistency between self-image and behavior creates a tension. Consequently, students may rationalize their behaviors in some way to alleviate this tension (e.g., "the victim was a real jerk and deserved it"). When individuals attempt to explain behavior that puts one image of themselves in conflict with another without adequate external justification (e.g., money, social pressures), they must adjust at least one of the ideas internally to reduce the tension, or cognitive dissonance (Festinger & Carlsmith, 1959), and regain a consistent self-image.

Cognitive dissonance may occur as a consequence of role-taking. For example, imagine a student who has been trying to understand why her teacher gives challenging assignments. Partway through the year, the student is asked to teach class for a day. She may now see how her peers learn more from challenging problems because they do not engage to the same extent with easy ones. After this role-taking exercise, the student might face the following internal inconsistency: a) she may still prefer not to work on the difficult assignments but b) she now sees how the difficult assignments benefit her. Assuming she is motivated to learn and do well in school, behaving in accord with her "path-of-least-resistance" preference would be inconsistent with her attitudes. To reduce the resultant dissonance, she may adjust one or both of her views to maintain consistency. This could result in adopting some of the teacher's preference for challenging tasks as her own, acknowledging merit in the teacher's point of view, or softening her initial view of how challenging the assignments are. Through these cognitive adjustments, she is likely to be more open and understanding in subsequent interactions, thus facilitating a more positive relationship with her teacher.

*Situational Forces*

Another way role-taking might improve relationships is through recognition of situational forces while observing a target's behavior. Individuals typically acknowledge these forces for themselves, but fail to do so when considering others (Jones & Nisbett, 1971). Ross (1977) describes a related phenomenon – the *fundamental attribution error*, i.e., people's tendency to overvalue dispositional or personality factors and to undervalue situational forces. For instance, if students do not finish homework, the teacher might assume they lack discipline, harbor a bad attitude, or hold any number of negative personal traits. However, it seems just as plausible that the missing homework is due to issues in the students' lives (e.g., an illness in the family, a car accident, computer error, etc.). People commit the fundamental attribution error because of a general tendency to focus more on the actor (rather than the situation) as the likely reason for why something happened. Yet, when one becomes the actor, the tendency is to make more situational attributions (Jones & Nisbett, 1971). By taking the perspective of another – and particularly by doing so through role-taking exercises – participants make the same shift from observer to actor. As a result, they are likely to better acknowledge the situational forces at play and be less likely to commit the fundamental attribution error. Through role-taking, the perceiver's point of view should become more aligned with the target's perception. Furthermore, they may feel empathy for the target once they too have to manage the constraints of the situation. Both the aligning of points of view and the increase in empathy should strengthen the relationship between the perceiver and the target.

*Similarity*

Similarity offers a second theoretical pathway through which SPT might produce better relationships. Discovering similarities can lead to liking and may also be perceived through common group identities.

*Liking*

Perceiving another individual as similar to oneself is a powerful predictor of liking (Montoya, Horton, & Kirchner, 2008). Previous investigations show that people favor those who they see as being similar, even if those similarities are trivial (Galinsky & Moskowitz, 2000). They also allocate resources more equitably with and show more positive regard towards similar others (Hewstone, Rubin, & Willis, 2002). In sum, similarity serves as a powerful heuristic through which individuals assess whether or not they will foster a positive relationship with someone else.

If role-taking exercises reveal similarities, then better interpersonal relationships should result from role-taking experiences. By taking on someone else's role, students may conclude that their behaviors are similar to those of the target (perhaps because they now appreciate the situation in a way that they had not previously), which, in turn, should increase liking and strengthen relationships.

In addition to uncovering similar behavioral tendencies between the perceiver and the target, role-taking might help reveal similarity in values. Through role-taking, perceivers are asked to take on different values and are often treated differently by others as a result. By trying on a new set of beliefs perceivers may discover similarities in the values they would hold in the same circumstances. In other words, they may experience a change in where they stand because they are now sitting in a new role. That new stance is likely to share at least some commonalities with the target in question. For example, imagine members of an environmentalist group on a college campus were asked to engage in a simulation in which they took on roles of building developers (whose values conflicted with environmental groups). Although their values differ in many ways, through role-taking the students may discover similarities in that the building developers also want to help people lead better, more enjoyable lives. Through finding similarities at the level of core values, a role-taking exercise might help students better understand the opposing perspective, which, in turn would facilitate better interpersonal relationships.

*Common In-group Identity*

Similarities might also be perceived through group identities. People tend to favor in-groups over out-groups (Devine, 1995). Though we are members of multiple groups at any given time, some affiliations are more salient than others. According to the *Common In-group Identity Model* (Gaertner, Dovidio, & Bachman, 1996), intergroup relations may benefit by acknowledging superordinate groups that integrate two or more separate groups. These superordinate group identities could

cause the positive tendencies toward in-group members to be directed to former out-group members.

Through role-taking, extant superordinate group identities may become salient and meaningful. To the extent that students engaged in role-taking activities focus on salient superordinate group identities, they may begin to treat targets as members of their in-group, thereby improving their relationship. At a Model UN simulation, for example, a student delegate focusing on health-care in China may learn of many differences in government and policies compared with the United States. However, by representing and role-taking Chinese views, the student may also realize that China wants to improve health outcomes for its people and the world, despite approaches that are different from those taken in the United States. This discovery of common purpose could make salient and reinforce the superordinate identity (i.e., members of a world community) promoting greater governmental, and more positive interpersonal, relations among the student delegates.

*Identity Overlap*

A third pathway potentially linking SPT to improved relationships is presented by Aron and colleagues (Aron, Aron, Tudor, & Nelson, 1991). They suggest that over time, people in close relationships increasingly blur their identity boundaries to the extent that the other eventually becomes included within the self. Although in role-taking the closeness is perceived by only one party, the cognitive aspect may allow for a similar, though unidirectional effect. According to Aron et al., perspectives are a key aspect that may fuse between self and other whereby a "person acts as if some or all aspects of the partner are partially the person's own" (p. 242). Using this framework of "including the other in the self", it is possible that during role-taking, a similar process unfolds. When a person takes the perspective of another, perhaps identity boundaries are blurred, thus minimizing previous distinctions – after all, students are typically asked to "become" another individual in role-taking exercises. This process would result in positive relationships by reallocating the personal benefits of egocentric behaviors to a newly fused identity including the other. Davis and colleagues (Davis, Conklin, Smith, & Luce, 1996) explain, "… well-developed perspective-taking abilities allow us to overcome our usual egocentrism, tailor our behaviors to others' expectations, and thus make satisfying interpersonal relations possible" (p. 713).

Though *including the other in the self* and the previous concept of *common in-group identity* are not mutually exclusive, they can be differentiated from one another by the distinctness of self-identity. In the former, the self is not distinct. In the latter, the self is distinct and there is no inherent ambiguity of boundaries. See Figure 2 below.

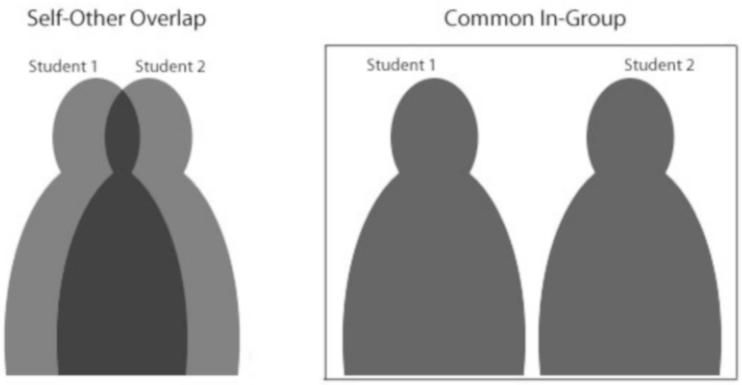


*Figure 2. Self-other overlap contrasted with common in-group (Adapted from Aron et al., 1991).*

In addition to a blurring of the self and other, a second possibility includes seeing more of the self in others, which can affect how a person takes the perspective of another. Ames (2004) suggests that perceivers attempt to infer mental states from a target's ambiguous behavior through two readily accessible templates: the self and stereotypes. When there are perceived similarities with a target, a perceiver tends to employ projection (using the self as a template) as a perspective taking process. Conversely, when perceiving out-group targets, stereotypes are used as a perspective taking process.

Thus, role-taking simulations may encourage participants to see themselves in the other. As a result, perceivers may engage in projection, rather than stereotyping strategies. This particular SPT strategy may produce a more charitable read of the other person's thoughts and feelings than the stereotyping strategy. By encouraging a type of SPT in which perceivers are more likely to give targets the benefit of the doubt, better relationships would likely result.

## IMAGERY AS EXPERIENCE

A final proposed pathway from SPT to better interpersonal relationships involves mental imagery and neural activation. According to Mervyn Nicholson, 'Visualizing is a way of knowing: it is a mode of generating knowledge […]. How we see determines what we see; and how we see is embodied in our mental images. By virtue of their condensing impulse, images have a kind of power that abstract ideas can never have' (as cited in Petrova & Cialdini, 2008, p. 506).

### *Imagery*

People engaging in role-taking form new mental images, which affect how they see and interact with others. The powerful new imagery is readily available in future interpersonal exchanges. Petrova and Cialdini (2008) explain that aside from

informational content, the ease in which information comes to mind affects attitude and opinion formation. For example, the use of product imagery in commercials provides easy access to mental representations of the consumption experience – images that may assist in subsequent decision-making processes. Similarly, when students engage in role-taking, imagery of their adopted perspective is readily available, making it easier to understand and accept the target's subsequent behaviors. With this increased understanding of their behaviors, stronger relationships seem likely to ensue.

While images are more powerful than abstract ideas, experiences are even stronger – and experiences are what role-taking simulations are designed to provide. Indeed, imagining a behavior uses similar neurophysiological structures as performing the actual behavior, ranging from simple hand movements to more complex behaviors of rowing or weightlifting (Petrova & Cialdini, 2008). It is possible that thoughtfully imagining another's perspective in a primarily cognitive role-taking exercise would also activate similar neural structures; adopting their persona through an active role-taking simulation might provide even richer activation. Preston and de Waal (2002) explain that imagining or observing another person's emotional state can automatically activate a representation of that state in the observer, which activates associated autonomic and somatic responses. During role-taking, by imagining the perspective and emotional state of a target, we activate similar neural structures in our own brains. Likewise, a student who through role-taking imagines the sad emotional state of a fellow student not only thinks about the emotion, but has a similar neural response – in conjunction with quick access to mental imagery of a target's perspective, such an experience could produce increased empathy, understanding, and better relationships.

## TESTING PATHWAYS WITH VIRTUAL ENVIRONMENTS

This chapter proposes that role-taking may improve relationships through four potential pathways: perceptions of behavior, similarity, identity overlap, and imagery as experience. The understanding of these processes can provide invaluable information for the enhancement of relationships in educational contexts. However, these proposed pathways are complex and likely include overlapping and concurrent processes. Fortunately, virtual environments present a powerful platform to effectively test these underlying processes. In the following section, we illustrate how a particular virtual environment could investigate the four hypothesized mechanisms linking role-taking to improved relationships.

### *Virtual Environments*

Using current technology of virtual environments, the links between role-taking and improved relationships can now be experimentally tested. Virtual environments allow avatars to be changed in a click and for participants to immerse themselves in a new persona instantly. In the Social Aspects of Immersive Learning (SAIL) project, we used a virtual environment that was originally created

to teach middle school students about ecosystems science (Metcalf, Kamarainen, Tutwiler, Grotzer, & Dede, 2011). Using the game engine *Unity*, the adapted virtual environment is a web-based, 3D world. See Figure 3 below.


*Figure 3. SAIL environment.*

The platform can be deployed on any computer with an internet connection. Within the virtual environment that includes a pond ecosystem abutting a golf course, we set up a role-taking exercise to uncover the links between SPT and improved relationships. In the simulation, participants enter the virtual world as a golf course owner and immediately meet a reporter from the local newspaper. In the initial interaction, the reporter asks participants/owners to read an article he wrote about the golf course that they (the participants) own. As the golf course owners, participants then explore the virtual world meeting with various non-player characters who inform them about the owner's preferences in preparation for the negotiation with the ranger. For example, participants learn from a veteran club member that they would like to turn the pond into a water hazard. Participants also talk to the club pro and groundskeeper about such issues as building a cart path and increasing the size of the pond – all things that would be beneficial for the owner, golf course, and members.

Some participants also walk in the shoes of the ranger before entering into negotiation as the golf course owner. These participants learn that the ranger would like to keep the pond in its natural state. They meet with a bird watcher, environmental scientist, and veterinarian to learn that the ranger (the role they are temporarily playing) would like to develop a nature path and keep the pond the same size among other things. Participants who take both roles return to their true identity as the golf course owner before entering a negotiation with the ranger over six issues concerning the use of the pond. Participants are informed that they will receive a commission based on each of the outcomes agreed upon with the ranger.

The design of this environment has key features that are representative of most role-taking activities. Participants mentally project themselves into the roles of the golf course owner and ranger, pretending to be that person in the virtual world and gaining insight on the person's behavior in a given situation. Due to the virtual nature, we also have the ability to do things not possible in regular role-taking exercises. For example, the virtual negotiation platform provides controlled, consistent responses limiting extraneous variables. One can easily take on a new role, such as the ranger, and have that experience be identical for all participants. In addition, participants can make decisions in the virtual world and see reactions or consequences of those decisions. For instance, the golf course owners make choices about which golf-bags are to be shown in the display window of the pro shop.

## UNDERSTANDING ROLE-TAKING PATHWAYS

For researchers, the virtual world provides an opportunity to isolate mechanisms underlying the role-taking function. By manipulating whether a participant walks in the shoes of the ranger, we can measure the effects of role-taking on relationships; specifically, we can explore how the pathways outlined in this chapter might link SPT and improved relationships.

### *Perceptions of Behavior*

Could our perceptions of behavior link SPT to better relationships? Perhaps after role-taking, the desire to maintain consistency in our own behaviors (i.e., reducing cognitive dissonance), or the recognition of situational forces in others' behaviors (i.e., decreased fundamental attribution error) leads to better relationships.

The SAIL environment offers an opportunity to test the potential role of dissonance in yoking the role-taking experience to improved relationships. We could provide external justification and help participants discount the ranger's perspective, thereby reducing dissonance. For example, in one experimental condition we could provide information that the ranger's perspective is unsound. Friends and colleagues in the virtual world could acknowledge that the ranger is an extremist within their group. This group would be contrasted to a condition in which participants engaged in the ranger role normally, without a crutch for reducing dissonance. If cognitive dissonance is a pathway from role-taking to better interpersonal relationships, we predict that participants in this experimental conditions would incur less dissonance, resulting in weaker relationships with the ranger than those who receive no external justification for role-taking.

It is also possible that role-taking impacts relationships through a greater respect for the other's situation. To explore this hypothesis, we could manipulate the degree to which the owner or ranger must make decisions based on situational forces outside of their control. For example, we might set up a version of the study in which the ranger must take certain positions because of government regulations. One set of participants could walk in the virtual world as the ranger and learn of

the situational constraints behind behaviors. These participants would gain information of the ranger's views as well as explanation of why the ranger has those views: "The ranger would like to keep the pond in its natural state *because* …". Another group could experience an identical role-taking experience except that they would only receive information: "The ranger would like to keep the pond in its nature state". Through follow-up surveys we should find that those who learned more about the situational forces (i.e., were told the information and the rationale) should have positions more similar to the ranger than those who did not gain situational knowledge (i.e., who received only information but did not get an underlying rationale). Furthermore, if the recognition of situational forces is a key aspect of role-taking, then participants who walked in the constrained ranger's shoes should display less fundamental attribution error and indicate a stronger relationship due to greater empathy for the situational limitations of the ranger.

*Similarity*

Increased perceptions of similarity could also cause role-taking to improve relationships. We could test this hypothesis by creating and highlighting similarities between the ranger and golf course owner. Virtual friends of both characters could mention the similarities. For example, in one condition, the golf course owner and ranger may become aware of their common identity as dedicated supporters of the local school system. Though they have differing views around the golf course and surrounding environment, they share common values as invested supporters of the local school system. By contrasting the relationship measures with a control condition in which the owner and ranger's common involvement with the school is not present, we could determine if similarity is a pathway whereby role-taking leads toward better relationships.

*Identity Overlap*

The blurring of identity boundaries may be an underlying mechanism through which SPT produces improved relationships. To identify whether role-taking leads to better relationships through identity overlap, our study could loosely follow the experiment by Aron and colleagues (1991). After taking the ranger's perspective, participants would be measured on two outcomes. First, they would rate a series of trait adjectives describing themselves or the ranger. Later, they would make a series of me/not choices related to the trait words while their reaction time is measured. If role-taking induces self-other overlap, there should be longer response times for traits different between the participant and ranger compared with those who did not take the ranger's perspective. Secondly, using the Inclusion of Other in Self scale (Aron, Aron, & Smollan, 1992), participants could choose the degree of self-other overlap that best represents how they feel about the ranger from a series of increasingly overlapping concentric circles. The resultant scores could then be measured for potential mediation between role-taking and improved relationships.

*Imagery as Experience*

Do imagery and neural activation function as links between role-taking and positive interpersonal relationships? According to Petrova and Cialdini (2008), low levels of vividness and high cognitive load are two factors that undermine imagery. In one experiment, we could have participants to take the role of the ranger in one of three environments: 1) a series of PowerPoint slides with stick figures, 2) the current virtual environment with computer avatars communicating via text boxes, or 3) a virtual environment with avatars played by confederates with live audio. While each environment provides the same information about the ranger, the level of vividness varies. If increased vividness boosts the effects of imagery, and imagery provides a more robust role-taking experience through the activation of similar neural networks, then the increased imagery via the more vivid and rich sensory experience should correspond with improved relationships.

To explore the viability of the imagery-as-experience pathway in another way, we could focus on cognitive load. Specifically, we might induce cognitive load in one condition by asking participants to memorize a 12-digit number or prepare for a quiz while role-taking. Although all participants would take the role of the ranger in the same virtual environment, those with an increased cognitive load would have a diminished imagery experience and likely have weaker relationships with the ranger than other participants.

## CONCLUSION

Through the proposal of four potential pathways (perceptions of behavior, similarity, identity overlap, and/or imagery as experience), we explored how role-taking might improve relationships. Subsequently, we outlined ways to test these pathways through the use of virtual environments. As education moves toward online and virtual platforms, we may increasingly utilize these virtual learning environments to systematically enhance relationships throughout educational contexts, whether between teachers and students in an elementary classroom, middle school peers on the playground (e.g., anti-bullying interventions), or between roommates in college (e.g., bias reduction).

Though virtual role-taking will not replace face-to-face interactions and relationship building activities, it can augment them. Consider the proliferation of Massive Open Online Courses (MOOCS), virtual orientations and trainings, and online degree programs within higher education. Yet, even in these increasingly online contexts, education is still a fundamentally social enterprise with interactions between online lecturer and students, between students in online discussion boards, and between students in virtual workgroups. Thus, the need for insight and ability to foster relationships in these evolving educational settings remains high.

However, prior to implementing any educational interventions, we should first utilize virtual environments to further understand how the underlying mechanisms of SPT, interpersonal relationships, and educational outcomes are linked. Role-

taking is a particularly promising way to gain this understanding. Furthermore, virtual environments both enable the study of how to understand others better while also serving as a vehicle for training in this capacity.

This chapter specifically explored *how* and *through what processes* role-taking leads to positive relationships and suggested ways we might learn more about the critical mechanisms underlying role-taking. As indicated in the introductory conflict between Mrs. Andrews and Annabel, relationships depend on our ability to understand where the other is coming from. Although, we cannot switch bodies for a day, virtual environments allow us the closest alternative. By utilizing this technology, we can take many steps forward in our understanding of role-taking and its effect on interpersonal relationships – steps forward in the shoes of another.

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# 8. THE ROLE OF EMOTIONS AND INTERPERSONAL RELATIONSHIPS IN EDUCATIONAL REFORM

*A Behaviour Management Case Study*

## INTRODUCTION

Education is essentially a relational activity, where the interaction between teacher and learner creates a learning space in which knowledge is constructed and co-constructed. It is clear however that the learning space is not just cognitive. It is coloured and nuanced by emotion and interpersonal relationships. Indeed teachers and schools have long acknowledged the influence of school on social and emotional development, a fact that has been acknowledged in more recent times through the formalisation of social and emotional learning in school curricula (Durlak et al., 2011). Classroom and behaviour management are areas where the cognitive, social and emotional aspects of learning intersect. Through the ways in which they respond to each other's behaviour, teachers and children learn not just about appropriate behaviour but also determine whether the learning space is a facilitative one.

Some educational contexts appear to give rise to more challenging behaviour than others. In particular, the tendency for challenging behaviour to be an issue in contexts of social and economic disadvantage has been noted, and in some cases attributed to a 'disconnect' between the middle class world of teachers and the working class world of students. This chapter explores a classroom management intervention which took place within such a context. The intervention, called the Working Together Project, took place in three schools in Ireland, each of which is located within an area of socio-economic disadvantage. The Working Together Project was a research and intervention project that grew from an educational network of 18 elementary schools serving the learning needs of children living with urban disadvantage and a teacher education institution on the Western seaboard of Ireland. The project was designed as a practical response to the network's request for research and intervention in the area of classroom management. Three of the network schools self-selected to participate in the project. The specific objectives of the Working Together Project were to:

- create a positive ethos of approved behaviour that is shared by children, parents and teachers, and an improved, systematic response to challenging behaviour that is shared by children, parents and teachers;
- develop a sustainable approach to behaviour;

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– document, using established research methods, the processes involved in i) challenging behaviour, in ii) formulating and implementing an appropriate response, and disseminate the findings to the broader educational community in order to improve practice.

It is clear from these objectives that the project had a strong focus on interpersonal relationships and emotions. In this chapter the data yielded by the project are explored in terms of what they reveal about the nature of emotions and relationships at school and their impact on classroom management.

## INTERVENTION DESIGN AND RESEARCH METHODOLOGY

Challenging behaviour can be interpreted from a number of different perspectives (Cowley, 2001; Martino, 2000). The Working Together Project viewed behaviour as a response to environmental and individual needs while recognising the objective undesirability of some behaviour (Jones, 2003; Lyons & O'Connor, 2006). Consequently, the project emphasised developing an understanding of behaviour while being clear about behavioural expectations. The driving principle behind the Working Together project was collaborative practice and its design was based on reports of successful interventions in the areas of behavioural problems and bullying (Dearden, 1994; Hickey, 1999; O'Hara, Byrne, & McNamara, 2000; Smith & Sharp, 1994). The interventions that were implemented in each school were based on an assessment of need at the start of the project in each setting. Common foci or intervention that emerged across the participating schools included the development of a whole-school policy and the participation, support, and personal development of children, parents and school staff. In particular, given the project's objectives, the intervention team identified a need within each school for the development of a clear, agreed, statement of behavioural expectations and of an escalating series of positive and negative consequences that could be applied in to reinforce positive behaviour and sanction negative behaviour respectively.

Each of the participating schools was located within an urban social housing setting in Ireland. School 1 was a large co-educational school, with 500 pupils and 34 teaching staff, School 2 was a boys' school, with 115 pupils and 15 teaching staff and School 3 was co-educational up to second grade and girls only thereafter, with216 pupils and 23 teaching staff. In order to maximise the transfer of learning from site to site, the project had a lagged design. During the first year the project began in School 1. The project team worked in School 1 for two years. The research and reflection process gave rise to learning which was applied to Schools 2 and 3, starting in year three of the project.

This is a participatory action research project utilising a multiple-case case study methodology (Stake, 2006). It involved designing and implementing an intervention intended to bring about a change, rigorously observing the process and nature of the actual change, reflecting on these processes and consequences, and re-planning for future changes (Kemmis & Wilkinson, 1998). Case study design has been described by Quinn Patton as 'holistic and case sensitive' (2002, p. 447)

and was chosen because it offered a scaffolding to explore both the context of the school and the interpersonal relationships between stakeholders from a holistic perspective, which acknowledged temporality, sociality and physical boundaries (ibid., p. 447). These interrelationships merit further investigation within an Irish context.

Behaviour checklists and questionnaires completed by teachers in the first year in each school were used to identify a group of children whose behaviour in class was defined along a spectrum from highly disruptive to non-disruptive. In each year of the project these children, their parents and teachers participated in focus groups and interviews, which examined perceptions of behaviour at school, the characteristics of effective classroom management and the perception of interventions and changes implemented through the Working Together Project. In the first and final year teachers and children in each school completed questionnaires which assessed the level of challenging behaviour at school, the classroom management strategies used to address challenging behaviour and the perception of the effectiveness of those strategies. The number of children, teachers, and parents who responded to each data collection instrument over the four years of the project is summarised in Table 1. Throughout the project the research findings were fed back to participants in order to facilitate their reflection and inform future actions. This co-interpretation of research results between researchers and participants built a strong sense of ownership of the project and its interventions.

*Table 1. Participant rate and profile across schools*

| | School 1 | School 2 | School 3 | Total |
|---|---|---|---|---|
| Questionnaire participation rate | 290 children<br>29 teachers | 48 children<br>8 teachers | 80 children<br>10 teachers | 418 children<br>47 teachers |
| Focus group participation rate | 52 children<br>43 teachers<br>17 parents | 24 children<br>12 teachers<br>10 parents. | 40 children<br>24 teachers<br>12 parents | 130 children<br>79 teachers<br>39 parents |

The data presented in this chapter include those presented in the final evaluation in which the 6 members of the project team, 29 teachers and 6 parents were interviewed (Smyth & Dunne, 2005). The project yielded a large amount of qualitative and quantitative data. The following discussion focusses on those

findings that relate to the role of emotions and interpersonal relationships in behaviour.

## LESSONS LEARNED ABOUT EMOTIONS, INTERPERSONAL RELATIONSHIPS AND BEHAVIOUR AT SCHOOL

### *Quality of Children-Teacher Relationships*

Children's emotional response to school in general was measured by asking them the extent to which they liked school and the extent to which they liked their teachers. Most children reported liking school at least sometimes. At the start of the project 38% of the children in school 1, 27% of the children in school 2 and 52% of children in school 3 said that they liked school most of the time. At the end of the project, 47% of the children in school 1, 32% in school 2 and 62% in school 3 reported liking school most of the time. The results of the children's focus groups confirmed the questionnaire findings that children generally liked school. The primary relationship in the classroom is between the children and the teacher. The majority of children in each school reported liking or getting along with their teacher most or all of the time. In school 1 61% of students said that they liked their teacher most/all of the time in the first year of the study and 69% expressed the same sentiment in the final year of the study. In school 2, 59% of the children said that they liked their teacher most or all of the time and 75% said the same in the final year. In school 3 75% of children said that they liked the teacher most or all of the time in the first year and 84% said so in the final year.

Another way of looking at the relationship between teachers and children through the questionnaires was to ask how often teachers get really cross with students. In the first year, 54% of children in school 1, 34% in school 2 and 42% in school 3 said that the teacher got really cross a lot of the time. In the final year of the project, 36% of children in school 1, 39% in school 2 and 15% in school 3 gave the same answer.

The qualitative data suggested that children's prevalent feelings of liking or disliking schools were linked to emotional reactions to their teachers and to the quality of their interpersonal relationships with their teachers.

Q. Are you happy in your class?

A. No

Q. Why not?

A. Cos I hate the teacher.

Q. What's your school like?

A. It's the best school ever! Cos my teacher is nice and lets us do the good stuff.

The children's views were echoed in the parents' interviews.

Q. Why would you say that they like school so much?

A. It's the teachers

A. They make friends

A. The teachers praise them

For the children, meeting friends and peers was also an important part of school life and was seen as one of the reasons that they both attended and enjoyed school

Q. Why do people come to school?

A. To learn and spell and do maths and to play with friends 'cos sometimes you mightn't have friends near you.

A. To make friends and to get an education

The role of school in making friends and its role in social skills development and in self development were factors mentioned by the parents also.

Q. What should school be about?

A. I think it's the best place they can learn to get on with other people because it's the first place they're in a group. If you can get it at this age it's very productive. It is the first time that they're with other children.

Teachers also saw school as having a role in self-development and in presenting social role models to the children. They were also conscious of the importance of a positive atmosphere at school.

I suppose that we all trained for the academics and we're very conscious of the curriculum that we have to cover but sometimes the information we impart educationally we can integrate the social skills we desire.

Despite, these general positive comments about school and teachers, it was clear that school can be boring for children.

Q. What makes you look forward to school?

A. If we have something good inside school like P.E. but sometimes even though if we have P.E. it's probably something isn't ...it isn't really good inside school cos we're probably doing the same things over and over again.

Q. … and what happens when you do the same things over and over again?

A. It gets kind of boring so you feel just like walking out of it.

*How Relationships Impacted on Construction of Norms of Behaviour*

As the main aim of the project was to look at behaviour within the school one way to look at the relationships in the school is to consider what consensus or co-construction of rules was in existence. To want extent did stakeholders within the school have shared ideas about how children should relate to each other and to their peers? The questionnaire data at the start of the project in each school give some idea of how children and teachers felt about this aspect of school life. Teachers were asked about the extent to which they consulted with children about classroom rules. These responses could be seen as an indication of the teachers' attitudes to the role of children in behaviour management. In each year, all of the teachers in each school said that children should be involved in the construction of rules, but they did not always do so. In year one, only 48% of the teachers in school 1 said that they had involved children in the construction of class rules and only 33% of children reported having been consulted. In school 3 66% of teachers and 73% of children said that children had been involved in the construction of class rules. In school 2 62% of teachers that they had involved in the construction of class rules but only 45% of children reported being involved. By the final year of the project, 89% of teachers in school 1, 87% of teachers in school 2 and 89% of teachers in school 3 said that they involved children in the construction of class rules. Eighty-three percent of children in school 1, 71% in school 2 and 74% in school 3 agreed that they had been involved. These results seem to indicate a shift in the way that teachers thought about children's role in behaviour management.

At least some teachers confirmed that their involvement in the project had led to a greater cohesion between children, teachers and parents.

> I think the cohesiveness really, that everybody is working towards a common aid, is very important, we weren't all singing off the same hymn sheet … there's a greater sense of communication between the kids, the staff and the parents.

Generally, pupils were seen as actively engaging in the process and it was seen as giving them some 'ownership' over the behaviour policy within the school.

> I think the kids as well enjoy getting involved in the making of the rules and it made them feel like it was their own.

By the end of the project, children were also more likely to say that they had had some involvement in making up the rules.

Q. Who made up the rules?

….

A. All of us in the school because we said we'd be good and do all what the rules told us to and our parents said we had to say we'll keep the school rules too.

Some children could distinguish between the expressed ethos of involvement which did not always match their perceived reality.

The teacher said that we made them up with her but we didn't really.

In this next extract, a child illustrates how the concept of respect can be used to mask requests for obedience.

Q. X you know when it says 'respect other people'. What does respect mean?

A. It means don't shout at them and don't be cheeky and just do what they say.

*Teachers' Capacity to Manage Challenging Behaviour and Strategies Used*

Teachers reported emotional reactions to children's challenging behaviour and their emotions also impacted on their perceived ability to respond to that behaviour. It was clear that when the relationship between teachers and children was positive and relatively trouble-free teachers felt more positive about their work.

I don't ever feel tense coming in in the morning but maybe that's cos I've infants, I don't know. There was one year and it wasn't a pleasure and that's because of who was sitting in front of me and I didn't enjoy it and that's not a nice place to be.

Teachers reported feelings of frustration and fear in relation to classroom management.

… and I was afraid to bring up issues that I felt were important to me because I felt I was stupid, was I the only one? Now I can say "anyone got any suggestions for me?" I can now say I feel more empowered as a teacher.

In their questionnaires, teachers were also asked to indicate the extent to which they used a variety of strategies to address children's misbehaviour. A number of these related to building relationships, namely, consulting with children about class rules, discussing the behaviour with the child, informing parents of positive behaviour and informing parents of misbehaviour. The children were also asked about the frequency of strategies. The wording of the teachers' and children's items differed. The teachers' questionnaire had more items. Table 2 shows the percentage of teachers in each school in each year of the project who said that they used each

strategy often. It also shows the responses of the children to two of the items which were similar to those of the teachers.

*Table 2. Percentage of teachers using a particular strategy often to address misbehaviour and percentage of children saying a comparable strategy was used a lot*

| | School 1 | | School 2 | | School 3 | |
|---|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 1 | Year 2 | Year 1 | Year 2 |
| *Strategy* | | | | | | |
| Consult with children on class rules | 45 | 78 | 75 | 71 | 70 | 67 |
| Inform parents of misbehavior | 62 | 61 | 50 | 57 | 50 | 33 |
| Discuss behavior with the child | 59 | 89 | 63 | 86 | 70 | 89 |
| Have a talk (child) | 47 | 33 | 37 | 30 | 35 | 22 |
| Inform parents of positive behavior | 28 | 44 | 50 | 100 | 60 | 44 |
| Send a positive message home (child) | 12 | 23 | 9 | 20 | 4 | 4 |

It is also interesting to note whether the teachers found the strategy to be effective. The following table notes the percentage of teachers who found the strategy usually effective, regardless of how often they used it. Again, the extent to which two comparable strategies were judged as helping them to behave most of the time by children is also indicated.

*Table 3. Percentage of teachers who found a particular strategy to be usually effective when used to address misbehavior*

| | School 1 | | School 2 | | School 3 | |
|---|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 1 | Year 2 | Year 1 | Year 2 |
| *Strategy* | | | | | | |
| Consult with children on class rules | 52 | n/a | 25 | 43 | 40 | 33 |
| Inform parents of misbehavior | 38 | 44 | 38 | 57 | 50 | 67 |
| Discuss behavior with the child | 14 | 22 | 38 | 29 | 40 | 33 |
| Have a talk (child) | 67 | 73 | 59 | 42 | 58 | 69 |
| Inform parents of positive behavior | 59 | 72 | 38 | 43 | 70 | 67 |
| Send a positive message home (child) | 63 | 77 | 54 | 52 | 29 | 56 |

Further detail on the kinds of interpersonal strategies used by teachers was evident in the children's interviews and focus groups.

Q. And what does the teacher do when people get mad, like that in the class?

A. She says calm down and don't.

A. She sends them to the office and ring your mother.

Q. Oh right if you don't behave?

A. They give you time to calm down.

A. And if you don't calm down they call your mother to come up and collect you.

Q. What would the teacher do?

A. Sort it out. Ask them what happened and listen to both sides of the story. I think the teacher will just (chat) with them.

One of the main foci of the intervention was the development of an escalating series of consequences for positive and negative behavior. Children and their parents were aware of the strategy of implementing a series of consequences.

> She's this thing on the wall I think it's brilliant. If they're bold they don't get 10 minutes play on the yard and if they're still bold after that they get 10 minutes out of computer time and to my X that's bad bad now. And if you get the 10 mins off the yard well that's it, then he's good then because he knows that it's the computer next.

> If you're bold (naughty) you stand out and if you're bold again you go on the tiles and if you be bold again you get a penalty sheet and if you be bold after that you get …

> Suspended!

> No you get a note home and if you be bold again you get suspended

> If we're good in class we get praise from the teacher and stars and things

Teachers generally recognized the benefits of this kind of system.

> I know that the steps and I know where someone is and it gives me confidence knowing what the next step is.

There were some dissenting voices however. In the following extract one teacher describes how the children tried to find loopholes in the policy.

> It didn't work at all in my room they'd say,"well it doesn't say in the book that I can't chew gum" and it just became impossible so I just use my own and the hundred stars and that works for them.

*Reasons for Misbehaviour*

Some insight into the role that relationships play in causing misbehaviour can be gained by an analysis of the children's questionnaire. Some caution needs to be employed when interpreting these results as there is a ceiling effect in children's responses. Children were given a choice of possible reasons for misbehaviour and they tended to select each one. Table 4 gives those responses to the items related to relationship with peers. The results indicate that peer relationships play a role in causing misbehaviour although the reliability of distinctions between the items can be questioned, particularly as it seems unlikely that so many children do not get along with their classmates.

*Table 4. Peer-related reasons for misbehaviour endorsed by children*

| | School 1 | | School 2 | | School 3 | |
|---|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 1 | Year 2 | Year 1 | Year 2 |
| *Why do you misbehave in school?* | | | | | | |
| It makes other children laugh | 89 | 86 | 68 | 79 | 93 | 93 |
| Other children get me into trouble in school | 47 | 63 | 34 | 48 | 67 | 73 |
| I don't like sharing books, colours or other things | 91 | 92 | 68 | 93 | 90 | 92 |
| That's what my friends do | 83 | 87 | 73 | 70 | 94 | 99 |
| Other children are at me on the way to school | 92 | 89 | 87 | 79 | 99 | 96 |
| I don't get along with the rest of the class | 91 | 93 | 79 | 84 | 94 | 96 |

Children were also asked if they misbehaved because their 'teacher isn't fair'. In the first year of the project, 75% of children in school 1, 82% in school 2 and 85% in school 3 answered in the affirmative. In the final year of the project, 86% of children in school 1, 89% in school 2 and 92% agreed with this statement.

An attempt can be made to verify the children's answers by comparing them with that of the teachers. Teachers were also given a list of reasons as to why children misbehave. Three of these items were teacher related, teacher is unfair, teacher is too soft, the children dislike the teacher. The responses to these items is presented in Table 5.

*Table 5. Teachers' agreement with reasons for children's misbehavior*

| | School 1 | | School 2 | | School 3 | |
|---|---|---|---|---|---|---|
| | Year 1 | Year 2 | Year 1 | Year 2 | Year 1 | Year 2 |
| *Why is the behaviour of some children challenging?* | | | | | | |
| Being picked on by peers | 59 | 28 | 25 | 29 | 100 | 67 |
| Other children get them into trouble | 21 | 22 | 13 | 29 | 40 | 22 |
| Encouragement from peers | 69 | 72 | 75 | 29 | 90 | 67 |
| Desire to be part of a gang | 66 | 61 | 38 | 29 | 90 | 56 |
| Teacher is seen as unfair | 41 | 6 | 63 | 14 | 30 | 33 |
| Teacher is seen as too soft | 31 | 11 | 25 | 29 | 30 | 33 |
| Dislike of teacher | 55 | 11 | 38 | 14 | 40 | 33 |

Children's emotional reactions were cited as the cause of disruptive behaviour. Frustration with academic work was cited as a reason for misbehaviour by children.

I get mad if I get something wrong.

It was also raised by teachers particularly in the context of children comparing their academic skills to those of their peers.

> Especially with their peers I feel that there's great understanding if children aren't able to perform academically but I do think that with their peers they want to perform they want to have a certain level.

Common emotions related to negative behaviour that emerged in the context of interpersonal relationships at school were frustration, anger, boredom, and jealousy.

Q. Why would they be fighting?

A. Because they hate each other.

A. Maybe he did a better picture than him.

Q. And do you think it's hard for children when they have trouble with reading?

A. Yeah. Cos they think then that the other people might think that they are stupid not reading, but it's not really their fault they can't read. It's just that they can't read, they can get better at it if they do it theirselves.

The children spoke about how children would get angry with each other, call each names or fall out over games. They used the word ‘hate’ to refer to how they felt about each other.

Q. Why would they get into a fight like that

A. Two are bullying one

A. They hate that fellow there

A. He’s probably always slagging that fellow there.

Q. Why do you think they’re not getting on?

A. They might of said stuff one of them something took something belonging to them and accused them of taking it.

A. Say if she went off with another friend one of/ one of her new friends and she felt like left out and she wasn’t talking to her.

A. And ‘cos they were fighting over who wanted to go first in skipping

A. They be calling names to each other and they could be slagging their Mam or their Dad or their parents and the other could be calling the other one back.

As can be seen from these quotes, teasing by others, known as ‘slagging’ in Ireland, was a common source of interpersonal conflict among children. The difficulties caused by this way of relating to one another was noted by teachers and it was a feature of children’s interaction at the beginning and at the end of the project.

For me too slagging is a big thing. It has had/it has a negative effect in the school and it’s very widespread

It’s a way of relating to each other that’s very=

=They might know it’s wrong but they still do it.

Q. What are the things that lead to that challenging behaviour if it does happen?

A. Remarks sometimes that someone could pass to another one

A. Sometimes it could be something that happened at home or on the way home and they bring it into school and they just continue it

The importance of ‘being tough’ and presenting this image to others was evident in the comments of the children who were interviewed.

> … people get threatened and they're probably just too scared cos other people are friends of them. And some people just start a fight and they know that they can't kill 'em, they just start it ....they show the people that they're tough but they're not really that tough, they just want to show off in front of us.

Teachers felt that some misbehaviour was due to unmet emotional needs at home.

> A. Well if there was some serious trouble at home but you wouldn't know what was going but I don't know you can't see into the fellow's mind or another fellah hassling him in the yard
>
> Q. So the reason for misbehaviour could be something at home
>
> A. Very often something at home
>
> A. …They come in very tired yawning they might be up til 2 or 3 in the morning.

Children were aware of the difficulties they had relating to each other at times and described how they themselves, or their teachers would try to regulate this behaviour.

> A. I don't like fighting with friends. but sometimes my friends do annoy me
>
> Q. Then what happens?
>
> A. Name just slags me. I try to hold in my anger we all help me
>
> Q. So they're just playing but they have to go out by the wall? So the teacher just puts them at the wall
>
> A. They do be fighting over games or the ball
>
> Q. Do they make friends after all?
>
> A. Teacher makes them shake hands

*Teacher-parent Relationship*

With regard to relationships with parents, teachers were asked to what extent they felt that parents/guardians should be involved in constructing class rules. In the first year of the project, 39% of parents in school one, 62% in school two and 50% in school three felt that parents should be involved in constructing class rules. By the end of the project, these percentages had declined, so that 28% of teachers in

school one, 50% in school two and 22% in school three felt that parents should be involved in constructing class rules. In reality most teachers did not involve parents. No teachers in school two involved parents in constructing class rules in either year. In school one only 3% of teachers involved parents/guardians in the construction of class rules in year one and 22% involved them in the final year. In school 3 20% of teachers involved parents in the construction of class rules in year one but no teachers involved them in the final year of the project.

Teachers' perspectives on their relationship with parents varied between schools. Teachers in one school were complimentary about parents and spoke of their willingness to attend teacher-parent meetings. Others felt that at least some parents were less interested in their children's education and expressed frustration at parents' lack of engagement with school. Most teachers seemed to feel that it was a minority of parents who were disinterested. Yet, they felt frustrated because it was often those parents that they wanted to meet most.

> Well they are the primary educators but I think a lot of them don't have respect for school. It's kind of an 'us and them' situation. And they always take the side of the child like, they never take the side of the teacher. If you call them in if it's in relation to behaviour, they don't want to admit that the problem lies with their child because then it reflects back badly on their own parenting skills.

> You know what parents/ if there's even the slightest thing of even disrupting class you'll know there'll be a response but one or two where you won't get a response.

Teachers saw the expectations for behaviour at home as being different to those at school. They characterized the home environment as one with lower standards for behaviour.

> … Even coming in they don't hold it for the next child.(description of holding doors etc.) They obviously/ that is not taught to them at home they obviously run through the door and that's it.

> But I think that the skills they learn in school are only applied in school because outside of school, at home, in a lot of cases, anything goes. It's 'get out of the house, I don't want to see you till it's time for bed' in a lot of the cases. … I think in a lot of cases, the social skills they learn in school are only applied in school. They kind of throw them out the window when they leave school I think.

While the intervention prompted teachers to engage with parents, it was felt that this was an area where more could be done.

> The project also motivated us to keep picking at the parents and keep trying to bring them in on board you know. Certainly you couldn't say that there was as much parent involvement as we'd want but insofar as we were able within the confines that we're able to work in we did everything we could.

> I think I'd like to see parents a bit more involved in the school like we need to work on that a bit more for the sake of the children.

This lack of relationship with parents was particularly an issue when it came to working with children whose behaviour was particularly challenging. In these instances the teachers felt that the project had not adequately equipped them to deal with those issues and that the situation was exacerbated by the difficulty in reaching the parents of those children.

> Well I think it's been reasonably successful … like for the kids, the 90% of the kids it's been fantastic, but it's just the few kids on the periphery that's still, it still hasn't worked for … so much has been tried with these kids it's very hard to see what else can be done for them only contain them and that's what you really are doing, you know, is containing them.

> Our biggest problem is 'children in crisis' and they [the project team] were commenting "Oh, we will discuss the children in crisis. We will discuss the problem children" but we never got any answers on how to deal with problem children … And they are our biggest problem. And it's very good to have rules and consequences [but] these children are outside of rules and consequences.

> A couple of parents would be aware of it [the project] because they would have been involved in it, but none, I would imagine, I'm only guessing, I would imagine none of the parents that would be our target children, that would be parents of our target children, I would imagine not. It's usually the parents of actually the children who are quite well behaved.

The parents who were interviewed indicated their own willingness to come to the school and to meet with parents when required, but, like the teachers, they identified some parents as being unwilling to do so. It seems that teachers and parents are agreed then, in their characterization of some parents as neglectful.

> Some kids as young as [mine] not going to school. Their parents don't care like. I find that very stupid. Kids have to go to school.

Parents however, were more likely to recognise that other parents' reluctance to come to school might not be related to indifference.

> It's actually very hard but you have to hit them hard. Parents have to be pushed because they were neglected as well for years. People forgot that we existed down there for so long that people gave up caring and now you have people coming in and they are trying to pick up where it was never even started. People are trying to get things up now but parents have lost interest. Their attitude now is "Why should I do it?".

> I think they're involving them [parents] great, but it's more the parents than it is the school, if you could get more parents to come in it would really help, because they done the shared reading, that's another one, and they found it

> very hard, so to get the parents themselves to come, now I know a lot of them work, but some of them are afraid. … You know they're more afraid, you know if they kind of made an effort to come in and have a look and see what they're asking of you, they're not asking you to come in and teach.

Some parents identified gaps in the development of relationships with teachers.

> Q. Is there a way that it could be any better?... Is there any information that you would need to make sure you were able to support him.
>
> A. Are you not supposed to be introduced to the teacher beforehand? So they can get used to one another.

Parents were mostly positive about their relationship with the school, which had been enhanced by the involvement of the project.

> It was lovely actually, we were in the room down here and they asked us questions, … but what was brilliant when they brought us in to the teachers and … we were all sitting around and they really listened, the teachers listened to us. And then they were saying things back to us, and we were going "oh we never knew that now", that was brilliant.

*Teacher-teacher Relationship*

The strength of teacher-teacher relationships and their role in supporting teachers was clear from the start of the project.

> I like the camaraderie in the staff, … I like the level of interaction we have as teachers. We work very much as a team and we support each other every way, workwise, materials, sharing what's there and I enjoy that.
>
> The staff are phenomenal I don't think you could possibly get a staff like it anywhere and the genuine empathy and genuine liking that they have for the children is passed on and the kids know its genuine caring.

Participation in the intervention strengthened these relationships, particularly when it came to teachers' willingness to share difficulties they had with behaviour. The extent to which teachers could collaborate around behavioural issues was measured by asking them whether they discussed behavioural management strategies with other staff. At the start of the project 34% of teachers in school one, 37% in school two and 50% in school three engaged in such discussions regularly. All of the teachers in school one and three and 87% of the teachers in school two found these discussions helpful. At the end of the project, 56% of teachers in school one, 50% of teachers in school two and 44% of teachers in school three (note only difference of one teacher) engaged in these discussion regularly. Again, all of the teachers in school one and three and 87% of those in school two found these discussions helpful. Several teachers mentioned this also in their interviews.

> Before it was as if you were an individual in your own classroom a problem arose if you couldn't deal with it you had to send for the Principal and now people might have an arrangement with the teacher next door. Little things that we should have sorted out years ago but we never got around to.
>
> Everyone is helping a lot more. No one is afraid to admit their fears and [when there's a problem] they all pull out all the stops
>
> That we all feel that we can communicate with somebody that we can go to somebody with a problem, everybody seems to feel that you can actually approach someone now.

In two of the schools a need for bringing staff together was identified because of changes in school circumstances and because of a tendency for staff to be divided because of age.

> The atmosphere within the school has changed. There is more openness between junior/senior staff. More sharing of resources, staff experience, skills and a greater admission of failure in dealing with issues around behaviour, therefore a readiness to request/receive help and advice from colleagues.

The success of the project was attributed to the fact that teachers felt supported and that staff themselves were given the tools to work together rather than simply being an exercise in 'solving' behaviour problems in the school.

> Understanding better the behaviour problems and learning skills to cope with them.
>
> I am now more aware of behaviour and challenging behaviour and am more confident about dealing with or handling situations if and when they arise.

*Issue of Time*

Time emerged as a significant obstacle to the success of the project across all three schools. Although the provision of substitute cover for teachers helped to some extent, the intensive nature of the project and, in particular, the expectation that teachers would give up (at least some of) their own personal time to participate in the project were seen as creating potential difficulties.

> I think at times teachers were probably tired and a big questionnaire comes in and lots of feedback and reading. And I think motivation. At times there may have been lulls. Being realistic about it because of extra hours. And I mean, it's ok for me cause I don't have a family. I don't have you know, commitments as much as other teachers who may have babysitters etc. and can't accommodate it.
>
> I think the process worked very well but it's a very time consuming process. It's a very time consuming process, but it did work very well and … because

of the process, there's ownership around it. It isn't the principal saying this is our behaviour policy. It's our behaviour policy, you know.

## IMPLICATIONS AND CONCLUSIONS

The results of the Working Together Project intervention showed that it was largely successful because it provided a mechanism whereby the interpersonal relationships of children, teachers, and parents could be explored and nurtured in a safe and bounded environment. The success of the project lay more in strengthening teachers' ability to respond to behaviour than in reducing the amount of challenging behaviour.

The project data indicated that most children had a positive experience of school. When disruptive behaviour did occur, children identified peer issues and emotional reactions as important causes. Such reactions were either in response to the child's academic experience or their emotional reaction to others. Common emotions related to negative behaviour that emerged in the context of interpersonal relationships at school were frustration, anger, boredom, and jealousy. Teasing by others was a common source of interpersonal conflict among children. These findings suggest that much of the work of behavioural management intervention might well be around helping children to manage and regulate their emotions and reactions to others.

Children's prevalent feelings of liking or disliking schools were linked to emotional reactions to their teachers and to the quality of their interpersonal relationships with their teachers. Over the course of the project teachers came to believe that children's perceptions of teachers were less important as explanatory factors for behaviour than the children's relationship with peers. Nonetheless both teachers and parents acknowledged the importance of teacher-child relationships in creating a positive experience of school for children. All of the participants in the project indicated that, in general, children were more consulted about behavioural expectations at the end of the project than they were at the start. Equally, it seemed that positive behaviour was more likely to be rewarded. These results were encouraging as this approach to behaviour has been associated with the development of greater social responsibility amongst children (Roache & Lewis, 2011). Consultation about class and school rules is not a simple process. Teachers and children did experience some difficulty in making consultation real rather than tokenistic. One of the difficulties here is the need to distinguish between what is negotiable and what is not. Sometimes a simple view of consultation is taken where it is suggested that children can make up the rules. In fact, this is not always possible or appropriate. What is in question really is a negotiated consultation. Being clearer about these parameters may make it less likely that children will be disappointed with the results or feel that teachers are being insincere.

Teachers reported emotional reactions to children's challenging behaviour and their emotions also impacted on their perceived ability to respond to that behaviour. Teachers reported feelings of frustration and fear in relation to

classroom management. These feelings could be said to interfere with their capacity for change.

Relationships at school between children and teachers, between teachers and parents and between teachers and teachers were found to be emotionally charged. These emotions were found to be enabling, e.g., feeling supported, or inhibiting, e.g., feeling disrespected. The importance of the quality of parent-teacher relationships was evident both in the reporting of negative relationships and the description of positive relationships. The participants' recounting of these relationships was charged with feelings of respect or lack of respect. Conversations with teachers and parents in interviews suggested that teachers perceive a greater divergence between their views and the views of parents than parents do. This is largely due to teachers' focus on 'hard-to-reach' children and parents. Understandably, teachers' discussions of challenging behaviour are coloured by the strain of managing the very disruptive behaviour of a small number of children. Teachers wanted a clear strategy for dealing with these children and were disappointed that the project did not deliver in this regard in their opinion. Finding ways to assist teachers in relating to these children becomes even more important given the finding that when children become more challenging, teachers tend to become more punitive in their responses (Roache & Lewis, 2011).

What is evident is that all intervention, regardless of the severity of the children's behaviour, requires relationship building and that teachers ability to build relationships with children who are very challenging and with the parents of those children may well be inhibited by their perceptions of these children and parents. The parents in this study, while equally angry at what they perceived as the neglect of some children by their parents, were more open to the possibility that such parents may have difficulty relating to school rather than simply not being interested. This points to the difficulty that can emerge between parents and teachers who come from very different social backgrounds (Christianakis, 2011). There was also the danger that teachers would paint all parents with the same brush or take parents who are interested for granted and the contact between parents and teachers facilitated by the project went some way to getting some teachers to recognise that not all parents are disinterested.

The results of the study indicate the importance of facilitating conversations between educational partners in order to develop an understanding of the other's perspective. While the views of teachers and children and teachers and parents often converged, there were also times when they diverged. The content of these divergences, e.g., that some children can only be contained or that some parents simply do not care, is conflictual and interpersonally challenging. Interventions in such relationships are likely to involve conversations where feelings run high and self-esteem is challenged. Addressing this emotional content is an element of intervention which needs to be seriously considered and planned for. Furthermore, it is a process which requires time and patience above everything else. One of the major impediments to the success of this project was the availability of time and energy for teachers, parents and children to engage meaningfully with each other.

As an intervention team the staff of the Working Together Project could not force these relationship building sessions. Teachers and schools are the gatekeepers for such interactions and they often have to take the initiative in reaching out to parents. While the project team could encourage and facilitate they could only begin to encourage teacher parent conversations.

A clear and unsurprising finding of the project was that teacher-teacher relationships are very important in helping teachers to cope with the emotional impact of challenging behaviour. What was more surprising perhaps was the fact that teachers at the start of the project many teachers did not engage in conversations with others about behaviour, despite the fact that these conversations were often deemed to be helpful. It appears that the view that good teachers do not have issues with classroom management prevented some teachers from seeking support from others. They reported feeling afraid and ashamed of seeming inadequate. At the end of the project more teachers were engaging in these kinds of conversations, although still only about 50% on average according to the questionnaire. In focus groups and interviews, teachers reported more collegiality around these issues. One major success of the Working Together Project was the creation of space where teachers could talk to each other about these issues. This fear of inadequacy displayed by teachers helps also to understand one of the challenges and limitations of the Working Together Project. Burke and colleagues note that routine interventions like the Working Together Project are frequently not evaluated for teacher fidelity to the programme and are instead evaluated by teacher self-report (Burke et al., 2011). The Working Together Project is subject to this criticism as most of the teachers in the study would not agree to observation of their teaching. They reluctantly agreed to observation of the class as long as the focus was on the children's behaviour. Given the strength of teachers' concerns about appearing inadequate, this reluctance is fully understandable.

The process of engaging in this project shed some light on the role of research in intervention. Qualitative research methods emerged as a better way of investigating the process of the project and, in particular, accessing the views of children. While the project tried to access the views fo a large number of children with a questionnaire, the validity of the data gathered is questionable. One abiding challenge for the project team was the feedback of results to children and to parents. While parents were given written reports, the team relied on the teachers to convey the survey results to children. This is clearly a shortcoming of the project.

The WTP was the first study of its kind in Ireland. It was unique in that it was carried out over a 4-year timespan and was embedded in a continuous dialogue between research and practice. Methodologically, the study is significant in that it included the voices of children aged 6 to 12 years. The study confirmed the importance of positive interpersonal relationships in successful classroom management (Jennings & Greenberg, 2009). The results show that while teachers often articulate their needs in relation to behaviour management around improved techniques and skills, that skill development is not sufficient in itself. Rather it must be accompanied by opportunities to investigate and change the nature of inter and intrapersonal relationships along with an emphasis on the exploration of

teachers' conception of self and other (McCready & Soloway, 2011). An important element of developing positive relationships is attention to the emotional dimension of those relationships and an honest appraisal of their impact. Consequently, this study is part of the movement to examine the process of change in schools. It highlights the role of emotions in developing the collaborative interpersonal relationships between all stakeholders that are required in order to develop acceptable and empowering school-based change (Brackett et al., 2011; Murphy, 1999).

Finally, the study has important implications for teacher education. Reflective practice which emphasises the technical-rational dimension of teaching, without examining the emotional, moral and political content is shortsighted (Korthagen & Kessels, 2001; Sutton, Mudrey-Camino, & Knight, 2009). Jennings et al. (2001, p. 46) note that

> Teachers' own development is a key issue if we are to improve the conditions of schooling, support teacher caring and commitment, and improve the academic and social-emotional growth of students.

The challenge for teacher education is to integrate teachers' need for strategies to deal with behaviour with the essential skills of emotional regulation, self-awareness and relationship-building, a challenge which becomes even greater when some studies show that these skills are developed in context and not taught by 'relationship experts' (McCready & Soloway, 2011, p. 119). The psychological educational literature demonstrates the importance of emotions and relationships in behaviour at school. The experience of the Working Together Project shows that these factors are equally important in any intervention.

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# 9. DO TEACHER-STUDENT RELATIONSHIPS DETERIORATE OVER TIME?

*An Investigation of Within-Year Changes and Links with Autonomous Motivation in Indonesia*

## INTRODUCTION

This research on Teacher-Student Relationships (TSR) in education has shown that TSR is an important determinant of classroom environments and suggests that a good TSR is beneficial for student learning and outcomes (Davis, 2003; den Brok, Brekelmans, & Wubbels, 2004; Henderson, Fisher, & Fraser, 2000; Opdenakker, Maulana, & den Brok, 2012). In line with the idea of self-determination theory that self-interest in learning is necessary for productive learning outcomes (Deci & Ryan, 2002), there is evidence that enhanced academic motivational outcomes are positively related to high quality of TSR (den Brok et al., 2004; Opdenakker & Maulana, 2010; Opdenakker et al., 2012; Wubbels & Brekelmans, 2005). TSR of good quality seems to be essential for students' development of positive experiences of their schooling period associated with healthy development, well-being and productive learning outcomes. When support for TSR is inadequate, students do not learn as much as we expect them to learn (Freiberg, 2010).

However, research originated from the western context also suggests that the quality of TSR tends to deteriorate over time (Mainhard, Brekelmans, den Brok & Wubbels, 2011; Maulana, Opdenakker, den Brok, & Bosker, 2012; Maulana et al., 2013; Opdenakker & Maulana, 2010; Opdenakker et al., 2012; Ryan & Patrick, 2001; Skinner & Belmont, 1993). Similarly, studies (in Western and Non-Western contexts) also indicate that the level of student academic motivation tends to decline over time (Corpus, Mc-Clinctic, & Hayenga, 2009; Opdenakker et al., 2012; Maulana, Opdenakker, & Bosker, 2012). These findings suggest the possibility of problematic current classroom environments and its negative consequences for student interest in learning (at least in the western context). However, it remains open for debate if the declining trend in the development of TSR and academic motivation over time is normative and can be considered as a common phenomenon irrespective of the cultural context. Until recently, there was no evidence whether or not the developmental trend in East-Asian countries like Indonesia would resemble the trend in the western context. How TSR develop over time is an important issue in education especially because the generality of the developmental trend over time may provide an answer about how best to improve

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the quality of TSR and academic motivation over time. If the general trend would be evident, then interventions to prevent the declining trend could be one (best) way to take. Otherwise, learning from other countries with better TSR profiles and sharing knowledge among different cultural contexts could be an alternative for future references.

The inconclusiveness regarding a universal trend of the development of TSR and academic motivation is partly due to the fact that there is only limited research originated from Non-Western contexts, respectively the East-Asian context. Another reason is that changes in TSR over time are hardly studied in a longitudinal fashion (exeptions are studies of Mainhard et al., 2011; Maulana et al., 2012; Opdenakker & Maulana, 2010; Opdenakker et al., 2012). In addition, links between TSR and academic motivation are hardly studied in a longitudinal way as well. Exeptions are the studies of Maulana et al. (2012), Opdenakker et al. (2012), and Opdenakker and Maulana (2010). Therefore, differences in the effects found in different studies are probably (mainly) attributed to specific moments during the school year because studies do not investigate, e.g. learning environments, on the same point in time. Given that TSR and academic motivation tend to change over time and that changes in both may differ as a function of time, the current knowledge would benefit from a refinement in the measurement of changes and links over time, by applying a more representative to the school year longitudinal design.

The present study was designed to supplement the knowledge base on the change and the longitudinal relation between TSR and academic motivation over time from an Indonesian perspective. Particularly, attention was paid to the development of teacher involvement, structure, and autonomy support as recognized by self-determination theory (Deci & Ryan, 2002) and how differences and changes in the quality of TSR over time affect differences and the changes in the quality of autonomous motivation across the school year.

## THEORETICAL FRAMEWORK

### *Teacher-student Relationships from the Self-determination Theory Perspective*

Within the conceptualization of TSR, self-determination theory (SDT) recognizes three elements of teacher behaviors, namely *involvement*, *structure*, and *autonomy* support. The conceptualization of these elements originates from the concept of three basic psychological needs, called *competence* (structure)*, relatedness* (involvement)*, and autonomy*. SDT posits that human beings are active organisms. As active organisms, individuals have a tendency to develop and grow and act therefore to fulfill the three basic needs (Deci & Ryan, 2007). Individuals also have a tendency to integrate their experiences into a coherent sense of self. For the natural human tendency to be able to function effectively, supportive and healthy social environments are essential. Thus, the dialectic between active individuals and their social context is the basis for SDT make predictions about human behavior.

SDT posits that the social context is a key indicator of individuals' development. In the educational context, classroom social climates become central for students' fulfillment of the three basic needs. Research recognizes that teachers could provide students' satisfaction of the three needs through their positive involvement, structure and autonomy support. Teacher involvement refers to the demonstration of sincere concern and the provision of warmth and unconditional regard (Connell & Wellborn, 1991). Teacher structure support involves the provision of optimal challenging tasks, encouragement after failure, praise, and adequate help as well as the communication of clear guidelines and expectations with respect to the task that needs to be accomplished (Reeve, 2002). Teacher autonomy support involves the offering of choice, the minimization of controlling language, and the provision of a meaningful rationale (Deci, Eghrari, Patrick, & Leone, 1994; Reeve & Jang, 2006). Teachers' provision of clear expectations, consistent contingency for behavior, and ample help for students is in line with the term teacher structure, which corresponds to supporting students' need for competence (Skinner, 1991). Relatedness refers to a situation in which students feel related to their teachers and feel that their teachers enjoy being together with them, which corresponds to teacher provision of involvement over student learning (Ainsworth, 1989). In addition, autonomy support involves teacher facilitation to connect school activities and students' own interests (Deci & Ryan, 1985). If these needs are satisfied, students allow optimal function and development. To actualise the inherent potential of these needs they need nurturing from the social environment. If this happens there are positive consequence (e.g., well-being and healthy development), but if not, there are negative consequences. Therefore, SDT emphasises humans' natural growth toward positive motivation, however this is thwarted if their basic needs are not fulfilled.

It is important to get knowledge on potential changes of TSR over time and on links between changes in TSR and changes in student autonomous motivation. In the rather limited literature on changes in teacher behavior and classroom environments, there is a general trend in the western context that TSR tends to change over time (Brekelmans, 1989; Evertson & Veldman, 1981; Flanders, Morrison, & Brode, 1968; Mainhard et al., 2011; Maulana, 2012; Opdenakker & Maulana, 2010; Opdenakker et al., 2011; Ryan & Patrick, 2001; Skinner & Belmont, 1993). In general, there is also evidence that the quality of the classroom environment seems to decline to some degree during the school year (Brekelmans, 1989; Mainhard et al., 2011; Opdenakker et al., 2012). However, another study about changes in teacher dominance and cooperativeness in the Indonesian context indicate a contradictory finding: teacher dominance and cooperativeness tend to increase across the school year (Maulana, 2012). Because longitudinal studies on TSR in different countries and cultures are still scarce, it remains inconclusive if the change in TSR truly depends upon country backgrounds.

*Autonomous Motivation*

As a theory of motivation, self-determination theory assumes a multidimensional view of the motivational concept by distinguishing the quantity, amount, or intensity of motivation from the quality or type of motivation (Vaansteenkiste, Sierens, Soenens, Luyckx, & Lens, 2009). Compared to other theories (i.e., expectancy-value theory of Eccles & Wigfield, 2002) which assume that motivation is a unitary construct and suggest that the higher the motivation the better the learning outcomes should be, self-determination theory recognizes that the interplay between motivation and learning outcomes is not straightforward, but it depends upon type of motivation. If the source of motivation is not internally-driven, less favorable learning outcomes are expected (Deci & Ryan, 2002). In addition, self-determination theory links motivation to the learning environment as an important context for motivation, while many other theories focus solely on motivational aspects within the person.

Within self-determination theory, autonomous motivation is considered the most important motivational component leading to productive learning outcomes. Autonomous motivation is theoretically conceptualized as having two subcomponents called identified regulation and intrinsic regulation (Ryan & Deci, 2000). Identified regulation reflects consciousness of valuing the regulation and students accept the action (i.e., studying) as personally important . Intrinsic regulation is considered as the most internally-driven type of motivation in which regulation is fully assimilated to the self. Empirically, these two subcomponents of motivation have been proven to be composites of autonomous motivation (Opdenakker et al., 2012; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004). There is a close conceptual connection between academic motivation and academic engagement. Particularly, a low level of academic engagement has been commonly conceptualized and defined as a deficit in academic motivation (Opdenakker & Minnaert, 2011). Thus, motivation is necessary and is central for understanding academic engagement.

There is evidence from the western context that autonomous motivation tends to decrease over time (Bouffard, Marcoux, Vezeou, & Bordeleau., 2003; Corpus et al., 2009; Harter, 1981; Otis, Grouzet, & Pelletier, 2005; Opdenakker et al., 2012). Similarly, research reveals that prevalent declines in the level of mastery goals, which corresponds to autonomous motivation, are visible as young students become older (e.g., Gottfried, Fleming, & Gottfried, 2001; Lepper, Corpus, & Iyengar, 2005; Spinath & Spinath, 2005). Research from the Indonesian context reveals a similar trend indicating that autonomous motivation tends to deteriorate across the school year (Maulana, Opdenakker, & Bosker, 2012).

*Teacher-student Relationships and Autonomous Motivation*

Some studies also show relations between teacher interpersonal behavior and student motivation. Flanders et al. (1968) found a greater decrease in students' attitudes when students perceived their teachers as less praising and encouraging

compared to other teachers. Ryan and Patrick (2001) found that students who perceived their teacher as more supportive and promoting respect in their classes reported to engage less in disruptive behavior compared to the year before. Skinner and Belmont (1993) indicate that students' behavioral engagement is primarily a function of student perceptions of teacher structure and that students' emotional engagement is influenced by teacher involvement. Consistent with Corpus et al. (2009) and Skinner and Belmont (1993), Opdenakker and Maulana (2010) demonstrated that differences and changes in teacher involvement, structure, and autonomy support are linked with differences and changes in student academic engagement. Maulana et al. (2011) found that teacher dominance and cooperativeness are significant predictors of autonomous motivation of Indonesian students as well. In addition, some studies found that supportive TSR can attenuate the decline in student motivation over the year (Lapointe, Legault, & Batiste, 2005; Wentzel, 2010) because TSR of good quality serve as a protective factor for the decline in students' autonomous motivation (Opdenakker et al., 2012). Overall, research suggests that the better the classroom social climate, the more likely progressive changes in students' interest and learning value are promoted, irrespective of the cultural background (Maulana, 2012).

### *The Current Study*

The present study is one of the first to investigate changes in TSR (based on student perceptions) as measured by teacher involvement, structure, and autonomy support. All these support dimensions are to support the satisfaction of the need for relatedness, competence, autonomy in the context of the first grade of secondary education in Indonesia. The second aim is to explore the role of teaching subject (math versus English), class type (homogeneous high-ability classes versus heterogeneous mixed-ability classes), and student gender in explaining differences and changes in the components of TSR. The last aim is to investigate the relation between changes of TSR and the evolution in autonomous motivation over time.

In this chapter, we focus our exploration on links between changes in TSR and autonomous motivation in the Indonesian context because we want to represent a country within the East-Asian context, geographically and culturally. Additionally, the role of several personal and contextual characteristics is examined. We are aware of the fact that findings from merely one country would provide less clear clue with regard to the generalization purpose across the East-Asian context. Nevertheless, our aim is not to provide a clear-cut understanding about the nature of TSR and academic motivation between the west and the east, but to initiate the discussion regarding potential differences about the psychological constructs mentioned between different east-west cultural backgrounds.

In Indonesia, there are three categories of secondary school that are generally distinguishable based upon their standard qualification: (1) School of International Standards (highest qualification), (2) Pilot School of International Standards (second highest qualification), and (3) School of National Standards (lowest qualification). The distinction between homogenous (high or low ability group)[i]

and heterogeneous (mixed ability group) classes depends mainly on the school qualification: Some schools offer both homogeneous and heterogeneous classes, while others provide either homogeneous or heterogeneous classes only (Ministry of National Education, 2007). Since the targeted learning objectives failed within the centralized curriculum, there has been a conceptual and practical transformation in the school system into the decentralized curriculum (Mullis et al., 2008). With this transformation, the country hopes for a significant improvement in many educational levels, including the classroom level leading to better student motivation in learning and academic achievement.

Undoubtedly, several contextual and personal characteristics may affect TSR and autonomous motivation. Teaching subject is one of the contextual characteristic that play a role as past studies show that science and mathematics teachers are often perceived less favorable in terms of TSR compared to other school-subject teachers (Levy, den Brok, Wubbels, & Brekelmans, 2003; Maulana et al., 2012). Moreover, class type is another contextual characteristic determining TSR. Often, classroom environments are found to be better in term of quality in high- ability classes than in other types of classes (Opdenakker & Van Damme, 2001; Mills, 1997; Evertson, 1982; Maulana et al., 2012; Boufard & Couture 2003; Lapointe et al., 2005). However, there is also evidence that teacher cooperativeness and students' autonomous motivation declines faster in high-ability compared to mixed-ability classes (Opdenakker et al., 2012). With regard to student gender, studies show that girls tend to have more favorable views compared to boys (Fraser, 2007) and seem to perceive their teachers as more dominant (teacher-centered) and cooperative than boys (Levy et al., 2003; Wubbels & Levy, 1993). Boys stereotypically experience a greater level of conflict, while girls typically experience more interpersonal closeness (Hamre & Pianta, 2001; Saft & Pianta, 2001).

Furthermore, the fact that students experience a new start with important changes in educational environments when they leave primary education and enter secondary education is the main reason to investigate the link between changes in TSR and autonomous motivation in the first grade of secondary education. This schooling period is the first experience for students to deal with multiple subject teachers. Next, it is a period when students experience important changes in biological, psychological and social challenges (Lord, Eccles, & McCarthy, 1994). Although peer orientations become more significant when students become older, it does not necessarily mean that support of teachers do not matter anymore (La Guardia & Patrick, 2008). Therefore, this schooling period offers a fruitful context for studying TSR and autonomous motivation dynamics.

This study contributes to the knowledge base of the (in)stability and importance of classroom environments in several ways. First, we followed students over the school year to document their perceptions about teaching behavior of their teachers associated with teacher involvement, structure, and autonomy support. Second, we gathered students' self-report of autonomous motivation across the school year, which allow us to link TSR and students' autonomous motivation together dynamically. Third, we collected data from Indonesian secondary schools to

complement the knowledge base predominantly originated from a western context. Findings of this study offer empirical evidence to the knowledge base as regards instability and universal characteristics of TSR, effects of TSR on student autonomous motivation, as well as the extent to which findings as regards TSR and autonomous motivation are context specific (Western versus East-Asian). Finally, the application of multilevel growth curve models allowed us to handle the hierarchical structure of our data, paying attention to variability and changes of TSR components as well as relations to academic motivation longitudinally.

## METHOD

### *Participants and Procedures*

A total of 504 students from 16 mathematics and English first grade classes of secondary schools participated in the longitudinal survey. The survey was targeted to examine student perceptions of teacher involvement, structure, and autonomy support as well as autonomous motivation in their classes. Of the students, 222 were boys and 282 were girls. Of the classes, 50% was homogeneous (high-ability) classes and 50% was heterogeneous (mixed-ability) classes. In theory, homogeneous classes refer to either high-ability groups (corresponds to international or acceleration classes) or low- ability groups (corresponds to regular low- ability classes). In this study, it refers only to high- ability groups and international classes.

Self-report autonomous motivation of students was measured in five waves (from the first week of the school year to month 10), while student report on teacher involvement, structure, and autonomy support was measured in four waves (from month 1.5 to month 10) across the school year. Prior to conducting the survey, agreement between schools and researchers was established. Students participated on a voluntary basis. Across five waves of measurements, the percentage of missing cases was between 0.9% (fifth wave) and 10% (first wave).

### *Measures*

*Teacher-student relationships.* To examine TSR, the Indonesian translation of the "Teacher as a Social Context (TASC)" questionnaire was used (Belmont, Skinner, Wellborn, & Connell, 1992; Sierens et al., 2009). The TASC is theoretically consistent with the conceptualization of TSR rooted in self-determination theory. The measure consists of three scales measuring the dimension of TSR: *involvement*, *structure*, and *autonomy support*.

The measure consists of 52 items provided on a 5-point Likert scale ranging from 1 (completely not true) to 5 (completely true, see Appendix for examples of items). For the current study, translation and back-translation of the measure was done by the first author, an English-as-Foreign-Language teacher educator, and an educational psychologist specializing in young adolescent development. Exploratory factor analysis (PCA with varimax rotation) revealed that three factors

could be extracted, which is in line with the original American version of the measure. The three factors could explain about 51% of the variance: the first factor accounted for 29% of the variance, the second factor for 16%, and the third factor for 6%. The internal consistencies of the three TASC scales appear to be good. Analysis of reliabilities of the scales based on one measurement point are: involvement ($\alpha = 0.87$), structure ($\alpha = 0.91$), autonomy support ($\alpha = 0.71$).
*Autonomous motivation*. A measure of (subject-related) autonomous motivation was based on the questionnaire of motivational dimensions (Vansteenkiste et al., 2004), which was originally developed based on the academic self-regulation scale (Ryan & Connell, 1989). The autonomous motivation scale examines students' internal reasons for studying (math and English), which consists of two subscales called Identified regulation (4 items) and Intrinsic regulation (4 items). Examples of items are (identified regulation: "I study math/English because it is personally important to me") and (intrinsic regulation: "I study math/English because I find it interesting"). The reliability of autonomous motivation based on one measurement point appears to be good ($\alpha = 0.90$).

*Time, teaching subject, class type, and student gender*. Time was coded in accordance with the survey intervals (in months) as follows: 0 (baseline), 1.5 months, 4 months, 7 months and 10 months. Class type was divided into two categories, with "0" referring to homogeneous classes (also referred as high- ability classes) and "1" referring to heterogeneous classes (also referred as mixed- ability classes). Teaching subject and student gender were included in the analyses as dummy variables with "0" for mathematics and "1" for EFL, and "0" for boys and "1" for girls respectively.

### *Analytic Strategy*

Due to the hierarchical structure of the data (i.e., time nested within students, students nested within classes), multilevel growth curve modeling (with MLwiN, Goldstein, 2003; Rasbash, Charlton, Browne, Healy, & Cameron, 2005) was applied to investigate changes in TSR and links with autonomous motivation. Models with three levels were included: measurement occasion at level 1, student at level 2, and class at level 3. Attention was paid to the general development (teacher involvement, structure, autonomy support) and the deviation to this development at class and student level. In addition, changes of autonomous motivation of classes were explored and were linked (longitudinally) with that of TSR across the school year. Modeling strategy was done in a number of steps, ranging from estimating empty models (model with no predictors) to full models (model with predictors and control variables). The modeling was applied separately for each of the measures. Significant results of 95% confidence intervals and higher were focused on, but in some instances, a $p$ value of $< 0.10$ was also included to increase the statistical power given a relatively small number of classes included in the study.

## RESULTS

### *Changes in Teacher-student Relationships over Time*

Results of multilevel growth curve modeling reveal small differences between classes (1%-2%) and relatively large differences between students with regard to TSR components (22% - 24%, see Table 1). All components of TSR appear to be (roughly) equally unstable over time. This suggests that considerable changes in teacher involvement, structure, and autonomy support across the school year are visible.

*Table 1. Distribution of the total variance over the class, student and occasion level (percentages)*

| Levels | Involvement (N = 1903) | Structure (N = 1904) | Autonomy (N = 1903) | Autonomous motivation (N = 2378) |
|---|---|---|---|---|
| Class | 2.2% | 2% | 1% | 5% |
| Student | 23.7% | 21.7% | 22.4% | 23% |
| Occasion | 74.1% | 76.3% | 76.6% | 72% |

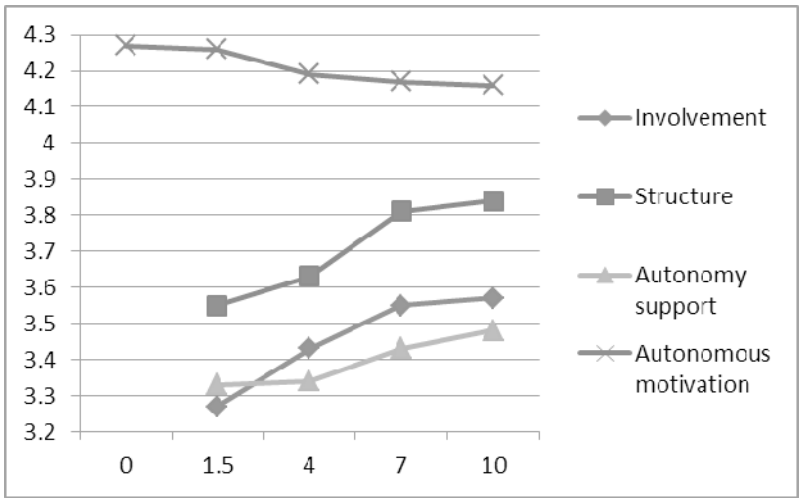


*Figure 1. Development of teacher involvement, structure, autonomy support and student autonomous motivation over time (raw scores)*

Inspection of the mean trajectories of the raw scores of the TSR components shows a general increase in the quality of TSR over time (see Figure 1). Results from multilevel growth curve modeling confirm this finding and suggest that the

change in teacher involvement is best-represented by a linear and quadratic term, while the change in teacher structure and autonomy support are best-represented by linear terms (see Table 2, Model 1). Additional analyses reveal that although the level of all components of TSR increases over time, the magnitude of the increase seems to differ to some extent between classes and between students within classes. With regard to differences between classes associated with the linear effect of time, it was estimated that the 95% interval contains negative as well as positive time effects. Recalculating the interval limits for a period of 10 months (corresponding to a regular school year in Indonesia), the interval of the linear effect of time ranges for teacher involvement between -0.60 and 2.21 and, for structure between -0.30 and 1.08, and for autonomy support between -0.30 and 0.70.

Furthermore, results reveal that differences (and changes) in the components of TSR could be explained by class type (see Table 2, Model 2). For autonomy support, only the main effect of class type is significant ($p < 0.10$), indicating that the general level of teachers' autonomy support in heterogeneous classes is lower than in homogeneous classes. For involvement and structure, however, not only the main effects of class type are significant ($ps < 0.01$), but the interaction effects between time (linear) and class type are significant as well ($ps < 0.05$, see Figure 2). Taking together all the effects of time, class type and the interaction effect between time and class type, the results indicate that, in general, structure and teacher involvement is lower in heterogeneous classes compared to homogeneous classes. This is, in particular the case at the beginning of the school year. However, teacher involvement increases at a much faster rate in heterogeneous classes compared to homogeneous classes resulting in the end at a higher level of teacher involvement in heterogeneous classes compared to homogeneous classes. This trend is, even more pronounced, visible as regards structure. Furthermore, a small effect of student gender on autonomy support was found (significant at 10% level) suggesting that girls experience a little bit more autonomy support than boys. No differences in TSR components associated with teaching subject are evident. To summarize, we found evidence that the general quality of TSR in heterogeneous classes seems to be less favorable at the beginning of the school year compared to that in homogeneous classes. However, the quality as regards teacher involvement and structure increases at the much faster rate in homogeneous classes compared to the quality of these TSR components in homogeneous classes resulting in an equal to even better quality of the learning environment as regards these TSR components in heterogeneous classes compared to homogeneous classes.

*Table 2. Results of multilevel models of the development of Involvement, Structure, and Autonomy support over time*

| Variable | Model 1 | | | | | | Model 2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Involvement (N = 1903) | | Structure (N = 1904) | | Autonomy (N = 1903) | | Involvement (N = 1903) | | Structure (N = 1904) | | Autonomy (N = 1903) | |
| | Coefficient | SE | Coefficient | SE | Coefficient | SE | Coefficient | SE | Coefficient | SE | Coefficient | SE |
| *Fixed effect* | | | | | | | | | | | | |
| Intercept | 3.169434* | .082773 | 3.5090*** | .0708 | 3.2908*** | .0522 | 3.3386*** | .1086 | 3.7229*** | .0869 | 3.3534*** | .0849 |
| Time | .0810** | .0266 | .0357*** | .0100 | .0185* | .0077 | .0657* | .0294 | .0043 | .0131 | .0103 | .0130 |
| $Time^2$ | -.0041$^{o}$ | .0022 | | | | | -.0041$^{o}$ | .0022 | | | | |
| $Time^3$ | | | | | | | | | | | | |
| Subject | | | | | | | -.0231 | .0889 | -.0734 | .0909 | -.0173 | .0957 |
| Time x Subject | | | | | | | -.0055 | .0147 | .0027 | .0137 | .0010 | .0150 |
| Class type | | | | | | | -.2797** | .0890 | -.4210*** | .0910 | -.1637$^{o}$ | .0957 |
| Time x Class type | | | | | | | .0360* | .0147 | .0585*** | .0138 | .0160 | .0150 |
| Gender | | | | | | | -.0294 | .0489 | .0549 | .0581 | .0478$^{o}$ | .0289 |
| Time x Gender | | | | | | | .0002 | .0074 | .0015 | .0088 | | |
| *Random effect* | | | | | | | | | | | | |
| Level 3 variance (class) | | | | | | | | | | | | |
| Intercept | .0813 | .0387 | .0671 | .0283 | .0367 | .0154 | .0813 | .0389 | .0200 | .0117 | .0298 | .0129 |
| Intercept x Time | -.0197 | .0118 | -.0087 | .0038 | -.0055 | .0022 | -.0218 | .0123 | -.0024 | .0016 | -.0049 | .0020 |
| Time | .0050 | .0040 | .0013 | .0005 | .0008 | .0003 | .0054 | .0041 | .0004 | .0002 | .0007 | .0003 |
| Intercept x $Time^2$ | .0012 | .0009 | | | | | .0016 | .0009 | | | | |

*Table 2. (Continued)*

| Variable | Model 1 | | | | | | Model 2 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Involvement (N = 1903) | | Structure (N = 1904) | | Autonomy (N = 1903) | | Involvement (N = 1903) | | Structure (N = 1904) | | Autonomy (N = 1903) | |
| | Coefficient | SE | Coefficient | SE | Coefficient | SE | Coefficient | SE | Coefficient | SE | Coefficient | SE |
| Time x Time$^2$ | -.0003 | .0003 | | | | | -.0004 | .0003 | | | | |
| Time$^2$ | .0000 | .0000 | | | | | .0000 | .0000 | | | | |
| Level 2 variance (student) | | | | | | | | | | | | |
| Intercept | .1646 | .0694 | .0000 | .0000 | .0159 | .0158 | .1675 | .0696 | .0000 | .0000 | .0155 | .0158 |
| Intercept x Time | -.0996 | .0297 | .0000 | .0000 | .0039 | .0020 | -.1010 | .0298 | .0000 | .0000 | .0038 | .0020 |
| Time | .0771 | .0147 | .0000 | .0000 | .0000 | .0003 | .0776 | .0147 | .0000 | .0000 | .0000 | .0003 |
| Intercept x Time$^2$ | .0089 | .0024 | | | | | .0090 | .0024 | | | | |
| Time x Time$^2$ | -.0067 | .0012 | | | | | -.0067 | .0012 | | | | |
| Time$^2$ | .0005 | .0001 | | | | | .0005 | .0001 | | | | |
| Level 1 variance (occasion) | | | | | | | | | | | | |
| Residual | .1991 | .0131 | .3602 | .0117 | .1733 | .0080 | .1990 | .0131 | .3592 | .0117 | .1731 | .0080 |
| Deviance | 3291.34 | | 3508.78 | | 2498.52 | | 3282.06 | | 3488.51 | | 2486.28 | |

*Note*. $^{o}$ $p<.10$, *$p<.05$, **$p<.01$, ***$p<.001$

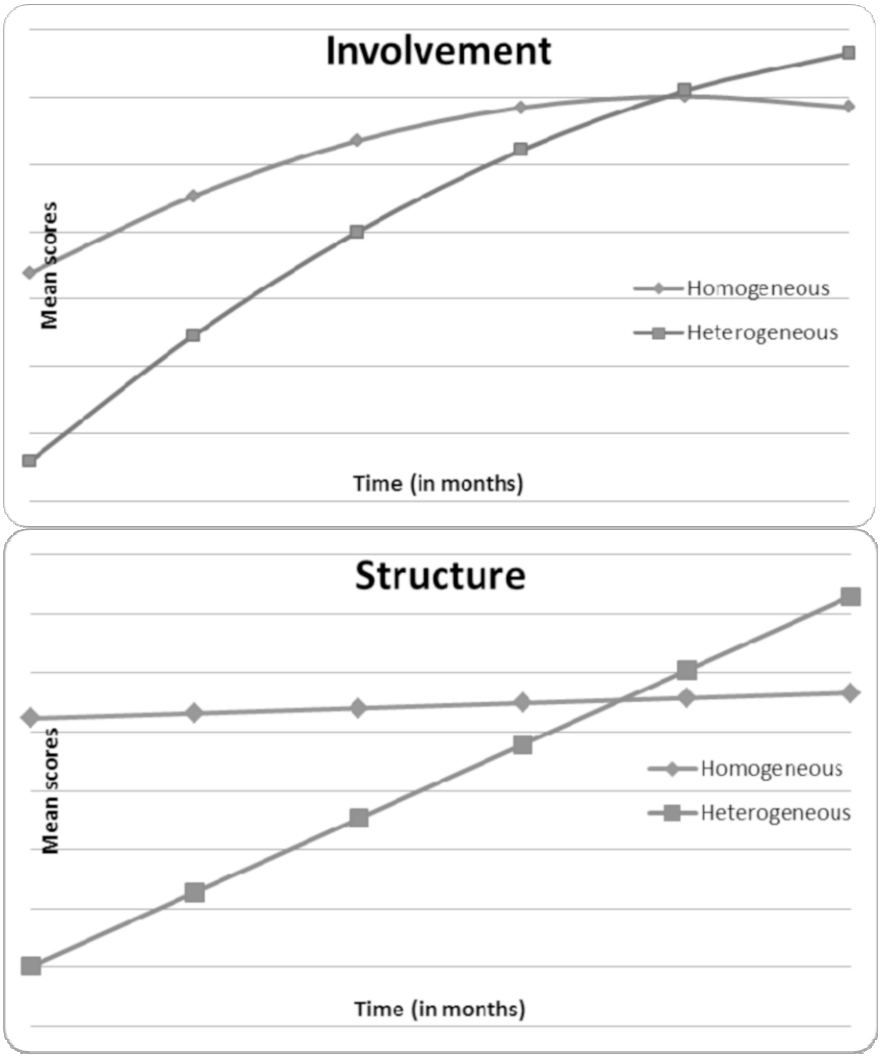


*Figure 2. Developmental trajectories of teacher involvement and structure support based on class type (based on best-fitted multilevel growth curve model)*

*Longitudinal Relations between Teacher-student Relationships and Autonomous Motivation*

Results reveal that differences between classes (5%), between students within classes (23%), as well as across measurements occasions (72%) regarding autonomous motivation are evident (see Table 1). There is an indication that student autonomous motivation changes over time.

Changes in student autonomous motivation are best-illustrated by a (small negative) linear term, suggesting that the level of autonomous motivation decreases systematically a little bit across the school year (see Table 3, Model 1, Figure 1). In addition, differences between classes and between students within classes regarding the linear trend are visible. Inspection of the linear time effect on differences between classes shows that, assuming Normality, the 95% confidence interval consists of negative and positive time effects. The estimate of the interval limit across the school year ranges between -0.42 and 0.14. This suggests rather moderate between classes differences over time.

Furthermore, differences and changes in autonomous motivation could be explained by class type (Table 3, Model 1). Results show that both main effect of class type ($p < 0.10$) and interaction effect between time and class type ($p < 0.01$) are significant, indicating that the level of autonomous motivation is slightly higher in heterogeneous classes compared to homogeneous classes, and that the decrease of autonomous motivation is steeper in homogeneous classes compared to heterogeneous classes. In fact, the autonomous motivation of students in heterogeneous classes remains rather stable across the school year, while a (small) declining trend is evident in homogeneous classes.

Finally, results reveal that differences in autonomous motivation are linked with differences in the TSR components. Teacher involvement, structure, and autonomy support could significantly predict student autonomous motivation ($ps < 0.001$, see Table 3, Model 2-4). Teacher involvement explains about 6% of the variance, structure support about 7%, and autonomy support about 6%. Together, differences in the TSR components explain about 7% of the variance in autonomous motivation. All components of TSR have significant unique effects on student autonomous motivation, although the joint effect of the three components overwhelms the unique effects of each of them. Interestingly, results also show that positive effects of teacher involvement and structure support on autonomous motivation seem to be stronger for students in homogeneous classes compared to students in heterogeneous classes, although its effect for students in heterogeneous classes remain important as well (see Table 3, Model 2-3). The positive effects of teacher autonomy support, on the other hand, appear to be equally important for students in homogeneous and heterogeneous classes.

*Table 3. Results of multilevel models of the development of autonomous motivation over time and effects of TSIR variables*

| Variable | Model 1 Motivation with control variables | | Model 2 Motivation with Involvement and control variables | | Model 3 Motivation with Structure and control variables | | Model 4 Motivation with Autonomy and control variables | | Model 5 Motivation with Involvement, Structure, Autonomy, control variables (Full model) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Coefficient | SE | Coefficient | SE | Coefficient | SE | Coefficient | SE | Coefficient | SE |
| Fixed effect | | | | | | | | | | |
| Intercept | 4.2558*** | .0616 | 3.4496*** | .1665 | 3.2481*** | .1710 | 3.3060*** | .1807 | 2.8898*** | .2061 |
| Time | -.0264** | .0087 | -.0195° | .0103 | -.0181° | .0103 | -.0202 | .0129 | -.0205 | .0128 |
| $Time^2$ | | | | | | | | | | |
| Subject taught | -.0241 | .0602 | .0291 | .0699 | .0427 | .0726 | .0331 | .0708 | .0379 | .0706 |
| Time x Subject taught | .0004 | .0084 | -.0066 | .0095 | -.0077 | .0095 | -.0076 | .0132 | -.0072 | .0130 |
| Class type | .1123° | .0604 | .7160*** | .1885 | .6773*** | .1977 | .5239* | .2202 | .8124*** | .2475 |
| Time x Class type | .0230** | .0085 | .0047 | .0097 | -.0024 | .0098 | .0048 | .0132 | .0005 | .0132 |
| Student gender | -.0153 | .0518 | -.0645 | .0712 | -.0909 | .0718 | -.0973 | .0720 | -.0859 | .0718 |
| Time x Student gender | -.0001 | .0074 | .0078 | .0097 | .0089 | .0097 | .0103 | .0096 | .0088 | .0096 |
| Involvement | | | .2118*** | .0433 | | | | | .1009* | .0490 |
| Structure | | | | | .2496*** | .0413 | | | .1358* | .0553 |
| Autonomy | | | | | | | .2612*** | .0486 | .1242* | .0609 |
| Class type x Involvement | | | -.1290* | .0529 | | | | | -.0938 | .0597 |
| Class type x Structure | | | | | -.0955° | .0517 | | | -.0427 | .0685 |
| Class type x Autonomy | | | | | | | -.0731 | .0630 | -.0066 | .0777 |
| Random effect | | | | | | | | | | |
| *Level 3 variance (class)* | | | | | | | | | | |
| Intercept | .0040 | .0051 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| Intercept x Time | .0009 | .0005 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 | .0000 |
| Time | .0000 | .0001 | .0000 | .0000 | .0000 | .0000 | .00003 | .00002 | .0003 | .0001 |

*Table 3. (Continued)*

| Variable | Model 1 Motivation with control variables | | Model 2 Motivation with Involvement and control variables | | Model 3 Motivation with Structure and control variables | | Model 4 Motivation with Autonomy and control variables | | Model 5 Motivation with Involvement, Structure, Autonomy, control variables (Full model) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Coefficient | SE | Coefficient | SE | Coefficient | SE | Coefficient | SE | Coefficient | SE |
| *Level 2 variance (student)* | | | | | | | | | | |
| Intercept | .1595 | .0219 | .2585 | .0404 | .2720 | .0411 | .2768 | .0413 | .2708 | .0410 |
| Intercept x Time | -.0090 | .0026 | -.0204 | .0051 | -.0224 | .0021 | -.0229 | .0051 | -.0230 | .0051 |
| Time | .0020 | .0004 | .0035 | .0008 | .0035 | .0008 | .0034 | .0008 | .0034 | .0008 |
| *Level 1 variance (Occasion)* Residual | | | .2839 | .0134 | .2822 | .0134 | .2786 | .0132 | .2788 | .0133 |
| Deviance | 4633.81 | | 3642.15 | | 3616.52 | | 3591.11 | | | |

*Note.* $^{o}$ $p$<.10, *$p$<.05, **$p$<.01, ***$p$<.001

## CONCLUSIONS AND DISCUSSION

Teacher-student relationships are important determinants of the classroom environment. Self-determination theory recognizes that supportive and healthy relationships are considered as productive environment characteristics, while problematic relationships are detrimental to student well-being, growth, and learning outcomes. The present research is one of the first studies focusing on differences and changes in TSR and on relations between changes and differences in TSR and autonomous motivation, taking into account the role of teaching subject, class type, and student gender in the context of first-grade secondary schools in Indonesia.

Based on the inspection of the amount of variation between classes regardless of time effect, we found rather small differences between classes with regard to TSR components. Another study in the Netherlands indicated rather large between classes differences, suggesting that the teacher in some classes seem to have the power to counter the downwards evolution of the quality of TSR (Opdenakker & Maulana, 2010). Rather small between classes differences found in our study could mean that teachers in general displayed more or less the same level of interpersonal behavior in their classes. However, this could also mean that there is not enough variation in our 16-classes sample. Replicating the study with more classes involved in the sample would clarify this inconclusive line of reasoning.

More importantly, we found that all the components of TSR changed over time. Some components of TSR (structure and autonomy support) changed in a linear way, while the change of another component (teacher involvement) could be described best as a combination of a linear and a quadratic trend. Contradictory to findings in the western context investigating TSR from the interpersonal perspective (Brekelmans, 1989; Mainhard et al., 2011; Opdenakker et al., 2012) and from the SDT perspective (Opdenakker & Maulana, 2010), we found that all components of TSR showed an increasing trend. Teacher structure and autonomy support showed a systematic increase across the school year, while the increase in teacher involvement was slightly decelerated towards the end of the school year. Compared to teacher structure and autonomy support, the largest between-class differences associated with the linear effect of time were visible for teacher involvement. Our finding is in line with research of Maulana (2012) who found that the level of teacher dominance and cooperativeness (from the interpersonal perspective) in the Indonesian secondary schools increased across the school year. Our findings suggest that instability in TSR might be a universal phenomenon, irrespective of the cultural context. However, findings of this study also suggest that a deteriorating trend in the quality of TSR is not normative, and thus cannot be considered as inevitable. Perhaps, this has some connection with cultural values associated with TSR

Among other possible reasons, respect for authority and power distance index might play a role in explaining this opposite developmental trend (Ho, Holmes, & Cooper, 2004; Hofstede, 1991). In a collectivist country like Indonesia, teacher authority is a privilege and students respect the authority as a part of society.

Respecting the teacher as an authority figure also implies a clear high power distance between the teacher and students. In addition, the teacher is commonly seen as a role model, the knower and the source of knowledge which students highly respect and appreciate. It seems logical to argue that if students hold these values about their teachers, there will be a reflection of them in their perceptions. Another observation study in the same country showed that, compared to Dutch teachers, the level of Indonesian teacher interpersonal involvement is lower. Future research should clarify how cultural values play a role in shaping student perceptions about their teacher behavior.

Furthermore, although past studies documented significant effects of teaching subject on TSR (Levy et al., 2003; Maulana et al., 2012), these were not confirmed in our study as we did not find significant effects of teaching subject on teacher involvement, structure, and autonomy support. Also, whereas prior studies showed that student gender is an important determinant of TSR (Fraser, 2007; Levy et al., 2003; Opdenakker et al., 2012; Wubbels & Levy, 1993), this was only partially confirmed in our study as the effect of student gender was only evident on teacher autonomy support and only within the 10% confidence interval. Although this finding should be interpreted with care, there seems to be an indication that female students perceived their teachers to display somewhat higher level of autonomy support than male students. Assuming that student perceptions, to some extent, reflect the real behavior of teachers in the classroom, perhaps this difference in perception between female and male students has some connection with culturally-related gender role differences (Marcus, Gross, & Seefeldt, 1991; Timm, 1999). Often, female students in Indonesia are assumed to be more obedient and comply with classroom rules and tasks (i.e., doing homework consistently), while male students are often assumed to be more disruptive and not studying and working on tasks as much as expected. If this assumption plays a role, then it is not surprising that teachers give more autonomy support to female students, but they emphasize more controlling strategy to male students. Classroom observation research would be beneficial to confirm this hypothesis.

Compared to effects of teaching subject and student gender, the effects of class type on the three components of TSR appeared to be most pronounced. We found evidence that students in heterogeneous classes perceived the quality of their teachers' involvement, structure, and autonomy support in general and in particular at the beginning of the school year lower than their peers in homogeneous classes. To some degree, this finding implies that the quality of teaching (in terms of interpersonal behavior as perceived by students) of teachers teaching in high-ability classes is better at least at the start of the school year than that of teachers teaching in mixed- ability classes. This finding is not surprising given that the current school system of secondary school in Indonesia allows a differentiation with regard to school quality.

Since the implementation of a decentralized school curriculum in line with the implementation of district autonomy in Indonesia, every district has "competed" to improve education in all levels, especially secondary education. Until currently, the quality of schools has been examined, to a great extent, by their qualification

standards (Ministry of National Education, 2007). Consequently, every school within the district has been striving to achieve the highest qualification as possible. Among other ways of improving school standards, the district has taken an action called teacher-rolling: attracting the best teachers for best schools and transferring less qualified teachers to lower qualified schools. This action is probably effective to increase the number of schools with high qualification standards in districts, but what happens with schools and teachers with lower qualifications standards? What can one effectively do to help the country to improve the quality of schools with mixed-ability and low-ability classes? Perhaps, attracting the best teachers for lower qualified schools should also be an alternative. Otherwise, the current strategy would merely enable that good schools become better and bad schools remain, or get worse. Nevertheless, we also found that better changes over time (stronger increase) of teacher involvement and structure are evident in heterogeneous (mixed-ability classes) compared to homogeneous (high-ability classes). Knowing that the quality of TSR in homogeneous classes is, in general and in particular at the beginning of the school year, better than in heterogeneous classes, but that a stronger increase of teacher involvement and structure over time is visible in heterogeneous classes compared to homogeneous classes, this suggest that the connection between TSR, class type, and time is complex requiring more investigation in future research.

Moreover, we found that the level of academic motivation of students decreased in a (small) linear fashion across the school year, which is consistent with the general trend found in western countries (e.g., Corpus, Mc-Clinctic & Hayenga, 2009; Harter, 1981; Otis, Grouzet, & Pelletier, 2005; Opdenakker et al., 2012). While the trend in TSR between Indonesia and western countries is different, the trend of academic motivation is more or less similar to other countries. This might indicate that the relationship between TSR and student outcomes is weaker in Indonesia compared to western countries. Indeed, when comparing our results to that of the Dutch finding (Opdenakker & Maulana, 2010), we found that teacher involvement, structure, and autonomy support together explain merely 7% of the variance in autonomous motivation (cf. 23% in the Dutch context). Taken together our finding and other (western) research, there seems to be a common phenomenon that secondary school students experience motivational "problems", regardless the cultural context. If this phenomenon is inevitable and can be seen as a normative process in the period of adolescence, it would be promising that further research is directed toward the exploration of the magnitude of the decrease over time, taking into account the cultural context. Based on research conducted in Dutch and Indonesian contexts, Opdenakker et al. (2012) and Maulana (2012) discovered that the decrease in TSR in Indonesian classes is smaller than in Dutch classes. These studies suggest that changes in motivation over time are probably more "problematic" in the western than in the East-Asian (Indonesia) context. Interestingly, the level of autonomous motivation is higher for students in heterogeneous (mixed-ability) classes compared to homogeneous (high-ability) classes. In addition, students in homogeneous (high-ability) classes reported a steeper decrease of autonomous motivation than their peers in

heterogeneous (mixed-ability) classes. Our findings imply that what is happening in homogeneous classes over time appears to be less favorable in terms of the motivational dynamic compared to heterogeneous classes. Perhaps, this has some connection with the finding that a more favorable development of TSR is evident in heterogeneous classes compared to homogeneous classes.

Finally, based on the analysis of longitudinal relations between TSR and autonomous motivation, we found evidence that teacher involvement, structure, and autonomy do matter for student autonomous motivation. The fact that the level of the TSR components increased over time seems to play a role as protective factors for autonomous motivation to decline over time. Thus, our findings confirm the idea of self-determination theory (Deci & Ryan, 2002) with regard to the importance of the teacher in satisfying students' basic psychological needs of feeling related, competent, and autonomously supported for student academic motivation. When students continuously feel connected with their teachers, believe that they are competent, and experience a substantial support of autonomy from their teachers, these seem to promote their self-interest in learning. This suggests that the progressive maintenance of TSR over time is very likely to facilitate the process of internalization over learning, which in turn promotes students' self-determined learning motivation (Maulana et al., 2012, 2013; Opdenakker et al., 2012; Ryan & Deci, 2000; Skinner & Belmont, 1993).

In addition, we found some evidence that positive effects of TSR components on autonomous motivation are not similar in magnitude depending on class ability grouping. Students in homogeneous (high- ability) classes seemed to benefit more from teacher involvement and structure support than their peers in heterogeneous (mixed-ability) classes as far as autonomous motivation is concerned. This finding is in line with research of Maulana et al. (2012) who discovered a stronger effect of teacher dominance and cooperativeness on autonomous motivation for students in homogeneous classes compared to heterogeneous classes. Knowing that students in homogeneous (high-ability) classes have a more problematic academic motivation dynamic in terms of the level and the change over time and that the effects of teacher involvement and structure support for their autonomous motivation were stronger compared to the autonomous motivation of students of heterogeneous (mixed-ability) classes, this implies that efforts for improving the quality of TSR in this particular class type would be beneficial. We argue that an optimal level of TSR is needed until its maximum benefit for student autonomous motivation is reached. To what extent the ceiling effect of TSR could be determined, is certainly a challenge for future research. However, the effort for improvement should not be targeted to solely homogeneous (high-ability) classes. Heterogeneous (mixed-ability) classes need adequate attention as well. As one may expect that what works in particular classes may not work in other classes, a more proper implementation of adaptive teaching adjusted for the class type would be one way leading to better motivational (and academic achievement) outcomes (Van de Grift, 2007).

To conclude, we provide evidence from the Indonesian context that the general deteriorating trend in TSR found in the western context may not be a universal, normative, phenomenon. The level of TSR does change regardless of the cultural

context, but the direction of the change over time seems to differ depending on the cultural context. It is tempting for future research to investigate various cultural values that may play a role in explaining differences and changes in TSR and academic motivation. Our research as regards TSR in different cultural contexts (Western versus East-Asian/Indonesian) is still in the beginning phase. Although our findings may be generalizable to other East-Asian countries sharing a similar culture with Indonesia, we will need (much) more research to confirm as to whether clear differences in TSR between the western and the eastern (i.e., other Asian countries) context are significantly distinguishable. With this article, we encourage other researchers for further international discussion and contribution to shed light on this inconclusive research knowledge.

## NOTE

[i] Theoretically, homogeneous classes refers to either high ability groups (also corresponds to international or acceleration classes) or low ability groups (also corresponds to regular classes). However, in our sample it refers only to high ability groups and international classes of a second qualification school.

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## APPENDIX

### *Examples of Items of Student Report of Teacher as Social Context in Terms of Teacher Involvement, Structure, and Autonomy Support*

| Items | 1 Completely not true | 2 | 3 | 4 | 5 Completely true |
|---|---|---|---|---|---|
| 1. My teacher likes me. | | | | | |
| 2. My teacher really cares about me. | | | | | |
| 3. My teacher doesn't seem to enjoy having me in her class. | | | | | |
| 4. My teacher knows a lot about me. | | | | | |
| 5. My teacher knows me well. | | | | | |
| *Cut for copyright reason* | | | | | |
| 48. My teacher talks about how I can use the things we learn in school. | | | | | |
| 49. My teacher encourages me to find out how schoolwork could be useful to me. | | | | | |
| 50. My teacher doesn't explain why what I do in school is important to me. | | | | | |

| |
|---|
| 51. My teacher doesn't explain why we have to learn certain things in school. |
| 52. My teacher never talks about how I can use the things we learn in school. |

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# 10. SOCIAL FORCES IN SCHOOL TEAMS

*How Demographic Composition Affects Social Relationships*

## INTRODUCTION

Relationships among educators are more and more regarded as an important element to schools' functioning, and a potential source of school improvement. Educational practitioners and scholars around the world are targeting teacher interaction as a way to facilitate knowledge exchange and shared teacher practice through a variety of collaborative initiatives, such as communities of practice, professional learning communities, and social networks (Daly, 2012; Daly & Finnigan, 2009; Hord, 1997; Moolenaar, 2012; Sleegers, den Brok, Verbiest, Moolenaar, & Daly, 2013; Wenger, 1998). The growing literature base around these concepts suggests that 'relationships matter' for fostering a climate of trust and a 'safe and open' environment to implement reform and engage in innovative teacher practices (Bryk & Schneider, 2002; Louis, Marks, & Kruse, 1996; van Maele & van Houtte, 2011; van Maele, Moolenaar, & Daly, 2012).

Social network literature asserts that relationships matter because the configuration of social relationships offers opportunities and constraints for collective action (Burt, 1983; Coleman, 1990). For instance, the extent to which an organizational network supports the rate and ease with which knowledge and information flows through the organization may provide it with an advantage over its competitors (Nahapiet & Ghoshal 1998; Tsai, 2001). While social network research often focuses on such (beneficial) consequences of social interaction (for example, the influence of teachers' knowledge exchange on increasing student achievement through educational innovations) (e.g., Moolenaar, Daly, & Sleegers, 2011), there is much less attention to the factors that explain why teachers interact with each other to informally exchange knowledge or seek advice. Social interactions result from processes of social selection and social influence (e.g. Frank & Fahrbach, 1999; Mercken, Candel, Willems, & De Vries, 2007). Social selection refers to the idea that individuals tend to choose to interact with individuals who are similar to them in characteristics such as behavior and attitudes. At the same time, individuals who interact with each other influence each others' behavior and attitudes, which may increase their similarity (McPherson, Smith-Lovin, & Cook, 2001). This is a process of social influence. In addition, individuals who share a relationship also tend to share similar experiences through their relationship (Feld, 1981).

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Attributes that are often overlooked for their potential to affect social relationships in school teams are demographic characteristics (cf. Tsui, Egan, & O'Reilly, 1992). Demographic characteristics are more or less constant elements that typify teachers, their relationships, and schools based on socio-economic factors such as age, gender, teaching experience, and school team composition. Several network studies have suggested that networks are affected by demographic characteristics of individuals, their dyadic relationships, and the network (Ibarra, 1992, 1995; Lazega & van Duijn, 1997; Veenstra et al., 2007). For instance, several studies reported that relationships among individuals with the same gender are more likely than relationships among individuals with opposite gender (a so-called homophily effect) (Baerveldt, van Duijn, Vermeij, & van Hemert, 2004; McPherson et al., 2001). These studies, however, seldom purposely aim to examine the impact of demographic characteristics on social networks and consequently only include few demographic characteristics of network members. Insights in the extent to which social relationships are formed in the light of multiple individual and organizational demographic characteristics are limited, and even more so in the context of education. As such, a study that solely focuses on the extent to which demographic variables affect teachers' social relationships will contribute to current research on teacher social interaction as this may partly explain why teachers seek out one another for informal interactions.

We argue that such groundwork knowledge is crucial for all those who aim to optimize teachers' social networks in support of school improvement and, ultimately, student achievement. Demographic variables are sometimes used in teacher professional development programs to group teachers and stimulate interaction among teachers within these particular groups (e.g. grouping based on grade level taught, years of experience, formal position, etc.). Few studies actually question whether this grouping actually reflects, supports, or constrains natural tendencies of seeking advice and learning from others in day-to-day school settings. Through a deeper understanding of these "natural" processes of social selection based on these 'constant' demographic factors, meaning the demographic variables affecting teachers' tendencies to interact with one another, this may offer additional nuanced insights for organizing teachers for professional development activities. In addition, these insights may also provide ways to target and stimulate "natural" advice-seeking in informal daily school settings.

The study described in this chapter aims to examine the extent to which social networks in school teams are affected by individual, dyadic, and school level demographic characteristics, such as teachers' gender and age, school team composition and school team experience, and students' socio-economic status. We report on a study among 316 educators in 13 Dutch elementary schools. Results of this study were expected to increase insights in the constant social forces that may partly define teachers' relationships in their school teams, and discover potential tendencies around, for example, homophily and structural balance. Based on a literature review of social network studies that include demographic characteristics in a wide range of settings, we pose several hypotheses on the extent to which

demographical characteristics at the individual, dyadic, and school level may affect teachers' social networks.

## THEORETICAL FRAMEWORK

### *Individual Level Demographics That May Affect Teachers' Social Networks*

Social network literature has suggested various individual demographic characteristics that affect the pattern of relationships, and as such social networks as a whole (Heyl, 1996; Veenstra et al., 2007). Following these suggestions, we will first review how individual level demographic characteristics may affect teachers' social networks. We focus on the individual demographics gender, formal position, working hours, experience at school, age, and grade level for their potential influence on teachers' patterns of social relationships and school teams' social network structure.

*Gender.* The likelihood of having relationships in a network may be associated with gender (Moore, 1990; Stoloff, Glanville, & Bienenstock, 1999). Previous research outside education has indicated that gender affects network formation (Ibarra, 1993, 1995; Pugliesi & Shook, 1998) and that, in general, women tend to have more relationships than men (Mehra, Kilduff, & Brass, 1998). These differences are already found in childhood (Frydenberg & Lewis, 1993) and continue to exist through life (Parker & De Vries, 1993; van der Pompe & De Heus, 1993). In various settings and cultures, both men and women have been found to draw on relationships with male colleagues in achieving their goals and acquiring information from more distant connections (Aldrich, Reese, & Dubini, 1989). As these studies have all taken place outside education, we have to take into account that the Dutch educational context may not reflect the same gender differences, particularly since the Dutch elementary education system, like many around the world, is characterized by a high percentage of female educators, while educational leadership positions are typically occupied by men, which may affect patterns of social interaction (e.g., Doppenberg, Bakx, & den Brok, 2012). However, we base our hypothesis as a starting point on the available research on gender differences in the likelihood of having relationships and hypothesize that male teachers will have a higher likelihood of receiving more relationships than female teachers, and women will send more relationships than men (*Hypothesis 1a*).

*Formal position.* Previous research in organizations (Lazega & van Duijn, 1997; Moore, 1990) and education (Coburn & Russell, 2008; Daly & Finnigan, 2009) suggests that the formal position of individuals may be related to their relational activity and popularity. For instance, Lazega and van Duijn (1997) found that lawyers were more often sought out for advice when they held a higher hierarchical position. Research outside education has indicated that the network position of an organizational leader is important in terms of access and leveraging social

resources through social relationships as well as brokering between teachers who are themselves unconnected (Balkundi & Harrison, 2006; Balkundi & Kilduff, 2005). In line with these studies, we expect that school principals will be more sought out for work related discussions than teachers. We also expect that principals will be involved in more relationships than teachers, since they depend on these relationships to gather information and convey knowledge, plans, and expertise to support student learning and monitor the functioning of teachers and the school. Moreover, principals are often reported to occupy a strategic position in the flow of information between a central office and teachers and relay important policy and organizational information from the central office to the teachers (Coburn & Russell, 2008). Therefore, we hypothesize that principals have a higher likelihood of sending and receiving relationships (*Hypothesis 1b*).

*Working hours.* In addition, the number of working hours that an educator spends at the school may also affect his/her opportunity to initiate and maintain social relationships. Recent research suggests that the relationship between network embeddedness and job performance is related to working hours (van Emmerik & Sanders, 2004). As many teachers in Dutch elementary education are working part-time hours (in our sample, about half of the teachers worked less than full-time, which is not uncommon in Dutch elementary schools). Paradoxically, working part-time may decrease teachers' opportunities to interact, while on the other hand increase the need for communication to 'make up' for a teacher's absence from school. We hypothesize that educators who work full time will have a higher probability of sending and receiving relationships than educators with part time working hours (*Hypothesis 1c*).

*Experience at the school.* Another demographic characteristic that may affect an individual's pattern of relationships is seniority, or years of experience at the school. The previously mentioned law study (Lazega & van Duijn, 1997) indicated that senior lawyers had a higher probability of being sought out for advice than junior lawyers. Besides having more work experience, a perceived network advantage of senior lawyers may be that they have built more strong, durable, and reliable relationships over time, and therefore have access to resources that are unattainable for more junior lawyers. The same may hold in schools, as teachers who have worked at a school for a longer period of time may have had more opportunities to develop and strengthen relationships than teachers with fewer years of experience at the school. Dutch elementary schools are often characterized by a teacher population with many years of experience at their particular school (e.g. in our sample, half of the teachers worked at the same school for over 11 years). Recent work suggests that more experienced teachers tend to seek out others to share knowledge more, and possess a more diverse network, than less experienced teachers (Daly, Moolenaar, Der-Martirosian, & Liou, in press; van Waes, van den Bossche, & van Petegem, 2013). Accordingly, we hypothesize that educators who have more experience in their school team have a higher likelihood

of sending and receiving work discussion relationships than educators who have less experience in the school team (*Hypothesis 1d*).

*Age* Network research in contexts outside work and education found age differences in relation to the number of relationships that individuals maintain (Cairns, Leung, Buchanan, & Cairns, 1995; Gottlieb & Green, 1984). In general, these studies suggest that, over a life time the number of relationships that people maintain tends to decrease with age. However, when we consider a school work environment, we may argue that with increased age, years of experience at the school also increases. In concordance with our previous hypothesis in which we argue that the number of relationships increases with seniority (Lazega & van Duijn, 1997), we also hypothesize that age will positively affect the probability of work related ties, meaning that older teachers are more likely to send and receive work related relationships than younger teachers (*Hypothesis 1e*).

*Grade Level.* Within schools, formal clustering within grade levels may affect the pattern of relationships among educators (cf. Spillane, Kim, & Frank, 2012). The grade level may to a certain extent affect the amount of interaction among educators since grade level teams may have additional grade level meetings and professional development initiatives are often targeted at the grade level (Daly, Moolenaar, Bolivar, & Burke, 2010; McLaughlin & Talbert, 1993). As such, the number of relationships that teachers have may be partly defined by the requirements of and opportunities provided by their grade level team. We may expect that teachers who teach upper grade levels send and receive more relationships than teachers who teach lower grade levels given the increasingly demanding curriculum in the upper grades combined with intensified student testing and preparation for education after elementary school. These conditions may require upper grade level teachers to engage more work related discussion than primary grade level colleagues. As such, we expect that teachers who teach upper grade levels will have a higher likelihood of sending and receiving relationships than teachers who teach lower grade levels (*Hypothesis 1f*).

### *Dyadic Level Demographics That May Affect Teachers' Social Networks*

Dyadic level demographics are demographics that typify the relationship between two individuals. Dyadic level effects give insights in network homophily. Network homophily is arguably the most well-known social network concept that often explicitly focuses on demographic characteristics of network members. The concept of homophily, also known by the adage 'birds of a feather flock together', addresses similarity between two individuals in a dyadic (paired) relationship. Homophily literature builds on the notion that individuals are more likely to develop and maintain social relationships with others that are similar to them on specific attributes, such as gender, organizational unit, or educational level (Marsden, 1988). Similarly, individuals who differ from each other on a specific attribute are less likely to initiate relationships, and when they do, heterophilous

relationships also tend to dissolve at a faster pace than homophilous relationships (McPherson et al. 2001). In this study we focus on two types of similarity that may define teachers' relationships, namely gender similarity and grade level similarity.

*Gender similarity.* A dyadic attribute that may affect teachers' patterns of social relationships is the gender similarity between two teachers. Several studies have shown that work and voluntary organizations are often highly gender segregated (Bielby & Baron, 1986; McGuire, 2000; McPherson & Smith-Lovin, 1986, 1987). This gender homophily effect already starts at a young age (Furman & Burmester, 1992). In the context of Dutch education, Heyl (1996) suggested an effect of gender homophily among teachers, indicating that for men and women, relationships with the opposite gender may be less frequent or intense than same-gender work relations. This may be also in part because research suggests that leadership roles also follow gender lines, with teachers being predominantly female and principals being predominantly male, as is also reflected in this study's sample. In line with current findings suggesting social selection according to gender similarity preference, we hypothesize a homophily effect for gender, meaning that educators will prefer same-gender relationships over relationships with teachers of the opposite gender (*Hypothesis 2a*).

*Grade level similarity.* Another dyadic attribute that may affect the pattern of teachers' relationships is the grade level. In the Netherlands, schools are relatively small compared to the United States and other countries, with often only one full time or two part time teachers per grade level. Commonly, Dutch school teams are formally divided into two grade level groups representing the lower grades ('onderbouw') and upper grades ('bovenbouw'), which are often located in close physical proximity. Recent research suggests that teachers who are located closely to each another are more likely to interact with each other than with teachers who are less physically proximate (Coburn & Russell, 2008). Moreover, most schools have separate break periods for the lower and upper grades and may hold additional formal meetings for the lower/upper grades to discuss issues related to these grades. These shared experiences and increased opportunities to interact may result in greater preference among teachers from similar grade levels to interact with each other (Suitor & Pillemer, 2000). Other factors that may support this preference for interaction with teachers that teach similar grade are similarity in curriculum and assessment and the fact that it is very common in Dutch elementary education to co-teach classes, meaning that two teachers share responsibility for a class and as such may naturally have a higher likelihood of interacting with their co-teacher at the same grade (e.g., Doppenberg, Bakx, & den Brok, 2012). Therefore, we hypothesize a homophily effect for grade level, meaning that teachers will more likely maintain relationships with teachers from their own grade level as opposed to developing ties with teachers who instruct different grade level (e.g., lower or upper level) (*Hypothesis 2b*).

*School Level Demographics That May Affect Teachers' Social Networks*

Although teachers can often choose with whom they interact, the social structure of their school's network is partly outside of their control (Brass & Burkhardt, 1993; Burt, 1983;). Just as individual relationships may constrain or support a teacher's access to and use of resources, the social structure surrounding the teacher may also influence the extent to which teachers may affect their network (Burt, 1992; Flap & De Graaf, 1989; Ibarra, 1992, 1993, 1995). Because of the embeddedness and interdependency of individuals in their social network, relationships and attributes at a higher level will affect lower-level relationships (Burt, 2000). As such, demographic characteristics at the school level may affect teachers' patterns of relationships. We pose that the following school level demographic characteristics affect teachers' pattern of social relationships: gender ratio, average age, school team experience, school size, school team size, and socio-economic status of the schools' students.

*Gender ratio and average age.* Above and beyond the influence of individual demographics on the tendency to form relationships, there may be aggregates of these individual demographics at the level of the school that may affect teachers' tendency to form and maintain relationships. Research in a law firm described above demonstrated that beyond the influence of individual level seniority, a lawyer's position in the firm's network was in part dependent on the ratio of juniors to seniors in the team (Lazega & van Duijn, 1997). For schools, a compositional characteristic that may affect patterns of relationships is gender ratio, or the proportion of female to male teachers. A school with a high ratio of female to male teachers may provide fewer options for homophily friendships between males given sheer numbers. Therefore, male teachers in such a school may have a lower tendency to maintain relationships in general and a higher propensity towards relationships with women than men in schools with relatively more male teachers. Research confirms that the gender composition of a team may significantly affect gender homophily, with the "minority" gender often having by necessity much more heterophilous networks than the majority (McPherson et al., 2001). Therefore, we expect that the gender ratio of the school team will affect teachers' social networks. In line with previous empirical work suggesting that women tend to have more relationships than men (Mehra, Kilduff, & Brass, 1998), we expect that teachers in schools with a high female to male ratio will have a higher likelihood of sending and receiving ties than individuals in teams with relatively more male teachers (*Hypothesis 3a*). Along the same lines, if we expect that age will increase the likelihood of sending and receiving relationships, then increased average age of a school team may also enhance the probability of relationships. Therefore, we hypothesize that average age is positively related to the probability of ties (*Hypothesis 3b*).

*Team experience, school size, and team size.* Prior research has indicated that individuals are more likely to reach out to others with whom they had previous relationships (Coburn & Russell, 2008). Given the time and shared experiences that

are necessary for building relationships, we may assume that the number of years that a school team has been functioning in its current configuration, without members leaving or joining the team, may affect teachers' likelihood of maintaining relationships. Therefore we include school team experience as a school level demographic that may positively affect teachers' pattern of relationships (*Hypothesis 3c*). Other school demographics that may affect teachers' inclinations to form relationships are school size (number of students) and team size (number of educators). Previous literature has suggested that the size of organizations and networks is directly related to the pattern of social relationships in organizations (Tsai, 2001). In general, the number of individual relationships and the density of social networks decrease when network size increases. As such, we may expect a lower probability of relationships in schools that serve more students (*Hypothesis 3d*) and schools with larger school teams (*Hypothesis 3e*).

*Students' socio-economic status.* Social networks can be affected by both endogenous and exogenous forces (Gulati, Nohria, & Zaheer 2000). An exogenous force to the school team that has been demonstrated to affect schools' functioning is the socio-economic status (SES) of its students (Sirin, 2005). We argue that the socio-economic status of the children attending the school may influence the probability that teachers will form relationships. For instance, teachers' perceptions of the urgency for communication and innovation may be dependent on the community surrounding the school. Typically, schools that serve more high-needs communities are associated with greater urgency in developing new approaches (Sunderman, Kim, & Orfield, 2005), which may relate to an increased probability of relationships among educators (cf. Moolenaar, Sleegers, & Daly, 2011). Therefore, we hypothesize that teachers in low SES schools will have a higher probability of having relationships than teachers in high SES schools (*Hypothesis 3f*).

## METHOD

### *Context*

The study took place at 13 elementary schools in south of The Netherlands. The schools were part of a school district,that provided IT, financial, and administrative support to 53 schools. At the time of the study, the district had just initiated a program for teacher development that involved a benchmark survey for the monitoring of school improvement. We selected a subsample of the district schools based on schools having at least 20 or more teachers resulting in 13 schools out of the larger sample. We selected this subsample for several reasons. First, multilevel p2 modeling has specific data requirements and is a relatively time and computational intensive procedure that requires significant computing resources due to the nature of the multilevel interdependent data. Estimations of the p2 models typically encounters difficulties in converging with smaller network sizes and more schools, which is in part due to the novelty and intensity of the technique in combination with available computing space in personal computers, with each

model estimation taking about six to nine hours of computing time. We acknowledge that the selected schools' team size (20 to 31) is relatively large in comparison to average Dutch elementary schools, and variation among schools in terms of team size was limited by selecting this subsample. However, we believe that there is a benefit to selecting a subsample that is relatively large and homogenous in size, particularly as these "larger" size networks provide additional opportunities for interaction upon which we can model our hypothesis in a way we could not do on smaller networks. In addition, larger networks offer more opportunities for processes of social selection, because in larger teams it is much less likely that all team members will interact on a daily basis than in a smaller team (e.g. teams with less than 10 team members). Therefore, we opted to select this subsample, while acknowledging its limitations, to examine the relationship between demographics and teachers' likelihood to engage in social relationships.

The context of Dutch elementary schools was beneficial to the study in three ways. First, school teams are social networks with clear boundaries, meaning the distinction of "who is part of the team" is unambiguous for both researchers and respondents. Second, in contrast to many organizations, school organizations are characterized by relatively flat organizational structures, in which educators perform similar tasks and job diversification is relatively small. Often, educators have had similar training backgrounds, and are receiving school wide professional development as a team. Therefore, despite natural differences in individual characteristics, teachers in Dutch elementary school teams are arguably more comparable among each other than organizational employees in many other organizations, making demographic characteristics possibly less related to differences in tasks or task-related status differences. Third, school teams are relatively small in comparison to many work organizations, which facilitated the collection of whole network data.

### *Sample*

The sample schools served a student population ranging from 287 to 545 students in the age of 4 to 13. We collected social network data from 13 principals and 303 teachers, reflecting a response rate of 94.5%. Of the sample, 69.9% was female and 54.8% worked full time (32 hours or more). Educators' age ranged from 21 to 62 years (M = 46.5, sd = 9.9 years). Aside from school size, team size, and number of students, with the sample schools being larger on average than typical elementary schools in the Netherlands, the study demographics of the teachers in the sample roughly reflected the overall Dutch teacher population and the overall district sample averages.[i] Additional demographic information is depicted in Tables 1 and 2.

*Table 1. Sample demographics of schools and educators (N = 13, n = 316)*

| | | | |
|---|---|---|---|
| *Individual level* | | | |
| Gender | Male | 95 | (30.1%) |
| | Female | 221 | (69.9%) |
| Working hours | Part time (less than 32 hours) | 143 | (45.2%) |
| | Full time (32 hours or more) | 173 | (54.8%) |
| Experience at school | 1-3 years | 42 | (13.3%) |
| | 4-10 years | 110 | (34.9%) |
| | > 11 years | 164 | (51.8%) |
| Grade level | Lower grade (K - 2) | 156 | (49.4%) |
| | Upper grade (3-6) | 160 | (50.6%) |
| *School level* | | | |
| School team experience | 6 months to 2 years | 5 | (38.5%) |
| | More than 2 years | 8 | (61.5%) |

Note: Educators who taught both lower and upper grade were asked to choose with which grade level they worked most (e.g. principal, specialist staff).

*Table 2. Sample demographics of schools and educators (N = 13, n = 316)*

| | N | Min. | Max. | M | Sd |
|---|---|---|---|---|---|
| *Individual level* | | | | | |
| Age | 316 | 21 | 62 | 46.5 | 9.9 |
| *School level* | | | | | |
| Gender ratio | 13 | 59.1 | 87.0 | 72.4 | 8.4 |
| Average age | 13 | 41.1 | 50.6 | 46.4 | 2.5 |
| Number of students | 13 | 287 | 545 | 371 | 79.3 |
| School team size | 13 | 20 | 31 | 26.0 | 4.0 |
| Socio-economic status (SES) | 13 | .5 | 30.5 | 9.2 | 9.3 |

Notes: Gender ratio is calculated as the percentage of female school team members. SES is calculated as the weighted percentage of students for whom the school receives extra financial resources.

*Instruments*

*Social networks.* We assessed the influence of demographic characteristics on teachers' probability of having work-related relationships. We asked respondents the following question: 'Whom do you turn to in order to discuss your work?' The network of discussing work related matters was selected because it is assumed to be an important network for the exchange of work related information, knowledge, and expertise that may affect individual and group performance (Sparrowe, Liden,

Wayne, & Kraimer, 2001). A school-specific appendix was attached to the questionnaire comprising the names of the school team members, accompanied by a letter combination for each school team member (e.g., Ms. Yolanda Brown[ii] = AB). The question could be answered by indicating a letter combination for each colleague who the respondent considered part of his/her work discussion network. The number of colleagues a respondent could indicate as part of his/her network was unlimited.

*Individual, dyadic, and school level demographics.* We collected demographic variables to assess how individual, dyadic, and school level attributes affect the pattern of social relationships among educators. At the individual level, we examined the following individual attributes: gender, formal position (teacher/principal), working hours (part time/full time), number of years experience at school, age, and whether a teacher was teaching in lower or upper grade. At the dyadic level, we included similarity of gender and similarity of grade level (lower/upper grade). At the school level, we investigated school size, number of instructional staff, gender ratio, average age, years of school team experience in current formation, and students' socio-economic status (SES).

*Data Analysis*

*Testing the hypotheses* Since our dependent variable consisted of social network data that are by nature interdependent (relationships among individuals), the assumption of data independence that underlies conventional regression models is violated. Therefore, we employed multilevel *p2* models to investigate the effect of individual, dyadic, and school level demographics on having work-related relationships (Baerveldt et al., 2004; van Duijn, Snijders, & Zijlstra 2004). We used the *p2* program within the StOCNET software suite to run the multilevel *p2* models (van Duijn et al., 2004; Zijlstra, 2008; Zijlstra, van Duijn, & Snijders 2006).

The *p2* model is similar to a logistic regression model, but is developed to handle dichotomous dyadic outcomes. In contrast to a univariate logistic regression model, the *p2* model controls for the interdependency that resides in social network data. The model focuses on the individual as the unit of analysis. The *p2* model regards sender and receiver effects as latent (i.e., unobserved) random variables that can be explained by sender and receiver characteristics (Veenstra et al., 2007). In the multilevel *p2* analyses, the dependent variable is the aggregate of all the nominations a team member sent to or received from others. A positive effect thus indicates that the independent demographic variable has a positive effect on the probability of a relationship. Similar to conventional logistic regression, the regression coefficients (reported as log odds ratios) reflect the expected change in the log of the odds associated with a one unit change in the independent variable (Pedhazur, 1997). Meaning, a one unit change in the demographic characteristic will result in a change in the likelihood of having a relationship that is comparable

to the log of the odds of the reported coefficient with the corresponding standard error.

The social network data in this study have a three-level structure. Network data were collected from 13 schools (Level 3) with 316 educators (Level 2) and 11.241 dyadic relationships (Level 1). To examine the influence of individual, dyadic, and school level demographics on the likelihood of having work related relationships we constructed two multilevel models. In the first multilevel model, the effects of individual and dyadic level demographics on the possibility of having relationships were examined. In the second multilevel model, school level demographic characteristics were added to the model in order to explain the additional effect of school level demographics on the possibility of having relationships, above and beyond the effects of individual and dyadic level demographics.

Although there is no universally accepted significance test for logistic regression (Long, 1997) we used the Wald statistic, calculated as the square of (the coefficient divided by the standard error of the coefficient), which is then compared to the $\chi 2$ distribution with one degree of freedom to calculate the significance of the effects. In addition, to aid interpretation of statistical significance, we report quantiles from the distributions of estimation samples, which provide the Bayesian analogue to a confidence interval. The estimate will be statistically significant ($p < .05$) if the quantiles between 2.5 and 97.5 do not include 'zero' (cf. Spillane, Kim, & Frank, 2012).

*How to interpret p2 estimates.* In general, effects in *p2* models can be interpreted in the following manner. Results on the variables of interest include both *sender effects* and *receiver effects* that signify the probability of sending or receiving a relationship nomination. A positively significant parameter estimate can be interpreted as the demographic variable having a positive effect on the probability of a relationship (Veenstra et al., 2007). For instance, a positive sender effect of formal position with dummy coding (teacher/principal) means that the position with the upper dummy code (principal) will have a higher probability of sending relationships than the position with the lower dummy code (teacher).

To assess homophily effects, dyadic matrices were constructed based on the absolute difference between two respondents. For example, the dyadic relationship between male and female educators would be coded as a relationship between educators with a different gender because the absolute difference between male (dummy variable = 0) and female (dummy code = 1) is 1. Smaller numbers thus represent greater interpersonal similarity in gender. The same procedure was carried out for grade level differences. To facilitate the interpretation of the models, we labeled the dyadic parameters 'different gender' and 'different grade level'. A negative parameter estimate for 'different gender' would thus indicate that a difference in gender is related to a lower probability of having relationships. Meaning, teachers with different gender are less likely to report a relationship, and conversely, relationships are more likely among same-gender teachers. As such, negative parameters would provide evidence of the hypothesized homophily effects.

In *p2* models, two parameters are by default included as they 'control' for important network effects. The first default parameter is the *overall mean density effect*. A positive density effect indicates that overall, the networks are rather dense, whereas a negative density effect indicates that the networks are rather sparse. Technically phrased, when the density parameter is negative, the probability of a tie is lower than 0.50. The second default parameter is the *overall mean reciprocity effect*. A positive reciprocity effect means that symmetric relationships are more likely to occur than asymmetric relationships, while a negative reciprocity effect signifies a higher probability of asymmetric relationships in the networks. In addition, the *p2* models include information on differences in nominating (sender variance), in receiving nominations (receiver variance), and the extent to which people who send more relationships also have a higher probability of receiving relationships (sender-receiver covariance).

## RESULTS

### *The Effect of Individual and Dyadic Level Demographics on Work Discussion Relationships*

The results for the *p2* analyses are reported in Table 3. We will first examine model 1, in which we include individual and dyadic demographic variables in the prediction of having a work-related relationship. To recall, our first hypothesis was that 1a) men will receive more relationships than women, and women will send more relationships than men. Subsequent hypotheses posed that the probability of being involved in relationships was higher for 1b) principals 1c) full time employed educators 1d) educators who had more experience working at the school 1e) older educators, and 1f) upper grade level teachers. Moreover, we hypothesized that homophily effects would be found for 2a) gender and 2b) grade level. The results for the multilevel *p2* models are presented in Table 3.

Findings indicate a negative density effect, suggesting that the work related networks are overall rather sparse. This may be explained by the study sample of relatively large schools. The positive reciprocity effect signifies that on average, work related relationships among educators have a higher probability to be reciprocated than to be unidirectional. In regard to the sender covariates, results indicate that none of the individual characteristics increased the probability of sending ties. In other words, women did not send more relationships than men, and being a principal, working full time, having more experience at the school, or being older did not affect the number of relationships that an educator sends out with regard to work related discussions. An examination of the receiver covariates rendered a positive effect for formal position and teacher experience at school. This means that principals and those who have worked at the school for a longer time had a higher probability to be sought out for work related discussions. As such,

*Table 3. The effect of sender and receiver demographic variables on the probability of having a work related relationship. Parameter estimates of the multilevel p2 models (n = 316)*

| | Model 1 | | | Model 2 | | |
|---|---|---|---|---|---|---|
| | Posterior mean | SE | 95% CI | Posterior mean | SE | 95% CI |
| *Overall mean* | | | | | | |
| Density | -3.03 | 1.45 | | .35 | 6.43 | |
| Reciprocity | 2.27 | .19 | | 10.68 | 10.98 | |
| *Sender covariates* | | | | | | |
| Gender (male/female) | -.09 | .32 | (-.87/.47) | **3.86** *** | .71 | ( 2.11 / 4.91) |
| Formal position (teacher/principal) | .20 | .29 | (-.34/.90) | .16 | 1.56 | (-2.53 / 2.87) |
| Working hours (part time/full time) | -.35 | .30 | (-.84 /.21) | -.73 | 1.39 | (-2.58 / 1.70) |
| Experience at school | .04 | .10 | (-.16/.27) | .13 | .27 | (-.27 / .60) |
| Age | -.03 | .01 | (-.05/.00) | .09 | .06 | ( .00 / .19) |
| Grade level (lower grade/upper grade) | .21 | .37 | (-.52/.81) | **5.04**** | 1.68 | ( 2.16 / 7.81) |
| *Receiver covariates* | | | | | | |
| Gender (male/female) | .28 | .22 | (-.08/.68) | **-4.02***** | 1.17 | (-5.68 / -1.61) |
| Formal position (teacher/principal) | **1.04** *** | .26 | ( .51/1.54) | .96 | .67 | (-.41 / 2.07) |
| Working hours (part time/full time) | .00 | .22 | (-.49/.39) | **-5.25***** | 1.25 | (-7.24 / -3.47) |
| Experience at school | **.29** *** | .05 | ( .20/.40) | **-.79**** | .25 | (-1.29 / -.33) |
| Age | -.02 | .01 | (-.04/.00) | **-.12***** | .04 | (-.19 / -.06) |
| Grade level (lower grade/upper grade) | .13 | .19 | (-.19/.57) | -1.62 | .98 | (-3.52 / -.29) |
| *Relationship covariates* | | | | | | |
| Different gender | **-.82** *** | .14 | (-1.09/-.53) | **-.51***** | .14 | (-.83 / -.25) |
| Different grade level | **-.70** *** | .13 | (-.99/-.48) | **-.43*** | .21 | (-.94 / -.09) |
| *School covariates* | | | | | | |
| Gender ratio[a] | | | | -.03 | .02 | (-.08 / .00) |
| Average age | | | | -.03 | .10 | (-.20 / .11) |
| School team size | | | | -.14 | .08 | (-.26 / .03) |
| Number of students | | | | .10 | .06 | (-.03 / .19) |
| School team experience | | | | **.42**** | .14 | ( .09 / .64) |
| Socio-economic status (SES)[b] | | | | .01 | .02 | (-.03 / .03) |
| *Random effects* | | | | | | |
| Sender variance | 8.05 | 2.29 | | 2.41 | .58 | |
| Receiver variance | 1.74 | .42 | | 1.57 | .32 | |
| Nominator-target covariance | 1.30 | .82 | | -.99 | .24 | |

Note: 11.241 dyadic relations from 316 educators from 13 Dutch elementary schools,
* p < .05, ** p < .01, *** p < .001

[a] Gender ratio is calculated as the percentage of female team members.

[b] SES is calculated as the weighted percentage of students for whom the school receives extra financial resources.

Hypotheses 1b and 1d could be partially supported. Results on the effect of dyadic covariates confirmed the existence of homophily effects for gender and grade level. In general, educators tended to prefer relationships with same-gender peers and peers from their own grade-level. These findings confirm hypotheses 2a and 2b.

*The Effect of School Level Demographics on Work Discussion Relationships*

While the first model examined the influence of individual demographics without taking demographic differences between schools into account, in Model 2 we added school level demographics to the equation. This analysis will provide insights in how characteristics of schools may affect the probability of ties above the influence of individual demographics. Results for the school level demographics suggest a positive effect of overall team experience on the probability of relationships in school teams. In other words, the more experience a school team had in their current formation, the more likely relationships were formed around work related discussion. Other school level demographics appeared not to affect teachers' probability of sending or receiving relationships around work discussion above and beyond the prediction of relationships from individual and dyadic demographic variables. As such, only hypothesis 3e could be confirmed. When taking school demographics into account, results indicate some changes in the significance of individual and dyadic level parameters. For instance, results suggest significant sender effects of the individual demographics grade level and gender. Findings thus suggest that educators from upper grade tend to send out more relationships than educators that teach lower grade. However, they do not receive more relationships, as evidenced by a non-significant receiver effect. Also, female educators appear to send more relationships than male educators, but male educators receive more relationships than female educators, signified by the significant negative receiver parameter for gender. These findings partially support Hypotheses 1a and 1f when taking school level network differences into account. Surprisingly, findings also indicate negative receiver effects for educators that work fulltime, educators with more experience at the school, and older educators. Meaning, educators with these demographics are less likely to receive work-related relationships. Also, in contrast with our hypothesis, principals are not significantly more likely to send or receive relationships than teachers. As such, these findings contradict respectively Hypotheses 1b, 1c 1d, and 1e.

The change of a positive effect of teacher experience at school in Model 1 into a negative effect in Model 2 may be evidence of a suppression effect due to the inclusion of school demographics, and in particular, the significant effect of school team experience. School team experience and teacher experience at school may be correlated, which may explain why school team experience would suppress an individual level effect of experience. When taking school team experience into account, the amount of (individual) experience at school decreases teachers' likelihood of receiving relationships. Moreover, the significant receiver effect for principals disappears under the influence of school demographics, but this may

occur due to an overestimation of the standard errors, since the absolute value of the parameter estimate is similar in both models. At the dyadic level, again homophily effects can be confirmed for gender and grade level, thus supporting Hypotheses 2a and 2b when taking school level network differences into account.

## DISCUSSION

The field of educational research into social networks among educators is expanding rapidly. While studies are focusing on the potential effects of social networks for a variety of school outcomes, insights in the social forces that affect social network structure are limited. This line of inquiry is particularly important in educational settings, where teachers play such a vital role in realizing school outcomes and where the expectations and stakes for collaborative initiatives are high. Better understanding what supports and constrains collaborative initiatives in the form of demographic characteristics and social relationships represents a rich area of inquiry and signification implication for practice. In support of this goal, this study examined 316 teachers of 13 schools in a large district in The Netherlands. We explored whether the probability of sending and receiving work discussion relationships was affected by several demographic characteristics at the level of the individual, the dyad, and the school. Our findings give rise to the discussion of multiple general themes.

### *Individual Demographics Affect the Probability of Relationships in Line with Educational Practice*

The findings of this study, although not always in the way we expected, make sense in an educational context. For instance, results indicated that teachers from upper grade tend to send more relationships around work discussion than teachers from lower grade. It may well be that the teacher practice and lesson planning of upper grade levels require more coordination and interaction among these grade level members than among lower grade level members. Recall that we also found a homophily effect for grade level, which means that the ties that are sent out by upper grade teachers have a higher probability of being targeted towards same-grade level peers. In other words, communication is more likely *within* grade levels than *between* grade levels. In combination with physical proximity for teachers within grade levels educational practice offers ample explanations for our findings. Therefore, in creating and strengthening professional communities, it may be useful to attend to this grade level gap as a means to increase overall teacher interaction and the exchange of experience and expertise in support of continuing paths of learning throughout elementary education.

Against our expectation, full time employed teachers receive fewer relationships than part time employees. Again, this may be related to the amount of coordination that is needed to effectively ‘share’ teaching responsibility between two teachers. Although full time teachers probably spend more time at school, the work related discussion network is mainly dominated by relationships among part time

educators. Part time teachers, as they spend less time at the school, may have to work 'harder' and send out more ties to find the information they need to perform their tasks and play "catch up" on information they missed in their absence. When aiming to increase teacher interaction in support of teacher professional development or school improvement, scholars and practitioners should be aware of the already increased burden of work related interaction on part time teachers.

It is striking that principals were not found to send more relationships than teachers. Especially with a general purpose network such as 'work related discussion', we would expect that principals would engage in more relationships than teachers, especially given that the networks were on average rather scarce. One explanation could be that principals perceive interaction with teachers as such an integral part of their task, that they interpreted work related discussion differently than teachers. Principals in these schools may also have developed additional strategies that lower their burden of having to maintain too many relationships and draining their resources (Balkundi & Harrison, 2006), such as transferring leadership tasks to senior teachers or assistant principals. We also recognize that principals may have networks of work related interactions with others beyond the school as well. In addition, schools may have formally appointed associate principals or informal leaders that share the (responsibility of) disseminating information among the instructional staff (e.g. Moolenaar, Daly & Sleegers, 2010; Penuel, Frank, & Krause, 2010; Spillane et al., 2010).

This finding points to the realization that principals do not per definition have a higher probability of sending or receiving relationships in a school team, which implies that there may be teachers who are 'better positioned' to convey information through the school team's social network than the principal. Conversely, professional development initiatives aimed at increasing teacher interaction are advised to attend to both teacher interactions and the principal position in the school's social network in raising awareness for the importance of having a solid structure of social relationships in place.

### *Individual and Dyadic Demographics Affect Networks to a Larger Extent Than School Level Characteristics*

Results further suggest that the demographics particularly influence the reception of relationships, more than the sending of relationships. This finding implies that a social network is defined by certain 'regularities' that affect the flow of resources such as information, knowledge, and support. Two of these regularities are homophily effects for gender and grade level; educators clearly prefer same-gender work relationships over different gender relationships and they tend to maintain relationships within their grade level over relationships with teachers from other grade levels. This finding is reflected in many intervention programs that target teacher interaction at the grade level (Newmann, King, & Youngs, 2000). Yet, practitioners should be careful not to focus too much on solely building relationships at the grade level, since this may increase the potential of homogenous cliques that may consist of many strong but redundant ties, which

inhibit the flow of new, complex knowledge in the network through weak ties that span grade levels and gender segregation lines (Burt, 1997, 2000; Hansen, 1999).

School level demographics were found to be much less important for the pattern of social relationships among teachers than were individual and dyadic characteristics. The only school level characteristic that affected the probability of individual relationships is school team experience. What has to be noted, however, is that the employed statistical models (p2) are only designed to examine dyadic network characteristics as dependent variables (Snijders, 2002). Yet, the included school demographic variables may also affect social network structure at a higher level than the dyad, for instance network centralization or the number and shape of triadic relationships. Recently, scholars have developed p* (ERGM) models, that may be used to examine such questions. As such, there is a dearth of work examining the influence of 'natural and inflexible' demographics and other antecedents that may affect the probability of social relationships in school organizations (Daly, 2010).

### *Limitations*

While we see the potential of this study to guide social network research and intervention programs aimed at teacher interaction, we acknowledge its limitations. One limitation that may affect our findings is the role of network perception in the self-report of social relationships. For instance, Baerveldt et al. (2004) found that the number of relationships that an individual reports is associated with the importance that an individual attaches to having relationships. To counter this bias, it would be interesting to include the relative importance of having relationships as an individual attribute in subsequent studies into the influence of demographic characteristics on network structure. In addition, this study focused on the influence of demographic characteristics of teachers and schools on the formation of 'work discussion' relationships, and as such, future research may be extended to include other types of networks that may support teachers' daily practice, such as the exchange of advice, materials and resources, and strong personal relationships such as friendship (e.g. Moolenaar, 2010; Moolenaar, Sleegers, Karsten, & Daly, 2012).

Another limitation pertains to the level of generalization that is possible from our findings. Since the findings of this study contradict some findings in other settings, it is questionable whether our findings are generalizable to other contexts beyond Dutch elementary education. As mentioned before, Dutch schools are much smaller than U.S. elementary schools. Although we did not find effects of school size (number of students) and school team size (number of instructional staff) on the probability of relationships in school teams, it may be possible that this is due to the relative homogeneous school and team sizes in our sample compared to potential differences in school team size in other countries, such as the U.S. Therefore, this study should be valued as a first exploration of the influence of demographics on social network structure, specifically in regard to the school level demographics.

*Social Forces in School Teams*

This study emphasizes the importance of attending to demographic characteristics at multiple levels of analysis (individual, dyadic, and school) in efforts to further social network research and the implementation of collaborative initiatives in support of school improvement. These demographic characteristics represent the social forces upon which social network initiatives are layered. As such, insights in these demographics are vital to guide our expectations of networked interventions. Knowledge of the social forces that affect social networks enable practitioners to explore ways to target social networks in school teams in such a way that they are optimally equipped to transfer valuable resources through the school team in order to facilitate collective teacher action (Moolenaar & Daly, 2012). One important clue to optimizing social network structure is that a weak and unstable network is not conducive to creating organizational benefits or supporting organizational change. Practitioners, educators, educational leaders, and scholars should first and foremost orchestrate the necessary conditions that promote network stability (Dhanaraj & Parkhe, 2006). This study shows that a potential route through which this can be achieved is to minimize school team turnover and increase school team experience. Since change experts and scholars can hardly intervene in any of the other demographic characteristics, they will have to design interventions and research that take into account these social forces that affect social networks in school teams. It is through the individuals operating within fields of these social forces, that school change efforts occur and optimizing the potential of both ties and forces hold tremendous potential in affecting instructional practice and ultimately, student achievement.

## NOTES

[i] Overall, our sample was comprised of a higher percentage of male educators (30.1% versus around 20% on average) and a slightly lower percentage of educators who worked part-time (in our sample, 45.2% worked less than 32 hours, and in Dutch elementary education in general, around 57% worked less than 35 hours at the time of our study). Average age reflected the Dutch educators' average at the time of the study (46 in the sample versus 45 in the Dutch elementary teacher population). For the other sample demographics included in this study, we could not find adequate comparison demographics (e.g., years of experience at the school, grade level taught) (CBS Statline, 2013). Given the relatively small size of the differences between our sample and the averages of the Dutch teacher population at the time of the study, we expect that the deviations did not significantly affect our findings.

[ii] All names are pseudonyms.

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# 11. LEARNING ENVIRONMENT EXPERIENCES IN PRIMARY EDUCATION

*Their Importance to Academic Engagement*

## INTRODUCTION

A growing body of research has established that students' learning environment experiences at school contribute to their learning and achievement. In particular, supportive teacher-student interactions have been mentioned as characteristics of a powerful learning environment and have been connected with students' learning and academic engagement from different perspectives (Opdenakker & Minnaert, 2011). An encompassing theoretical framework that connects teacher-student interactions with students' academic engagement is Self-Determination Theory (SDT; Deci & Ryan, 2000, 2002). Central to SDT is the concept of basic psychological needs. SDT assumes that people are active organisms, with evolved tendencies toward growing, mastering ambient challenges, and integrating new experiences into a coherent sense of self. However, although these developmental tendencies are natural, they require ongoing social nutriment and support. The social context, and thus also teacher-student interactions, can either support or thwart the natural tendencies of students toward active engagement and psychological growth. To the extent that the basic psychological needs are continuously satisfied, people will develop and function effectively and experience wellness. When the needs are thwarted, people more likely evidence ill-being and non-optimal functioning. Related to students this means that students' basic psychological needs should be continuously satisfied in their learning environment (and in particular in their interaction with their teachers) in order to be actively engaged in school and function and develop effectively.

## BASIC PSYCHOLOGICAL NEEDS, LEARNING ENVIRONMENTS AND ACADEMIC ENGAGEMENT

Within the Basic Psychological Needs Theory (BPNT), a mini-theory of SDT, the existence of three fundamental psychological human needs is assumed. These needs, which are assumed to be innate and universal, are the needs to feel autonomous, to feel competent, and to feel related. The need to feel autonomous finds its' origin in the inherent desire that people have to experience volition, to be causal agents, and to act in accordance with their sense of self. Feeling autonomous is not the same as feeling independent of others and autonomously initiated actions can be initiated in response to a request of significant others. For students it means

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that they experience their engagement for school as a self-chosen act reflecting their own values and needs and experience their willingness to engage as unpressured. Students who feel autonomous are willingly devoting energy and time to their schoolwork (Niemiec & Ryan, 2009). The need for competence refers to the need to feel effective in ongoing interactions with the (social) environment while exercising and expressing one's capacities. Exercising and expressing capabilities gives people an inherent satisfaction (White, 1959). Students feeling competent feel able to meet the challenges of their school work (Niemiec & Ryan, 2009) and feel they acquire control over school outcomes. The feeling of competence provides them the energy for learning. The last need, the need for relatedness, refers to the need to feel connected to others, to belong, and to be cared for by others. It also refers to the desire to care for others. In general, the desire to form and maintain strong and stable interpersonal relationships is central to this need (Ryan, 1995). To feel related implies that people experience an interpersonal bond or a relationship characterized by affective concern and stability. Frequent personal contact that is free from conflict and negative affect and is pleasant and affectively positive is crucial to satisfy the need for relatedness. Students feeling related experience high quality relationships with their teachers and classmates.

According to BPNT, the satisfaction of the mentioned basic psychological needs positively affects motivation and engagement because they provide the energy and direction for people to engage in activities that satisfy these needs (Deci & Ryan, 2011). Related to school, students' experiences of psychological needs satisfaction play an important role to their academic engagement. Academic engagement refers to students' active involvement during learning activities (Fredericks, Blumenfeld, & Paris, 2004; Skinner, Furrer, Marchand, & Kindermann, 2008; Wellborn, 1991) and refers to behavioral (e.g., participation in school activities) and affective/emotional dimensions (e.g., interest and enjoyment in school tasks). Thus, academic engagement "expresses the behavioral intensity of the active involvement of students in classes as well as the emotional quality of their involvement" (Jang, Reeve, & Deci, 2010, p. 588). Niemiec and Ryan (2009) conclude in their article on intrinsic motivation and engagement that students are more willing to engage in learning tasks (also in relatively uninteresting tasks) when their needs of autonomy, competence, and relatedness are satisfied, which is also confirmed by recent research of Minnaert and Opdenakker and colleagues (Minnaert, Boekaerts, de Brabander, & Opdenakker, 2011; Opdenakker, Minnaert, & Stroet, 2012). In these studies, evidence for the importance of the need for relatedness in addition to the other two needs is stressed. The satisfaction of the need for relatedness facilitates the process of internalization, i.e. the process of adopting or deeply internalizing values, goals, or belief systems, which is essential for students' engagement at school. In addition, Niemiec and Ryan (2009) assert that, according to SDT, the satisfaction of both the need for autonomy and competence is essential to maintain being engaged in learning. Finally, Deci, Vallerand, Pelletier and Ryan (1991) stress that student motivation, in general, will be enhanced or facilitated by support for competence and relatedness.

According to BPNT, social contexts can support or thwart people's basic psychological needs and, therefore, can impact people's engagement. This idea is in line with current views on academic engagement stressing that academic engagement evolves from complex interactions between personal and home characteristics and the school environment (Janosz, Archambault, Morizot, & Pagani, 2008). Schools and teachers create by definition social contexts and play a pivotal role in the satisfaction of their students' needs by supporting their autonomy, competence and relatedness. The availability of autonomy support, structure, and teacher involvement within the learning environment is assumed to positively affect students' need satisfaction and thereby their motivation and academic engagement. This is in line with findings of Opdenakker and colleagues (Opdenakker & Minnaert, 2011; Opdenakker & Maulana, 2010; Opdenakker et al., 2012; Stroet, Opdenakker, & Minnaert, 2013), which indicate that the availability of supportive learning conditions (in particular the availability of structure and autonomy support and of empowered, supportive classroom environments where teacher-student relations are encouraged and nourished and teachers are supportive, warm and responsive) is important for student achievement as well as for students' academic engagement. Research of Skinner and Belmond (1993) also confirms these findings in regard to teacher support, involvement, and students' academic engagement. SDT postulates that basic psychological need satisfaction is the underlying mechanism by which characteristics of the learning environment influence students' academic engagement. Thus, basic psychological needs act as mediators of social context and learning environment experiences. The few studies that paid attention to the mediating role of basic needs, mainly in sport education and related to well- and ill-being and video game playing, provide evidence for (partial) mediation of learning environment characteristics and (manipulated) video game features by basic need satisfaction (Adie, Duda, & Ntoumanis, 2008; Barkoukis, Hagger, Lambropoulos, & Tsorbatzoudis, 2010; Peng, Lin, Pfeiffer, & Winn, 2012; Tylor & Lonsdale, 2010). A recent study, on intrinsic motivation in cognitive subjects in the first grade of secondary education (Opdenakker et al., 2012), delivered also evidence for effects of basic need satisfaction on students' motivation and for the mediation role of basic needs satisfaction in the relationship between learning environment characteristics and student motivation.

## STUDENT PERCEPTIONS AND DIFFERENTIAL SENSITIVITY

The way students perceive their learning environment is crucial. Classroom environment research as well as research and theories on motivation and self-determination recognize the importance of student perceptions (Deci & Ryan, 2002; den Brok, Bergen, Stahl, & Brekelmans, 2004; Fraser, 2007) and research of Skinner and Belmont (1993) and Opdenakker and Maulana (2010) showed the importance of student perceptions of teacher support and involvement to students' level and growth of academic engagement. However, not only student perceptions are of importance. There are some indications that teacher support and good teacher-student relations may be more important to young students, at-risk

students, and students with a foreign background (D'Agostino, 2000; Scheerens, 2007; den Brok, van Tartwijk, Wubbels, & Veldman, 2010). This suggests that attention should be paid to student characteristics when effects of learning environments are studied. If supportive and constructive teacher-student interactions are more important for the development of at-risk students, who often live and learn in contexts of poverty (financial, intellectual, language) and inequality of access to learning opportunities, this should receive special attention. Finally, there is also some evidence that competence need satisfaction is more important for highly achievement-motivated students (Schüler, Sheldon & Fröhlich, 2010). This suggests that students more oriented towards the achievement motive domain are more affected by domain-relevant need satisfaction, i.e. competence need satisfaction.

## THE PRESENT STUDY

The present study investigates whether students' perceptions of their teacher, in relation to the satisfaction of their psychological needs of autonomy, competence and relatedness, explains differences in the (development of) students' academic engagement at the end of primary education. Attention is paid to unique and joint effects of students' perceptions of autonomy, competence and relatedness satisfaction in the learning environment as well as to differential effects for student gender, ethnic-cultural background, and prior academic engagement.

## METHOD

### *Sample and Procedures*

Participants were 777 students (mean age 11.6 years) of 41 sixth grade classes (36 primary schools situated in the northern part of the Netherlands). Approximately 53% of the schools were public schools. Questionnaires were used to tap students' learning environment perceptions (end of Grade 6) as well as their academic engagement at the end of Grades 5 and 6. Students' ethnic-cultural backgrounds were tapped as well.

### *Instruments and Measures*

The *Basic Psychological Needs Satisfaction by Teachers Questionnaire* is based on an instrument for gathering data about basic need satisfaction in partner relationships (Basic Need Satisfaction in Relationships Scale) by La Guardia and colleagues (La Guardia, Ryan, Couchman, & Deci, 2000). The original questionnaire consists of 9 items related to the satisfaction of all three basic psychological needs: autonomy, competence and relatedness. An adaptation and translation of this instrument was made to make it suitable to measure primary students' needs satisfaction in their relationship with their teacher. Statements were scored on a five-point Likert-type scale and students rated how well their basic

needs are met when they are with their teacher. Exploratory factor analysis revealed the existence of one general factor, which could be subdivided into three sub-factors referring to the three basic psychological needs. Together, the three factors explained 79% of the total variance. In line with the findings of La Guardia et al., confirmatory factor analysis revealed that a three-factor solution provided an adequate fit to the data ensuring that the items loaded on the three factors as expected (Root mean square error of approximation was .067, p-value of close fit was .14 and comparative fit index was .99). In addition, and in line with La Guardia et al., Chi-square analyses showed that the three-factor model was significantly better than a one-factor model or any of the three possible two-factor models. The reliability coefficients (Cronbach's α) were respectively, .85 (Overall basic needs satisfaction, 6 items), .60 (Autonomy, 2 items), .70 (Competence, 2 items), and .78 (Relatedness, 2 items).

The *Academic Engagement Scale* (based on Roede, 1989) was administered near the end of the school year of Grade 5 (3 items, α = .83) and Grade 6 (9 items, α = .80). Self-rated statements were scored on a five-point Likert-type scale. The scales consisted of items referring to engaged behavior (effort exertion and persistence, indicators of mental effort: attention and concentration) and engaged emotion (enjoyment and enthusiasm), with the strongest focus on engaged behavior. This operationalization of academic engagement is in line with the (behavior) engagement conceptualization of Skinner, Kindermann and Furrer (2009) and current views on academic engagement (Fredericks et al., 2004; Jang et al., 2010; Skinner et al., 2008; Wellborn, 1991).

The students' *ethnic-cultural background* was measured by assessing the amount of Dutch spoken at home (0 refers to only Dutch spoken at home; 4 refers to no Dutch spoken at all at home) and by the nationality of the parents (0 refers to both parents are of Dutch nationality; 1 refers to one of the parents are of Dutch nationality; 2 refers to both parents have a foreign nationality). Approximately 89% of the students spoke only Dutch at home. For approximately 12% of the students, one or both parents had a foreign nationality.

### *Analyses*

Multilevel analyses (MLwiN; Rasbash, Charlton, Browne, Healy, & Cameron, 2005) were used to study effects of students and teachers on students' academic engagement. Two-level hierarchical linear models were constructed with students at the lowest level (level 1) and classes at the higher level (level 2). Effects of teachers on students' academic engagement were studied without and with a control for student background, gender of participant and prior academic engagement. The first analysis shows the total effects of the dimensions of need satisfaction by the teacher (BNST) (Learning environment model). The second analysis reveals the value added effects of these dimensions (Learning environment model – value added). Cross-level interactions between student characteristics and basic needs satisfaction by teacher dimensions were also examined in order to find evidence for differential effects of the basic needs satisfaction dimensions.

## RESULTS

Multilevel analysis indicated that about 12% of the differences in academic engagement between students at the end of grade 6 were related to their classroom learning environment. Overall basic need satisfaction by the teacher played a significant role and explained 29.7% of the differences in academic engagement between students and 24.3% of the variance between learning environments, even when ethnic-cultural background, sex of child and prior engagement was controlled for (additional explained variance by the BNST was respectively 12.5% and 13.5%; see Table 1).

*Table 1. Results of multilevel models explaining academic engagement of grade 6 – overall BNST*

| | Null model | | Learning environment model | | Learning environment model (value added) | |
|---|---|---|---|---|---|---|
| | Coefficient | SE | Coefficient | SE | Coefficient | SE |
| Fixed effect | | | | | | |
| Intercept | 3.614** | 0.037 | 3.611** | 0.032 | 3.560** | 0.028 |
| Overall BNST | | | 0.440** | 0.025 | 0.301** | 0.022 |
| Nationality (0=Dutch) | | | | | -0.004 | 0.036 |
| Sex (0=boy) | | | | | 0.082** | 0.029 |
| Language (0=Dutch) | | | | | 0.001 | 0.021 |
| Prior engagement | | | | | 0.341** | 0.020 |
| Random effect | | | | | | |
| Level 2 variance | 0.04 | 0.012 | 0.028 | 0.009 | 0.013 | 0.005 |
| Level 1 variance | 0.29 | 0.016 | 0.202 | 0.011 | 0.142 | 0.008 |
| Deviance | 1215.768 | | 952.274 | | 683.014 | |

* p < .05, ** p < .01

Additional analyses showed that the need satisfaction dimensions played a significant role (31% explained variance between students and 27% between learning environments), even when ethnic-cultural background, sex of child and prior engagement was controlled for (additional explained variance by the BNST dimensions was respectively 12.9% and 13.5%; see Table 2). This finding underpins the importance of students' basic need satisfaction of autonomy, competence and relatedness by the teacher, even after controlling for prior engagement. Furthermore, the satisfaction of the need for competence and the need for relatedness by the teacher were found to be most important in explaining differences in academic engagement. Additional analyses showed that they explained, on their own, respectively 25.7% and 22% of the variance in academic

engagement between students and respectively 27% and 21.6% of the variance between learning environments. In addition to the satisfaction of the previously mentioned basic needs, the satisfaction of the need for autonomy was important as well, but to a lesser extent. The degree to which this need was satisfied explained, on its own, respectively 16.5% of the variance in academic engagement between students and 24.3% of the variance between learning environments. Combined with results of the explained variance by all three basic needs dimensions together, there is evidence for important joint effects of the BNST dimensions, although unique effects of each of them are also visible.

*Table 2. Results of multilevel models explaining academic engagement of grade 6 – BNST dimensions*

| | Null model | | Learning environment model | | Learning environment model (value added) | |
|---|---|---|---|---|---|---|
| | Coefficient | SE | Coefficient | SE | Coefficient | SE |
| Fixed effect | | | | | | |
| Intercept | 3.614** | 0.037 | 3.608** | 0.032 | 3.557** | 0.028 |
| BNST-Autonomy | | | 0.066* | 0.027 | 0.074** | 0.023 |
| BNST-Competence | | | 0.223** | 0.026 | 0.138** | 0.023 |
| BNST-Relatedness | | | 0.147** | 0.024 | 0.090** | 0.020 |
| Nationality (0=Dutch) | | | | | -0.003 | 0.036 |
| Sex (0=boy) | | | | | 0.085** | 0.029 |
| Language (0=Dutch) | | | | | 0.000 | 0.021 |
| Prior engagement | | | | | 0.335** | 0.020 |
| Random effect | | | | | | |
| Level 2 variance | 0.04 | 0.012 | 0.027 | 0.009 | 0.013 | 0.005 |
| Level 1 variance | 0.29 | 0.016 | 0.198 | 0.011 | 0.141 | 0.008 |
| Deviance | 1215.768 | | 939.136 | | 680.407 | |

* p < .05, ** p < .01

Multilevel analysis with cross-level interactions (products of student characteristics and BNST dimensions) revealed only a significant interaction effect between prior academic engagement and the satisfaction of the need for competence by the teacher, indicating that the higher the students' prior academic engagement, the stronger the effect of the basic need satisfaction of competence by the teacher (see Figure 1). The analysis also indicated that, in particular for students with rather high levels of prior engagement, their academic engagement will be more in line with their prior engagement, when they experience a high level

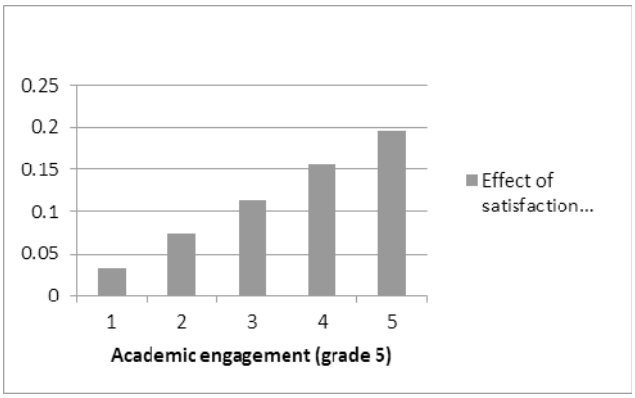


*Figure 1. Size of 'basic need satisfaction of competence by the teacher' effect as a function of prior academic engagement*

of competence (induced by their teacher). However, when they experience a rather low level of competence, their engagement will be less in line with their prior engagement.

No significant cross-level interactions between the BNST dimension and other student characteristics were found, indicating that the effect of this dimension applies to different groups of students irrespective of their gender or different ethnic-cultural background. The effects of all other BNST dimensions applied in the same way to boys and girls, to children with high and low prior engagement, and to children with different ethnic-cultural backgrounds.

With respect to the overall basic need satisfaction by the teacher, a significant interaction was only found with the language spoken at home, indicating that the overall basic need satisfaction is of lesser importance to the academic engagement of students who speak less or no Dutch at all at home (see Figure 2).

## CONCLUSION AND DISCUSSION

This study is one of the first studies in which the satisfaction of the three basic needs, as recognized by SDT, was investigated in a natural teacher-student relationship educational context and were basic need satisfaction was related to academic engagement, focusing on longitudinal, unique, and joint effects of the BNST dimensions. In addition, attention was paid to possible differential effects of the BNST dimensions.

The findings highlight the importance of BNST dimensions to students' (development of) academic engagement at the end of primary education. Evidence was provided supporting the Basic Psychological Needs Theory which postulates that the satisfaction of the basic psychological needs positively affects motivation

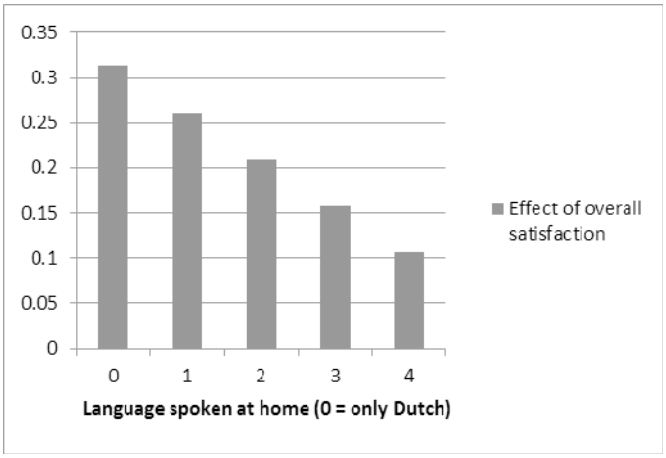


*Figure 2. Size of 'overall basic need satisfaction by the teacher' effect as a function of language spoken at home*

and engagement because they provide the energy and direction for students to engage in activities that satisfy these needs (Deci & Ryan, 2011). In addition, the results of this study revealed that all BNST dimensions are important for the (development of) students' academic engagement. This is in accordance with the assumptions of BPNT and previous (experimental) studies and delivers evidence for the importance of the SDT-BPNT perspective and the fulfillment of all three basic psychological needs in relation to further understanding and supporting students' academic engagement. In addition to prior engagement, for students to become academically (more) engaged they need to feel competent (because this provides them the energy for learning), to feel related (because this helps them to follow the direction and support of the teacher to engage in activities) and to feel autonomous (because this affects their willingness to devote energy and time to schoolwork). For education, this implies that teachers should provide support to students that lets them experience feelings of competence and autonomy and teachers should also be involvement with students to provide them with experiences and feelings of relatedness. Teachers' perceived support and involvement help students to fulfill all their basic psychological needs in order to get or maintain academically engaged. Further research should investigate how teachers can help and support students to satisfy their basic psychological needs. We are in need of a further understanding of the basic features relevant to need support and the lack thereof.

Our study also challenges current SDT and BPNT. For example, large joint effects of the three BNST dimensions at the end of primary education and differences in the strength of the effects of the different BNST dimensions were found. Findings indicated stronger effects of the basic need satisfaction of competence and of involvement as compared to the satisfaction of the need for

autonomy, while SDT stresses the pivotal role of autonomy and self-determination. However, our findings are also in agreement with Deci et al. (1991) who stress that student motivation, in general, will be enhanced or facilitated by support for competence and relatedness. In addition, although our study revealed that basic psychological need satisfaction mattered for all students irrespective of their gender, background, or prior engagement, we found evidence that need satisfaction of competence by the teacher was more important for prior highly engaged students and that overall need satisfaction was less important for students speaking scarcely or no Dutch at home. At this moment, it is unclear if our findings are related to the students' age/school level and/or the educational system. Additional research on older student populations and other school levels is needed to investigate the generalizability of these findings. However, our finding related to the higher sensitivity of prior highly engaged students to competence need satisfaction is in agreement with studies of Schüler et al. (2010) on older students (undergraduates and university students) within the area of sport activities. This might support the generalizability of this finding.

Our finding regarding the lower sensitivity of students speaking scarcely or no Dutch at all at home in relation to overall basic needs satisfaction by the teacher is less clear and seems not to be in line with findings indicating a higher sensitivity of at-risk students and students with a foreign background (D'Agostino, 2000; Scheerens, 2007; den Brok et al., 2010). The rather small amount of students speaking scarcely or no Dutch at all at home (about 11%) or with a foreign background might explain the lack of differential effects with regard to these student characteristics. It is also possible that the students who speak scarcely or no Dutch at home in the sample of this study are not very representative for students usually labeled as at-risk or with a foreign background.

In conclusion, our study showed that SDT and BPNT offer with their concepts of need satisfaction an important perspective to the study of the (development of) academic engagement of students in relation to students' perception of teacher support and involvement in the learning environment. The findings add evidence that support the underlying mechanism postulated by SDT and BPNT. Indeed, BPNT provides explanatory mechanisms for understanding how teacher-student interactions are associated with students' academic engagement. There is already some evidence in a recent study of Opdenakker et al., (2012) that need satisfaction can serve as a (partial) mediation of (students' perceptions of) learning environment characteristics. Thus, SDT and BPNT offer fertile ground for new explorations in teacher-student interaction experiences and their relation to students' academic engagement. By further enlarging our understanding of the functioning of the basic psychological needs, we will be able to offer teachers cues that help them to evaluate what aspects of the learning environment and social context will significantly enhance versus undermine students' academic engagement and effectiveness within the context.

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# 12. LEARNING ENVIRONMENTS IN HIGHER EDUCATION

*A Study of Environmental Education Programming in Teacher Education*

## INTRODUCTION

This chapter describes the importance of psychosocial learning environments in education, and how these can help us in achieving our environmental learning goals. For many years, environmental education has been discussed with reference to the sciences often ignoring the ecology of "human societies and cultures (and their technologies) within physical communities" (Zandvliet & Brown, 2006, p. 207). Unfortunately, this has led us to ignore the cultural behaviours now overwhelming the viability of natural systems (Bowers, 1999). Knowledge of the science behind nature is important, but of equal value is knowledge of the socio-cultural values that we place upon or associate with nature. So, in this respect environmental education can also be viewed as a distinct pedagogical approach and context that also acknowledges the quality of the interpersonal relationships among people and their communities.

Wright (2006) argues that universities produce students who are incapable of dealing with our current environmental issues due to the premise that universities often do a poor job of illustrating the connections between humans and the natural environment that they live in. The current state of the planet, as well as its future is gaining ground in the political arena, and higher education is now being depended upon to facilitate change to a more sustainable way of life (Chalkley, 2006). Universities and colleges most valuable contribution may be to produce graduates who think sustainably so that they may take this knowledge into the workplace, and into society as a whole (Chalkley, 2006). Unfortunately, "the overarching objective of creating an ecologically literate, motivated and engaged corps of graduates [in higher education] remains elusive" (Havlick & Hourdequin, 2005, p. 386). If environmental education is only emphasized in K-12 schools, we may have to wait thirty years for a sustainable movement to finally take effect.

A common tool to evaluate the effectiveness of a program are measures of student achievement, such as test scores. A major reason for the use of test results in program evaluations is 'top-down' in origin, coming from government, state or provincial ministries/departments of education. While there is no argument that students must be tested on their skills learned, in assessing student achievement alone for program evaluations we may risk the chance of describing the human qualities that make education a worthwhile experience for students (Fraser, 2001). The study of learning environments has the possibility of improving assessment

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norms by providing another aspect of the program that can be evaluated. Trends in learning environment research have indicated to us that a positive learning environment as perceived by the student is a predictor of greater learning (Fraser, 2012), and that place-based environmental education settings tend to have positive learning environments as perceived by students (Zandvliet, 2012). Currently, there does not exist a reliable measure to describe learning environments in environmental education courses or programs. This led us to pose three research questions to focus our efforts to understand the relationship between learning environments and environmental learning in post-secondary education:

- Can aspects of the learning environment in post-secondary classrooms using place-based and constructive pedagogies be validly measured?
- What differences exist between actual and preferred environments in post-secondary classrooms using place-based and constructive pedagogies?
- How might post-secondary learning environments using place-based and constructive pedagogies be characterized or described?

This chapter, reports on an alternative methodology to evaluate environmental education programs; one that acknowledges important psychosocial factors in educational settings (i.e. learning environments) that influence students' learning. The next section gives a brief description of place-based education, learning environment research, and environmental learning. After providing details of the methods used in this research, we discuss our interpretations of our results and discuss how learning environments research has important insights for the field of environmental education.

## ENVIRONMENTAL EDUCATION

Environmental education is a constantly evolving concept (Sauvé, 2005). Sauve mapped out environmental education and identified, fifteen currents in the field. Some have been around since the early years of environmental education in pedagogy in the 1970s, and others having emerged much more recently. The value of each current depends primarily on the worldview that is at its foundation and the "unique characteristics of each pedagogical situation including objectives pursued and the context of intervention" (Sauvé, 2005, p. 12). These established currents are most commonly associated with human-environment relationships, and they all share a commonality, they have failed in breaking the barriers to being fully integrated in school curriculum.

An early and popular current of environmental education could be described as a *naturalist* one by its centeredness on the relationship between humans and nature. This characteristic came under critique during the 1980s as the sustainable development movement began to garner strong support (Sauvé, 2005). The critique was that environmental education had preoccupied itself with human-nature relationships and had ignored the social and economic factors associated with the environment. By the end of the 1980s sustainable development had become one of the stronger currents within environmental education.

## PLACE-BASED EDUCATION

The concept of place-based education is an evolving curricular and instructional approach that over the years has been referred to as community-oriented schooling, ecological education, and bioregional education (Woodhouse & Knapp, 2000). Due to the multidisciplinary aspect of place-based education it is difficult to find a clear and concise definition for it. For the most part, this approach is "designed to help students learn about the immediate surroundings by capitalizing on their lived experiences" (Knapp, 2005, p. 278). It features a multi-disciplinary and infused approach in its application.

Early work by Sobel (1993, 1999, 2004) has described the concept of place-based education but since then it has been expanded on and developed by others in community contexts (Hutchinson, 2004), eco-literacy (Orr, 1994), experiential learning (Woodhouse & Knapp, 2000), and critical pedagogy (Gruenewald, 2003). As Gruenewald (2003) claims, place-based education does not have its own theoretical tradition; rather it is an assimilation of theories belonging to experiential learning, contextual learning, problem-based learning, constructivism, outdoor education, indigenous education, environmental education, as well as others that share in emphasizing the value of learning from one's own community or region. Inherent in all of these approaches are an increasing importance of interpersonal relationships in the educational experience.

One of the greatest appeals of place-based education is the ability it has "to adapt to unique characteristics in particular places" (Smith, 2002, p. 584). This trait of place-based education makes it a strong tool to "overcome the disjuncture between school and children's lives that is found in many classrooms" (Smith, 2002, p. 585).

Smith (2002), and Woodhouse and Knapp (2000) have both acknowledged common forms and characteristics of place-based education. Smith (2002, p. 593) identifies a number of common place-based education forms: (a) surrounding phenomena are the foundation for curriculum development, (b) an emphasis on students becoming the creators of knowledge rather than only consumers of knowledge created by others, (c) students' questions and concerns play central roles in determining what is studied, (d) teachers act primarily as co-learners and "brokers" of community resources and learning possibilities, (e) the walls between the community and school buildings are crossed frequently, and (f) student work is assessed based on its contributions to community wellbeing and sustainability. Woodhouse and Knapp (2000, p.1) claim that place-based education have the following common characteristics: (a) the curriculum content is multidisciplinary; (b) the curriculum goals are broader than just "learn to earn;" and (c) the curriculum integrates self, others, and place and includes ecological, economic, multigenerational, and multicultural dimensions.

Interestingly, Knapp (2005) makes the comment that "all five patterns form a conceptual umbrella commonly called experiential learning, because they are situated in the context of community life and involve active student engagement" (p. 280). A second look also reveals that environmental learning is a common

pattern among themes. Sobel (2004, p. 7) best explained place-based education and its relationship with environmental learning as:

> The process of using local community and environment as a starting point to teach concepts in language arts, mathematics, social studies, science, and other subjects across the curriculum. Emphasizing hands-on, real-world learning experiences, this approach to education increases academic achievement, helps students develop stronger ties to their community, enhances students' appreciation for the natural world, and creates a heightened commitment to serving as active contributing citizens. Community vitality and environmental quality are improved through the active engagement of local citizens, community organizations, and environmental resources in the life of the school.

## LEARNING ENVIRONMENTS

From learning environment research, there is compelling evidence to suggest that the classroom environment has a strong effect on student outcomes (Fraser and Rentoul, 1980; Wang, Haertel & Walberg, 1993; Fisher & Khine, 2006; Fraser, 2012). Unfortunately, academic institutions have tended to place an emphasis on student achievement rather than on the environment that influences it (Fraser, 2001). A strong argument to support this is that for the most part, educational programs have been institutionalized by top-down, politically driven movements that have dictated how and what learning should look like (Noble, 1998), with no regard for the learning environment (Fraser, 1998).

The development of learning environment research can be traced back to the work done by Kurt Lewin, Henry Murray, Herbert Walberg and Rudolf Moos (Fraser, 2012). Several decades later, the work of such people as Walberg (Walberg & Anderson, 1968) and Moos (1974) adapted the work of Lewin (1936) and Murray (1938) to the classroom environment. Moos' (1974) development of social climate scales for human environments such as work, school and health care settings, and Walberg and Anderson's (1968) development of classroom environment assessments for the *Harvard Project Physics program* created the foundation for what is now a forty-year old research tradition.

Over the years LER methods have grown considerably, now boasting an array of widely applicable questionnaires that have been developed, tested and validated in a variety of settings and in a variety of countries (Fisher & Khine, 2006; Fraser, 2012; Zandvliet, 2012; Dorman, Fisher & Waldrip, 2006; Wubbels & Brekelans, 2012; Tal & Morag, 2007). Murray (1938), when referring to the study of the learning environment, used the term *alpha press* to refer to an external (outside) observer's perspective of a learning environment, and the term *beta press* to refer to the insiders' (internal) perspective, or better to put the participants of the learning environment under investigation. Stern, Stein and Bloom (1958) further developed Murray's (1938) ideas by arguing that the beta press could be separated between an individual's insider perspective of the learning environment (private beta press), and that of the whole insider group's perspective (consensual beta

press). In current practices in LER, private beta press is recognized as data collected from interviews and focus groups with constituents of the learning environment (qualitative research methods) and data collected on the learning environment from surveys and questionnaires (quantitative research methods) representing consensual beta press (Zandvliet, 2012).

The study of learning environments is a growing field of academic inquiry and although it is most prevalent within science education, it has application possibilities in many different areas and is particularly applicable to inter -- or multi-disciplinary fields of study such as environmental or place-based forms of education. Today, the study of learning environments has a valuable role to play: in pre-service teacher training; professional development, evaluation of new curricula and generally as an important field of inquiry in its own right -- the description of a valuable component of educational experience. It is for this reason a central assertion of this research is that learning environment research has much to offer in the description of the educational experience in place-based, environmental education settings in higher education.

## METHODS

This study utilizes a mixed methodology that incorporates both qualitative and quantitative research methods. The selected participants for this study were two post-secondary environmental education courses at a Canadian University. The courses were part of the Professional Development Program (PDP), which participants take as part of their teaching certification. The two PDP courses each had 24 students; one took place in an urban and semi-residential setting (Case 1), and the other in a rural and residential setting (Case 2). Within these courses the environment is looked at either as a subject, an object or a topic, and educators are asked to consider the place for environmental issues across diverse curricula and practices. All students and teachers voluntarily participated in the study, and the relevant university research ethic protocols were followed. Data collection protocols included administration of quantitative surveys (PLACES), focus groups and participant-researcher observations.

The questionnaire selected for this study was one that had been tested and proven to be reliable in measuring learning environments in secondary classrooms (Zandvliet, 2007). As the questionnaire is not time or age sensitive, the questionnaire was easily adapted for use in post-secondary classrooms. The questionnaire is known as the Place-based and Constructivist Environment Survey (PLACES). The eight scales incorporated into PLACES were adapted from the previously referenced inventories and were derived from data that emerged from a series of focus groups with environmental educators. PLACES is a compendium on constructs that were viewed by place-based and environmental educators as being most important for their practice (Zandvliet, 2012). These eight scales are listed in Table 1.

*Table 1. Sample statements from the selected scales for the PLACES questionnaire*

| | |
|---|---|
| Relevance/Integration (RI) | I want my lessons to be supported with field experiences and other field-based activities. |
| Critical Voice (CV) | It would be ok for me to speak up for my rights. |
| Student Negotiation (SN) | I want to ask other students to explain their ideas and opinions. |
| Group Cohesion (GC) | I want students to get along well as a group. |
| Student Involvement (SI) | I want to ask the instructor questions when we are learning. |
| Shared Control (SC) | I want to help instructors plan what I am to learn. |
| Open-Endedness (OE) | I want opportunities to pursue my own interests. |
| Environmental Interaction (EI) | I want to spend most of the time during field local trips learning about my environment. |

The PLACES questionnaire also has two forms: 1) Actual and 2) Preferred. The Actual-PLACES form of the questionnaire has students reflect on their experiences in an actual learning environment, while the Preferred-PLACES has the students contemplate what their ideal, or preferred, learning environment would feel like. As an example, the ninth statement in the Preferred-PLACES that students are asked to contemplate is: '*It would be all right for me to express my opinion*'; the ninth statement in the Actual-PLACES that students are asked to reflect on is: '*It's all right for me to express my opinion*'. As you can see the statements are similar but one is in the future conditional (preferred) while the other is written in the present tense (actual). These two forms of the PLACES questionnaire have value on their own and when together. The Preferred-PLACES can be used as a diagnostic tool at the beginning of a course to understand the expectations of students. The Actual-PLACES can act as an evaluation tool at the end of their course to see if their students had enjoyed their learning environment through the course. Together, these two forms of the PLACES questionnaire can be compared with one another to see if a student's preferred learning environment was actually the learning environment they were in, or better put they can aid in the research into person-environment fit interactions. For more information on the PLACES questionnaire please refer to Zandvliet (2012).

On the first day of the course each student was asked if they would complete the Preferred-PLACES questionnaire, and on the last day of the course each student was asked if they would complete the Actual-PLACES questionnaire. To evaluate the questionnaires each statement was coded, following a Likert-type scale, from

*never* (1) to *always* (5), and if a student left a statement unanswered the statement was rated as equivalent to a neutral score (3). Validity and reliability data were calculated for this sample.

Further data was collected qualitatively via focus groups and followed a phenomenograhic study structure. A phenomenography, as defined by Marton and Booth (1997), aims to document how people understand, experience and assign meaning to a phenomenon. By doing so, the researcher attempts to examine the relationships between the subject (participant) and object (phenomenon), therefore recognizing each person's perspective on their experience with the phenomena (Loughland, Reid & Petocz, 2002). The argument for this was that the information gathered from the students during focus group sessions could be compared with the data gathered from the questionnaire to corroborate its findings and to deepen these descriptions of educational experience. To interview a sample that would be representative of the class, five students (approximately 20% of the class total) were asked to volunteer from each class to take part in a focus group. In order to remain random in my selection of the focus group, I took the first five students who volunteered. During interviews the researcher recorded detailed notes during the course of the discussion. The quotes from the students in this project are not the exact words but have been paraphrased while trying to remain as accurate to the students' original comments. Focus groups were conducted at the beginning of a course and again at the end. At the beginning of the course, I asked the focus group two open-ended questions:

– What were your reasons for taking this course?
– Do you have any expectations of this course?

At the end of the course, I then asked the focus group two other open-ended questions:

– Taking into consideration your expectations at the beginning of the course, did this course meet those expectations?
– Is there anything else you would like to comment on with regards to this course?

These questions were selected based on their generality and openness, therefore allowing the opportunity for any of the eight scales to be discussed in the focus group without having to be asked directly.

## RESULTS

In this section we present the results from observations as a participant-researcher in the two courses, as well as the results from the administration of the PLACES questionnaire and the focus group interviews. They are presented within the context and description of each course section, studied to detail, a concise case summary of each study location.

*Description of the Learning Environment*

*Non-Residential format EE field school.* The first day of class aimed to create a comfortable group dynamic among the newly introduced class. The instructors had asked students to bring in an environmental artifact, which was to be something that belonged to them, whether it be a story or an object, that was special to them and reflected their connection to the environment. Students were then asked to present this artifact with their classmates. It should be mentioned that the room was organized in a way that everyone could see each other's face and did not place the instructors in an authoritative position. The next activity activity had the students work in groups with the objective of deciding when their class assignments were due. This example of sharing the control of the course structure took some students by surprise. The activity that followed was one that had the students working in groups again to take part in a scavenger hunt. The hunt had the groups find out information on their local environment and surroundings. Afterwards each group was asked to present what they had found on the scavenger hunt.

From this researchers' own experience, activities like these ones just mentioned do not occur in post-secondary classrooms. While it could be argued that in a large two hundred student first year undergraduate course these types of "bonding" activities are just not possible, this does not mean that the activities are not practical. While there was some discussions on environmental educational theory, the majority of the first day of class had been used as a 'get to know', creating community session as were the next few days. The course took a field trip together, learning about their local port on their way to a camp/lodge site where they stayed the night. At the camp/lodge site a number of EE learning activities took place, such as lessons from Project Wild and Project Wet. At the end of the first of the three day set weekend classes, the course had emphasized the important of community, and encouraged discussion between students and their peers. Reflective of this, a student in the focus commented:

> After the field trips and their experiences I missed the people in our class and so I looked forward to each class to reconnect …

The following 5 weeks of the course followed a similar format, an emphasis on group work and discussion whilst participating in outdoor activities visiting local Metro Vancouver parks, water reservoir, sewage plant and garbage dumps, with each setting having its own associated lesson plan. Each week was treated as a module that would focus on a specific environment, natural or human-made, that could act as a learning environment for K-12 educational programming. .It was one of these activities that had one of the students comment:

> The selection of experiences chosen by the instructors had a lasting effect. I had not expected to be as affected as I realize now at the end of the course. I plan to go back to the places we visited.

From our perspective, the settings chosen to correspond with specific activities was effectively thought out by the instructors because of the apparent effect it had on the students. Even though some of these students had previously been to the

selected outdoor settings, it was the context that they were put in by the instructors that seemed to stimulate reflective thought. It seemed to have struck a chord in some students, as this one student commented:

> Before this I was a consumer with little consideration for the environment; this class has now changed who I am, and how I view the planet. I was so affected by the experiences we had that I wish the class was longer so I could have time to absorb it all.

Reference to the portfolio exercise was an example of the open-ended nature in the course assignments. The final assignment was a journal, or alternatively a portfolio, which was to be created by the students to embody what they had learned in the course. The portfolio could take any form. When all was said and done, the students' portfolios were as unique as each student's character. The presentations of the portfolios took place at a camp/lodge at the end of the course, much the same way as the course had begun. One student commented:

> The environment created provided open learning and provided me with the freedom to learn. I realized that environmental education has the potential to help children and adults understand where they are. I realize now that environmental education is my thing.

*Residential format EE field school.* The Haida Gwaii-based PDP Summer Institute in Environmental Education began 14 days of intense programming with students setting up their camping tents inside a secondary school in Queen Charlotte Village, which was to be their 'home' for the duration of the course. The community building in this scenario was evident. The first day ended with a class get-together in the evening playing a name game for everyone to introduce themselves and a small discussion of the course's syllabus.

The next few days of the course incorporated similar activities and exercises to those of the Vancouver-based course. The environmental artifact and the assignment deadline activity played a similar role in helping to create a good group dynamic. Of course in this setting, because they lived together these two activities were not the only way for students to get to know one another at a personal level. For this reason it was not surprising to see that these students had scored Group Cohesion as their highest scale in the Preferred-PLACES questionnaire.This led a couple of students, when reflecting back, in the final focus group to say:

> The living accommodations at the school created a type of community with everyone in the class. I felt it was a lesson in being tolerant and understanding of other people.

> I learned a lot that I did not expect, things that I had not associated with environmental education, such as group dynamics through spending time together in our living accommodations at the school as well as on our camping trips.

Although the students had got to know one another quite well after the first few days, they were still strangers; strangers to the very environment they were living in, Haida Gwaii. The activity that was chosen to remedy this was called 'community mapping'. This exercise had also been an activity included in the Vancouver-based course, but with this course it had a different impact on the students, and a much more powerful one on the learning environment. The community mapping activity entailed groups collecting information on the dynamics of the community. To do so the groups spent the whole day in their given community to collect information on the community whichever way they pleased. From the perspective of a participant-observer, there was a visible change in the comfort zone of the students in their new environment before and after this activity. Students returned at the end of the day with stories, information and objects from their respective communities, and were energetic to present and recount how their day went. This was mentioned by one of the students in the focus group:

> The community mapping exercise was the highlight for me of the course because I no longer felt like an outsider in the community, which made my stay in Haida Gwaii much more enjoyable and memorable.

Connecting to the people living in Haida Gwaii, especially the Haida Nation themselves, was one of the objectives set out by the instructors. When possible, the instructors referred to examples in the Haida culture or in Haida Gwaii when discussing course material. When talking about activities, every excursion that took place occurred in a place that held historic and present value to the Haida people:

> While I had taken courses on First Nations history and culture, I feel I gained a deeper understanding of the Haida people because of this course.

The relationship between students and instructors was a close one because of the amount of time that was spent with each other. That being said, being social everyday can be tiring but the instructors always appeared enthusiastic. As one student commented:

> I felt comfortable with the [instructors]. They were personable; they never lectured and always treated me as their equal.

With regards to how this translated into how the class was taught, it appeared students felt free and comfortable. There was not a feeling that you were being judged or graded on every move you made or every comment or question you asked. This openness allowed for some great discussions not only at times when the class was indoors but also when they were outdoors. Personal freedom was also evident in the group and in individual exercises that were part of the course. As an example, one group assignment was to read over an article, and then present and summarize the article's main points but no one was told how they were to present it. Students took advantage of this and came up with some memorable presentations, such as a rap song and a Shakespearean-like play. A few students commented on this flexibility in the class:

> I like how the instructors did not push students and did not act as an authority figure. They were supportive and I felt like they were more colleagues than instructors, and they allowed the students to figure things out on their own.

> I liked how the instructors allowed the students to explore things on their own, were knowledgeable and were always accessible.

Once again, the end project was a portfolio that could take any form. While there was some curious confusion with what exactly the portfolio could be. In the end this brought about unique and personal interpretations of what it was that they learned.. A parting comment made to me by one of the students in the focus group acknowledges this unique learning environment:

> The environment created by the instructors and Haida Gwaii epitomizes what environmental education is to me. Now that I think of it, this class exceeded my expectations.

## QUANTITATIVE RESULTS: THE PLACES QUESTIONNAIRE

In addition to the qualitative comments from students made in the interviews and focus groups of this study, an attempt to quantify the learning environment was made through administering the Place-based and Constructivist Environment Survey (PLACES) to both classes in this study. Our results indicated that the calculated values from the Cronbach alpha and discriminant validity from the PLACES responses in Case 1 and 2 indicated that the eight constructs in both forms of the questionnaire demonstrate acceptable within scale reliabilities but also validly measured eight distinct constructs (Table 2). For our purposes, the PLACES questionnaire does validly measure learning environments in post-secondary classrooms that use place-based and constructive pedagogies.

*Table 2. Calculated values for Cronbach alpha and discriminant validity for each scale*

| | RI | CV | SN | GC | SI | SC | OE | EI |
|---|---|---|---|---|---|---|---|---|
| Cronbach Alpha | 0.76 | 0.72 | 0.76 | 0.70 | 0.70 | 0.86 | 0.73 | 0.70 |
| Discriminant Validity | 0.14 | 0.21 | 0.38 | 0.23 | 0.38 | 0.29 | 0.24 | 0.30 |

As noted, the PLACES questionnaire allowed students to rate their perceptions of the learning environment in their courses along eight constructs deemed important for student learning in environmental education settings. Students responded on a five-point Likert scale and he results indicated that students rated

most aspects of the learning environment very positively. The highest rated aspects of the environment in both settings included factors such as Group cohesiveness, Community relevance and integration and environmental interaction. The factor 'Shared control' was rated as lowest in importance for both course locations.

Mean scale responses from Case 1 (Figure 1) and Case 2 (Figure 2) from the Preferred- and Actual-PLACES questionnaires also indicated that there was little or no large differences between preferred and actual learning environments in both settings. The actual learning environment that the two instructors created in Case 1 and 2 (using place-based and constructive pedagogies) met or closely paralelled students' expectations of their preferred learning environment on many of the constructs measured.

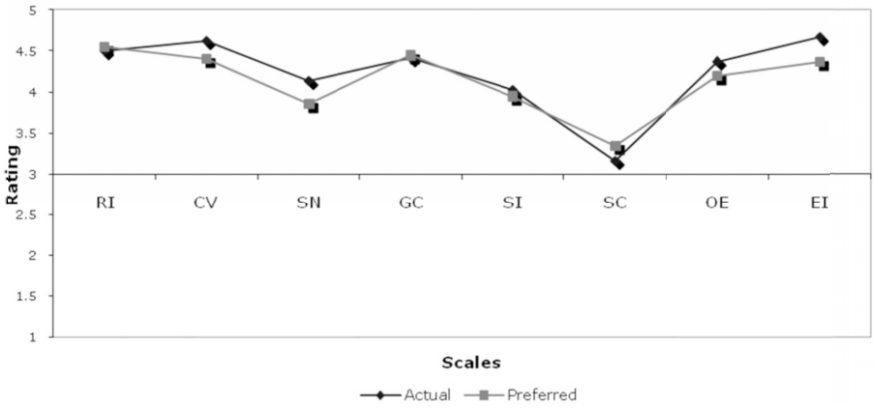


*Figure 1. Learning environment comparisons from Case 1 Preferred- and Actual-PLACES questionnaires*

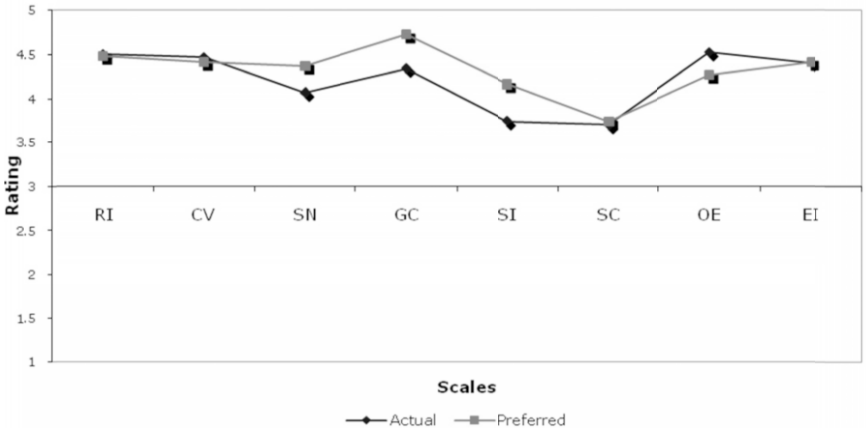


*Figure 2. Learning environment comparisons from Case 2 Preferred- and Actual- PLACES questionnaires*

## DISCUSSION

### *Measuring and Comparing Learning Environments*

One questions asked in this research was 'can aspects of the learning environment in post-secondary classrooms, using place-based and constructive pedagogies, be validly measured quantitatively?'. After reviewing the data collected by the PLACES questionnaire and triangulating it with the information collected from the focus groups and participant-researcher observations we believe that the PLACES questionnaire can validly measure learning environments in post-secondary classrooms that use place-based and constructive pedagogies. Besides the congruence between the responses from the questionnaires, their corresponding focus groups and participant researcher observations, there are also similarities between the responses to the Preferred-PLACES questionnaire in each course.

While this questionnaire was not created to compare learning environments between different courses, results from the Preferred-PLACES yielded some interesting similarities. The most interesting is that both courses rated Shared Control as the lowest of all eight scales. Further, the scales Critical Voice, Group Cohesion and Environmental Interaction were highly rated in both courses. Figures 1 and 2; they all seem to share the same 'peaks' and 'valleys' in their data sets. These similarities and the corresponding student commentary indicated to us that this questionnaire has assisted us in validating and evaluating these eight constructs of a learning environment in environmental education settings.

While the total sample size was comparatively small to statistically compare preferred and actual scores, the sample size was suitable to test for reliability and validity of the constructs in each form of the questionnaire. The calculated values from the Cronbach alpha and discriminant validity indicated that not only did the eight constructs in both forms of the questionnaire demonstrate acceptable within scale reliabilities but also validly measured eight distinct constructs. With the strength of having statistical reliability and validity, and the commonalities between questionnaire, focus groups and observation, as well as the similarities between courses in their Preferred-PLACES results we are quite confident that the PLACES questionnaire does validly measure learning environments in post-secondary classrooms that use place-based and constructive pedagogies.

A second research question asked 'what differences exist between actual and preferred learning environments in post-secondary classrooms using place-based and constructive pedagogies?'. Current trends in learning environment research has noted that preferred and actual learning environments had a much closer fit in interdisciplinary, outdoor-based learning environments than single disciplined, classroom-based learning environments (Zandvliet, 2012). Having this in mind, it was believed that the results from these two outdoor-based courses would agree with this trend.

If we first examine the Vancouver-based course, the mean scale responses from the Preferred- and Actual-PLACES questionnaire were quite similar. Of the eight scales, only three of the scales (relevance/integration, Group Cohesion, and shared control) had lower scores on the Actual-PLACES questionnaire than those from the

Preferred-PLACES, and their differences were only slight. The remaining five scales (Relevance/Integration, Critical Voice, Student Negotiation, Group Cohesion, Student Involvement, Shared Control, Open-Endedness, and Environmental Interaction) had higher mean scores in the actual questionnaire than that of the preferred. After looking over the results, it would appear there is little difference between the preferred and actual learning environment. The actual learning environment that the two instructors created using place-based and constructive pedagogies not only met the students' expectations of their preferred learning environment but in some aspects exceeded them.

In the results from the Preferred- and Actual-PLACES questionnaires, from the Haida Gwaii-based PDP Summer Institute in Environmental Education, five scales (Student Negotiation, Group Cohesion, Student Involvement, Shared Control, and Environmental Interaction) had lower scores in the Actual-PLACES questionnaire than those from the Preferred-PLACES, and three of the scales had higher scores (Relevance/Integration, Critical Voice, and Open-Tenderness). The range in the differences of these five scales was minimal, 0.02 (Environmental Interaction) to 0.42 (Student Involvement). To give this some scope, there is a general trend in current learning environment research showing substantially large gaps between preferred and actual learning environments in classroom-based courses (Zandvliet, 2007), much more than we see here in this field-based course. Taking this a step further, if we look at all eight scales they were on average 0.11 lower in the actual learning environment than in the preferred learning environment.

*Describing Learning Environments*

The third and last question posed in this research was 'how might post-secondary learning environments using place-based and constructive pedagogies be characterized or described?'. In the focus groups that took place at the end of the course, a number of the students in the Vancouver-based PDP course made comments that could be perceived as referring to 'personal growth', such as "it provided the wake up call"; "what it did was change my outlook on life"; "[it] moved me" ; and "it was an awakening" . In contrast, the students in the Haida Gwaii-based course made comments of having gone through 'pedagogical growth', even though a number of students at the beginning of the course had commented they had taken this Haida Gwaii-based course for reasons that could be construed as 'personal growth'. This is an important difference between these two courses especially since they were the similar courses in content but in different environmental settings. The Vancouver-based course visited local water reservoirs, parks and dumpsites to name but a few. These environmental settings exposed the students to the sources and discharges that are a part of their daily life. As if they had been given a new sense, a 'sense of awareness'. This is what I believe brought about the comments on personal growth in the Vancouver-based students. The environmental settings in the Haida Gwaii-based course, on the other hand, were most often wilderness settings in attempt to expose students to a foreign environment and in doing so, rather then giving rise to a sense of awareness as with

the Vancouver-based course, these students were 'awoken' to outdoor activities. These activities they could do with their own courses once they finish their PDP program. It is possibly for this reason these students made a number of comments that referred to 'pedagogical growth'.

## CONCLUSION

Research on learning environments and environmental learning is still in its infancy. Thus there is a need to continue similar research to this study but on a wider scale. Reflecting on the three research questions, it appears that we can validly measure learning environments in post-secondary classrooms using place-based and constructive pedagogies with the PLACES questionnaire; further, the use of this questionnaire (coupled with interviews and focus groups) assisted us in determining the unique characterization and description of different post-secondary learning environments. Our questionnaire was demonstrated to be statistically valid and reliable tool: this may provide opportunities for future research using the PLACES questionnaire in similar place-based classroom environments.

With regards to environmental learning, comments made by students in the focus groups indicate that they are serious about environmental education in their future classrooms. Unfortunately there is a working reality for teachers whereby the pressures and expectations from top-down legislation suppresses the innovation of environmental learning in the classroom. Special attention needs to be placed on the learning environment of our students if we want to attract and retain students interest in environmental education. As our program engaged prospective teachers, the course activities also served as an opportunity to model some effective strategies that can positively impact the learning environment of students.

Therefore while students in teaching programs may show interest in environmental education, the question that whether this interest is trans-located to their classrooms once they graduate is something that needs to be asked. Further, what role does the post-secondary learning environment play in promoting this disposition towards 'environmental pedagogies'. An improved understanding of the learning environment as experienced in environmental education has the potential to help us understand the effectiveness of environmental education programs (more generally) but also the potential to understand the barriers new teachers may have in promoting environmental learning in their own classrooms.

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HEATHER E. PRICE

# 13. MY FRIENDS MADE ME DO IT

*How Teens' Social Identity Influences Educational Outcomes*

## INTRODUCTION

The social network of an individual is shown to highly condition people's life outcomes (Grannovetter, 1973) – from education to earnings to health outcomes. Although sociologists may differ on their ideas as to how social capital is developed and produced, the educational outcomes from it are clear: the social relations that students have with their friends, peers, parents, and parents' network influence their educational aspirations, attainment, and achievement.

Many social capital explanations do not describe what is actually exchanged in the social capital interactions that produce these educational outcomes. Researchers do not purport, for example, that teens directly exchange their social ties with their teachers for better grades or college aspirations. A more likely explanation could be that the social identity that forms from social relationships produces a shared currency of interaction that influences individual group members' expectations and aspirations of each other (Carbonaro & Workman, 2009); these shared norms and values associate with how an individual teen acts in school and dreams about their future schooling (Harris, 2006). This chapter focuses on how the social identities of teenagers influence educational attainment and aspirations. For teenagers, peer groups are a main source of social identity. Peer groups can be formed in many social contexts – from school to church to family. Relations can be formed at the individual-friend level or at the group-friend level. Most educational peer-effects research focuses solely on peer relationships in schools and ignores the other potential peer groups. This can limit our understanding of social capital and peer effects on schooling outcomes.

This study maintains a very tangible definition of peers as (1) those people that teens name as friends and (2) those other teens that teens associate within their activity groups. With these definitions, and the corresponding data about their friends and activity groups or crowds, I include the context from which they come (school, church, family, etc.). This allows a more thorough analysis of the association of peers with social identity and therefore the mechanisms related to the effects on schooling outcomes can be better understood. In this study, the correlates of personal identity, namely the influence of personal attitudes and beliefs, and parent and school context are also accounted so that an estimate of the influence of social identity can be more precisely estimated.

*D. Zandvliet et al. (eds.), Interpersonal Relationships in Education: From Theory to Practice, 213–229.*

## SIGNIFICANT OTHERS AND SOCIAL IDENTITY FORMATION LITERATURE REVIEW

The literature reviewed for this chapter links two distinct strains of research. There is a long history of education research that discusses the key role of significant others' influence (SOI) on schooling outcomes (Coleman, 1961; Coleman et al., 1966; Hauser, Tsai, & Sewell, 1983; Sewell & Hauser, 1975; Sewell & Hauser, 1980). These findings are robust, but there is still a black-box phenomenon surrounding the findings that fails to explain the mechanisms underlying SOI that produces varied outcomes. Theoretical and empirical research on social identity is used to describe the underlying processes that are likely underpinning these SOI findings (Hogg, 2006; Stets, 2006).

### SCHOOL GOALS AND SIGNIFICANT OTHERS

Early work by Coleman in *The Adolescent Society* (1961) and the Coleman Report (1966) describes the powerful influence that peers have on individual attitudes and behaviors toward schooling, achievement, and attainment. In both studies, Coleman found that high school peer groups do not actively promote or reward academic successes. In further studies, Coleman & Hoffer (1987) again found that school level aggregate aspirations influenced the educational and occupational aspirations and attainment of individual students, and this varied by school sector.

The early findings of Coleman were reaffirmed with the longitudinal "Wisconsin model." Sewell, Hauser, and others (Hauser, Tsai, & Sewell, 1983; Sewell & Hauser, 1975; Sewell & Hauser, 1980) showed that socioeconomic effects were heavily mediated by the influence of significant others' aspirations for the individual. In their studies, SOI were defined as parents, peers, and teachers (Hauser et al., 1983). From these, they concluded that SOI therefore had the opportunity to reduce inequality gaps in educational opportunities afforded children.

Coleman (Coleman & Hoffer, 1987; Coleman, 1990) suggests that alignment between these SOI groups is the key mechanism of social capital on educational outcomes. Alignment, or social closure, between these groups enhances the value and focus, and therefore expectations, sanctions, and rewards, on educational aspirations, student achievement, and pro-school behaviors of students. From Coleman's studies, three conclusions are made: 1) peers influence achievement and attainment, 2) aligned parent and peer values enhance the influence on individual achievement and attainment, and 3) aligned school and individual student values improve these educational outcomes.

Studies do confirm that the aspirations of students are reinforced by the schoolwork attitude and behavior outcomes of peers (Ainsworth-Darnell & Downey, 1998; Carter, 2006; Downey, 2008; Eaton, 2001; Fordham & Ogbu, 1986; Mickelson, 1990; Tyson, Castellino, & Darity, 2005; Wells & Crain, 1994). These contextually based aspirations directly influence educational and occupational attainment, from dropout to college completion rates (Carbonaro & Workman, 2009; Coleman, 1966; Eaton, 2001; Harris, 2006; Hauser et al., 1983;

Sewell & Hauser, 1975; Steinberg, 1996; Ream & Rumberger, 2008; Wells & Crain, 1994). But little work has been done to explain *why* these effects occur; what is the mechanism that works through peer interactions?

## SOCIAL IDENTITY AS THE SOCIAL CAPITAL MECHANISM

Social identity differs from personal identity in that personal identity associates with self-worth and social identity associates with self-efficacy (Stets, 2006). Social identity is based on group comparisons and associating a 'we' prototype identity to the self (Hogg, 2000). Social identity has with it an individual knowledge of belonging to a certain social groups and having emotional attachment to and value for one's own membership to that group (Tajfel, 1972 as cited in Hogg, 2006). Social identity is motivated by uncertainty reduction and the desire to remain part of the 'we' group by upholding the norms and values of the group (Hogg & Terry, 2000). As Cognitive Dissonance theory explains (Hogg, 2006), people experience discomfort when their behaviors dissent from their social identity dispositions and so people act to align their actions with others' expectations.

As persons who crave acceptance and membership in clans/groups (Durkheim, 1951; Mead, 1934), it is in the human conscious and sub-conscious interest to uphold the values of the group by acting within the expected bounds. Teens are expected to affirm their membership to their social network of peers. Peers come from many contexts –school, church, or relatives and neighbor – but they are likely from interactive social contexts and not from isolated places (Smith & Denton, 2005). Through social interactions of exposure and reinforcement in these contexts, individuals learn what attitudes and behavior outcomes are commended or criticized. If a teen's network aligns with the school context, then it would be expected that a school-based identity would associate with better schooling attitudes and outcomes. If their network aligns with non-school contexts, then a non-school social identity would be expected to align with other outcomes and not necessarily improve schooling attitudes and outcomes.

Parents are also central at developing values and beliefs in their children (primary socialization) and the children's peer interactions affirm or rebut these beliefs (secondary socialization) (Coleman & Hoffer, 1987; Coleman, 1990). For schooling beliefs and values, it makes sense that the prior research assumes that the peers in schools would be the most obvious secondary socialization place of importance. It would be reasonable to assume that the people and groups in the school are the reference points of affirmation or rebuttal to students' schooling beliefs and values. However, if students do not think of people in their school as part of their reference group, then the question is: Would school be as valued by that student?

This chapter hypothesizes that it is the social identity, associated with normed values among peers, that is the social capital mechanism that influences students' school attainment and aspirations. This mechanism operates in this way because

teens are prone to keep intact cohesive social identities, similar to all people. People want their social identities to remain congruent with their self-identities.

All peer groups are not expected to affect life outcomes similarly or to the same magnitude. Social identity is more broadly and prototypically defined in bigger groups, like crowds, than smaller groups, like best friend clusters. Research shows that smaller groups are much more likely to offer accommodations to individual group members than larger groups (Steinberg, 1996). Therefore, the sanctioning from larger crowd groups is more likely a threat and more severe a sanction than in smaller groups. Research shows that social identity of the crowd is likely to influence students' aspirations more than their close clique of friends (Steinberg, 1996). In fact, the best friends of a student actually influence student behaviors the least of all peer groups (cf., Carbonaro & Workman, 2009).

## HYPOTHESES

I identify two types of peer group social identities of teenagers: the social identities associated with their closest friends and those associated with the crowds with which they interact. It is expected that close friends may be less of an influence on educational attainment and outcomes than the crowd of peers. But, in high school, both types of peers are expected to relate to educational outcomes more than the SOI of parents. Moreover, the peer effects on educational outcomes are expected to be greatest when the social identities of these peers are associated with school contexts and align with the students' personal identity with school achievement.

If students' web of social relations is closed around the focus on school, then there will be positive benefits on their schooling outcomes. The tight and clear *communication between parents of friend groups* is one of the elements of social closure that Coleman and Hoffer (1987) propose as vital. Although an intriguing idea, the empirical evidence suggests that the communication between parents of friends has little to no benefit for students (Carbonaro, 1998; De Graaf, De Graaf, & Kraaykamp 2000).

In addition to the social closure among parents, the mission of the school is another form of social closure. Coleman and Hoffer (1987) hypothesize that religious and private schools deliver tighter, more consistent messages of academic success to their students.

## METHOD

### *Sample*

I use data from the National Study of Youth and Religion (NSYR), wave 1.[i] This is a nationally representative dataset of over 3,000 American 13-17 year olds and their parents in 2001. Teens who are exclusively homeschooled are excluded from this contextual analysis. Although the original intent of these data was to explore the influence of religion and spirituality among 21st C. American youth, it has a rich array of data on teens' lifestyles, schooling habits, attitudes, and other

outcomes. Since NSYR collects data on a myriad of contextual data – from teens' family to church to school – it is much more suitable to answer the questions of social identity and school outcomes than other US education datasets. With these data, multiple SOI effects can be analyzed: 1) between different peer groups, 2) within differential contexts, and 3) in comparison to other SOI influences.

*Variables*

Several educational outcomes were used as the dependent outcomes: grade point average and desire to attend college. Cutting class and suspensions are also assessed, as these two behaviors work against achieving educational goals. This section outlines the questions and measures drawn from the NSYR wave 1 survey data to explore the research question regarding whether the social identities of teen peer groups underlie the social capital effects on educational outcomes. Table 1 describes the summary statistics for all of the following measures.

*Schooling Outcomes*

There are a myriad of ways to measure educational outcomes. The NSYR is not intended as an educational research database, so there is no standardized testing information in this dataset. However, the aspirations, grades and (mis)behaviors are assessed with these survey data. The use of these different dimensions of educational outcomes can therefore be used to robustly check the premise of this chapter regarding the relationship of social identity with educational outcomes.

*Attainment*

School achievement is typically discussed using grades and grade point averages. These data asked students about their average *GPA*. Although a rough estimate (mostly As, mostly Bs, etc.), the student reports of grades were shown to be fairly reliable indicators. For interpretation, these grade averages were translated into a traditional GPA metric of 0-4.0. Students were also asked, "how far in school do you think you'll go?" Answer categories were collapsed into *college aspirations* for any teen answering that they expect to attain a 4-year college degree or higher. GPA and college aspirations modestly positively correlate at Pearson's $r$=0.31.

*School Misbehaviors*

School misbehaviors of cutting class and suspensions/expulsions are commonly understood as undesirable and unproductive school behaviors. Both of these questions were asked as a frequency of "how many times," but due to the zero-inflated distribution on these two measures, each were recoded into a dichotomous measure. Teens were identified if they have *cut class* in the last year (32.2%) or been *suspended or expelled* in the last two years (20.5%). These were not

*Table 1. Descriptive statistics*

| | N | M | SD | Min | Max |
|---|---|---|---|---|---|
| *Educational Outcomes* | | | | | |
| Grade Point Average | 3034 | 3.06 | 0.668 | 0 | 4 |
| College Aspirations | 3183 | 0.79 | 0.407 | 0 | 1 |
| Alignment of Aspirations w/ Likelihood | 3370 | 1. 90 | 0.466 | 1 | 3 |
| Cutting class | 3243 | 0.32 | 0.467 | 0 | 1 |
| Suspension | 3245 | 0.21 | 0.403 | 0 | 1 |
| *Personal identity* | | | | | |
| Importance of school to teen | 3324 | 3.36 | 0.79 | 0 | 4 |
| Importance of being cool | 3363 | 1.55 | 1.12 | 0 | 4 |
| Teen identifies as popular groupie | 3226 | 2.04 | 0.92 | 0 | 3 |
| Frequency of being teased | 3361 | 0.92 | 1.13 | 0 | 4 |
| Frequency of teasing | 3360 | 1.15 | 1.17 | 0 | 4 |
| Religious service attendance | 3365 | 3.10 | 2.19 | 0 | 6 |
| Expresses religious beliefs in school | 3366 | 1.08 | 1.03 | 0 | 3 |
| *Contextual Moderators* | | | | | |
| Friends parents call each other | 3370 | 2.21 | 1.85 | 0 | 5 |
| Religious hostility in the school (parent report) | 3172 | 4.03 | 1.20 | 1 | 5 |
| Religious hostility in the school (student report) | 3147 | 0.18 | 0.38 | 0 | 1 |
| *Friends' Social Identity* | | | | | |
| Neither church or school friends | 3127 | 0.15 | 0.36 | 0 | 1 |
| Only church friends | 3127 | 0.02 | 0.14 | 0 | 1 |
| # of Church friends > school friends | 3127 | 0.08 | 0.27 | 0 | 1 |
| # of Church friends = school friends | 3127 | 0.08 | 0.27 | 0 | 1 |
| # of Church friends < school friends | 3127 | 0.25 | 0.44 | 0 | 1 |
| Only school friends | 3127 | 0.42 | 0.49 | 0 | 1 |
| Number of church friends | 3246 | 1.10 | 1.65 | 0 | 5 |
| Number of school friends | 3210 | 3.16 | 1.88 | 0 | 5 |
| *Activity Crowd's Social Identity* | | | | | |
| Not religious- or school-based group/s | 3296 | 0.63 | 0.48 | 0 | 1 |
| Mix of religious & school group/s | 3296 | 0.03 | 0.17 | 0 | 1 |
| Only school group/s | 3296 | 0.03 | 0.17 | 0 | 1 |
| No activity groups | 3321 | 0.31 | 0.46 | 0 | 1 |
| *Controls* | | | | | |
| Attends religious school | 3370 | 0.07 | 0.25 | 0 | 1 |
| Attends private school | 3370 | 0.02 | 0.14 | 0 | 1 |
| Age | 3369 | 15.50 | 1.44 | 12.91 | 18.49 |
| English Lang Learner | 3370 | 0.07 | 0.26 | 0 | 1 |
| US citizen | 3367 | 0.96 | 0.21 | 0 | 1 |
| Teen's grade level | 3317 | 9.45 | 1.55 | 5 | 13 |
| 1 or more parents w/ college degree | 3361 | 0.39 | 0.49 | 0 | 1 |
| HH parent is married | 3370 | 0.67 | 0.47 | 0 | 1 |
| White, non-Hispanic teen | 3370 | 0.66 | 0.48 | 0 | 1 |

*Table 1. (Continued)*

| | N | M | SD | Min | Max |
|---|---|---|---|---|---|
| Northeast region | 3370 | 0.16 | 0.37 | 0 | 1 |
| Midwest region | 3370 | 0.23 | 0.42 | 0 | 1 |
| Southern region | 3370 | 0.41 | 0.49 | 0 | 1 |
| Western region | 3370 | 0.20 | 0.40 | 0 | 1 |
| Teen is Evangelical Protestant | 3370 | 0.31 | 0.46 | 0 | 1 |
| Teen is Catholic | 3370 | 0.24 | 0.43 | 0 | 1 |
| Teen is Jewish | 3370 | 0.03 | 0.18 | 0 | 1 |
| Teen is Mormon | 3370 | 0.02 | 0.15 | 0 | 1 |

insignificant proportions of teens engaging in unproductive school behaviors. Yet, they were quite independent measures, correlating only at Pearson's $r = 0.24$. Teens who have been suspended reported cutting class at two times the rate of other teens (50.1% and 27.3%, respectively).

There are correlations of attainment and misbehaviors as well. GPA negatively correlates with cutting class and being suspended or expelled at Pearson's $r = -0.25$. Aspiring to attain a 4-year degree negatively correlates with cutting class and being suspended or expelled at Pearson's $r = -0.18$ and $r = -0.22$, respectively.

### *Social Identities*

As discussed in the literature review, there are several different types of social identities. There are social identities that are associated with crowds and close friends.

### *Crowd Social Identity*

The crowd social identity is a broad social identity. For school-age teens, many of their crowds are associated with their hobby and interest groups. The members of these groups mainly cohere around shared interests, expectations, and norms associated with the activity. The NSYR survey asked questions about the "regular, organized activities" or "any other activities, hobbies, classes, or other organizations" that the teen does during the day, after school, in the evenings or on the weekends (not including religious services). Then, each activity was assessed as to whether it was organized by a religious or school organization. This organizational dimension of the activity groups creates a structured, norm-based set of expectations of attitudes and behaviors among members. These organized activities generated characteristics similar to a "crowd" social identity. Social identity literature would hypothesize that crowd identities closely aligned with school would have a larger impact on schooling outcomes than other crowd identities. For this purpose, the crowd identities were categorized into whether the teen named *no group* associations, *only school-based group/s*, *only church-based group/s*, or *a mixture of school- and church-based group/s.*

*Friends' Social Identity*

There were a surprisingly high number of teens, 15.0%, who report having no close friends. One-fifth of the teens reported nearly all of their friends (all but 1 of their named friends) were from both their church *and* school contexts. An additional 7.7% of teens (n=240) reported all of their close friends from church *and* school. Only 2% of the teens reported no school friends and some church friends while 5% of others reported no church friends and some school friends. The members of these close friend groups are not expected to uphold the same rigid rule-orientation as found between organized activity members. These "friend" social identities can be contextualized by structured spaces of schools or churches, but there is much more leeway in the expectations of attitudes and behaviors as compared to organized activities.

*Contextual Moderators*

Prior theory has discussed the importance of social closure and alignment for students' success in school (Coleman & Hoffer, 1987).. Coleman and Hoffer (1987) hypothesize that religious and private schools deliver tighter, more consistent messages of academic success to their students. Given this, I include whether the student attends a *religious*, *private*, or *public* (the comparison category) school. Two other measures about the level of *religious hostility* in the school regards the parent and student perception of the level of hostility in the school when students express religious views in their schools.

*Personal Identity*

There are several personal identity characteristics that are relevant indicators of teens' disposition toward school and their schooling outcomes. There were several school identity measures in the dataset. Teens were asked, on a scale of 1(low) to 4(high), about the importance they place on school, a *school importance* identity. Teens were also asked if they identified themselves as a *popular groupie*, the importance they place on "*being cool*", how much they *tease others*, and how much they are *being teased*.[ii] These non-achievement, but school-based, attitudes are part of the social importance of school identity.

Given the nature of these data, I was also able to measure the personal *religious identity* of the teens by using answers to questions about how frequently they attended religious services and how often they expressed their religious beliefs in school (from 1 "never" to 4 "a lot"), along with their religious affiliation.

*Control Variables*

Certain demographic characteristics of students may influence their social identity formation, development, or exposure through social groups. Several of these factors are socioeconomically contextualized: marital status of parent in the

household, college attainment of the parent/s, ethnicity, and citizenship status. Other characteristics, such as age, grade level, English language learner status, along with school type and region on the US, were found to correlate with variation in schooling outcomes (Coleman et al., 1966). These characteristics were controlled in the analytic design of the models.

## ANALYSIS

The following analysis tests the aforementioned hypotheses using ordinary least squares to estimate the linear GPA outcome. Logistic regression techniques estimate the binary outcomes of college aspirations (or not), cutting class (or not), and suspensions/expulsions (or not). Models control for US region, age, ELL, citizenship, race/ethnicity, grade level, parents' education, and family composition of the teen.

To test the robustness of the theory on friends' social identity, the models are run twice: once using measures that describe the proportion of friends and once using raw counts of friends. Proportions of friends are distinguished by the proportion of chruch:school friends (only church, more church than school, equal proportion of church and school, fewer church than school, or only school friends) as compared to naming no church or school friends. Raw counts simply account for the number of church and the number of school friends named by the student.

## RESULTS

The following analysis shows that teens act in ways to confirm their peer group social identities. These social identities and their effects are multiple and varied. The following section shows that the social identity influence of crowd peers is greater than friends on the various school outcomes of American high schoolers. In addition, the contextual nature of the school, the personal identity of the teen, and the SOI of parents remain important, although to a far lesser degree than peer social identity.

### *GPA and Likelihood of Aspiring to College*

There were many similarities between models of GPA and aspiration to attend college (see models 1 and 2 in Table 2, respectively). In each, the crowd identity associated with being involved in organized activity groups significantly improved grades and aspirations to attend college as compared to students in no activity groups. Students who were only involved in non-school activity groups experienced less of a boost than students involved in some or only school-based groups. For college aspirations, a mix of school and non-school activity groups showed the largest magnitude of influence among the four types of organized activity groups. For grade point averages, the boost from school-only groups was greatest among the four types.

*Table 2. Positive educational outcomes by various social identities*

| | (1a) | (1b) | (2a) | (2b) |
|---|---|---|---|---|
| | OLS | | Logit | |
| | GPA 4 pt scale | GPA 4 pt scale | College Aspirations | College Aspirations |
| *Activity Crowd's Social Identity (no groups, omitted)* | | | | |
| Not religious- or school-based group/s | 0.22 (0.03) *** | 0.22 (0.03)*** | 0.60 (0.11)*** | 0.59 (0.11)*** |
| Mix of religious & school group/s | 0.42 (0.05)*** | 0.42 (0.05)*** | 1.87 (0.64)** | 1.87 (0.63)** |
| Only school group/s | 0.49 (0.06)*** | 0.49 (0.05)*** | 1.22 (0.44)** | 1.19 (0.45)** |
| *Friends' Social Identity (no school or church friends, omitted)* | | | | |
| Only church friends | -0.18 (0.09)* | | -0.09 (0.47) | |
| # of Church friends > school friends | -0.08 (0.06) | | 0.23 (0.32) | |
| # of Church friends = school friends | 0.05 (0.06) | | 0.505 (0.29)+ | |
| # of Church friends < school friends | 0.01 (0.04) | | 0.18 (0.21) | |
| Only school friends | -0.02 (0.04) | | 0.19 (0.17) | |
| Number of church-based friends | | 0.01 (0.01) | | 0.04 (0.04) |
| Number of school-based friends | | 0.02 (0.01)* | | 0.06 (0.03)+ |
| *Contextual Moderators* | | | | |
| Friends parents call each other | 0.01 (0.01) | 0.01 (0.01) | 0.07 (0.03)* | 0.07 (0.03)* |
| Religious hostility in school (parent report) | 0.02 (0.01) | 0.01 (0.01) | 0.05 (0.04) | 0.047 (0.042) |
| Religious hostility in school (student report) | -0.02 (0.03) | -0.02 (0.03) | -0.7 (0.13) | -0.072 (0.14) |
| Attends religious school | 0.11 (0.04)* | 0.11 (0.04)* | 1.17 (0.39)** | 1.20 (0.40)** |
| Attends private school | 0.24 (0.07)*** | 0.24 (0.07)*** | -0.17 (0.34) | -0.18 (0.34) |
| *Personal religious identity* | | | | |
| Religious service attendance | 0.02 (0.01)* | 0.02 (0.01)* | 0.03 (0.02) | 0.02 (0.02) |
| Expresses religious beliefs in school | 0.03 (0.01)+ | 0.02 (0.01)+ | 0.15 (0.06)* | 0.15 (0.06)* |
| Teen is Evangelical/Conserv Protestant | -0.02 (0.03) | -0.02 (0.03) | -0.27 (0.16)+ | -0.27 (0.16)+ |
| Teen is Catholic | -0.06 (0.03)+ | -0.05 (0.03)+ | 0.27 (0.17) | 0.26 (0.16) |
| Teen is Jewish | 0.17 (0.07)* | 0.18 (0.07)** | 0.33 (0.60) | 0.36 (0.61) |
| Teen is Mormon | 0.07 (0.06) | 0.07 (0.06) | -0.44 (0.24)+ | -0.43 (0.24)+ |
| *Personal school identity* | | | | |
| Importance of school to teen | 0.23 (0.02)*** | 0.23 (0.02)*** | 0.53 (0.07)*** | 0.52 (0.07)*** |
| Importance of being cool | -0.02 (0.02) | -0.02 (0.02) | -0.01 (0.06) | -0.01 (0.06) |
| Teen identifies as popular groupie | 0.01 (0.02) | 0.01 (0.02) | 0.03 (0.06) | 0.03 (0.06) |

| | | | | |
|---|---|---|---|---|
| Frequency of being teased | -0.01 (0.02) | -0.01 (0.01) | -0.10 (0.06)+ | -0.10 (0.06)+ |
| Frequency of teasing | -0.04 (0.01)*** | -0.04 (0.01)*** | -0.07 (0.05) | -0.07 (0.05) |
| Constant | 2.31 (0.23)*** | 2.22 (0.23)*** | -0.98 (0.89) | -1.05 (0. 90) |
| N Observations | 2,646 | 2,646 | 2,750 | 2,750 |
| R-squared/Pseudo R | 0.24 | 0.23 | 0.16 | 0.16 |

*Note*. Models also control for US region, age, ELL, citizenship, race/ethnicity, grade level, parents' education, and family composition of the teen. Results not included in the table, for ease of presentation. Standard errors in parentheses

*** $p<0.001$, ** $p<0.01$, * $p<0.05$, + $p<0.10$

Context mattered significantly in relation to close friendships effects on schooling outcomes. Having only church-based close friendships associated with a statistically significant dip in average GPA (model 1a) whereas the number of school-based friendships improved GPA (model 1b). For college aspirations, there was a marginally significant benefit to having an equal proportion of church- and school-based close friendships (model 2a) and a positive improvement on aspiring to attend college for each additional school-based friendship (model 2b). Within the context of all these other social identities, parents' mutual interactions did have a significant, albeit small, positive relationship with college aspirations.

The school context continued to matter in all of these models. Not surprisingly, attending private or religious schools was positively associated with GPA. Attendance to religious, but not private, schools was positively associated with the likelihood of aspiring to college, as compared to attending a public school. However, the level of religious hostility in the school, as perceived by the parent or student, did not affect these schooling outcomes.

It is important to remember that these social identity effects are in relation to students' personal religious identity. Even though having only church friends related to lower GPAs, the frequency of religious service attendance and expression of religious beliefs in school correlated with higher GPAs. Moreover, the more students expressed their religious beliefs in school, the higher their average GPAs and likelihood to aspire to college. Jewish students received a boost from their religious identity on their average GPA while Catholics experienced a reduction, as compared to other teens. Catholic teens, however, were more likely to aspire to college, even after accounting for those attending a Catholic or otherwise religious school. This contrasts with Evangelical/Conservative Protestant and Mormon teens averaging a lower likelihood of aspiring to college.

Not surprisingly, the personal school importance identity related positively with GPAs and college aspirations. Behaviors of being teased reduced student college aspirations and the frequency of teasing others correlated with lower GPAs. Attitudes about popularity and "being cool" did not impact these schooling outcomes.

*Cutting Class and Suspension Misbehaviors*

Modeling misbehaviors in school showed many similarities, be they opposite directions, to the models on GPA and college aspirations. Given that the models were analyzing misbehaviors, this reversal of coefficients was expected. The models in Table 3 show that the crowd identity associated with being involved in organized activity groups was significantly related to reduced misbehaviors as compared to students in no activity groups. Being only involved in a mix of religious and school activity groups was related to the greatest magnitude of reduction in likelihood of misbehaving. Students in only school-based or other groups also experienced a reduction in likelihood of misbehaving, as compared to a student in no activity groups.

Here again, having only church-based close friendships was associated with negative schooling outcomes. Religious-only friend circles were related with higher likelihood of cutting class (model 3a) and being suspended or expelled (model 4a). Having a balance of school and religious friends reduced the likelihood of cutting class. Similarly, there was a significant reduction of likelihood of class cutting and suspensions with each additional school-only friendship (model 3b and model 4b, respectively).

Contrary to the hypotheses of social closure (Coleman & Hoffer, 1987), there was no significant association with school behaviors when parents of teens were in close communication with each other. Attendance to religious, but not private, schools negatively related to class cutting. However, misbehaviors were inversely related to the parents' perceptions of religious hostility in school – the likelihood of class cutting and suspensions was lower with increases in perceived religious hostility. This relationship was not found when students perceived religious hostility in their school.

Embedded in all of the social identity and social context of teens' school life, teens' religious practices do mitigate school misbehaviors. The more frequently teens attended religious services and the more frequently they expressed their religious beliefs in school, the lower was the likelihood of cutting class or being suspended. Unlike GPA or college aspirations, religious affiliation did not appear to significantly influence negative school behaviors.

The personal importance of school reduced school misbehaviors while a "popular" school identity correlated with the increased likelihood of class cutting and being suspended. The more a teen teased others, the greater the likelihood that they misbehaved in school. Being teased also increased the likelihood of being suspended.

*Table 3. Undesirable educational outcomes by various social identities*

| | (3a) | (3b) | (4a) | (4b) |
|---|---|---|---|---|
| | Logit | | Logit | |
| | Cutting Class | Cutting Class | Suspended or expelled | Suspended or expelled |
| *Activity Crowd's Social Identity (no groups, omitted)* | | | | |
| Not religious- or school-based group/s | -0.42 (0.09)*** | -0.40 (0.09)*** | -0.50(0.10)*** | -0.49 (0.10)*** |
| Mix of religious & school group/s | -0.84 (0.30)** | -0.80 (0.29)** | -1.63 (0.52)** | -1.60 (0.52)** |
| Only school group/s | -0.74 (0.26)** | -0.71 (0.26)** | -0.67 (0.33)* | -0.65 (0.32)* |
| *Friends' Social Identity (no school or church friends, omitted)* | | | | |
| Only church friends | 0.67 (0.36)+ | | 0.69 (0.27)* | |
| # of Church friends > school friends | -0.10 (0.24) | | -0.19 (0.30) | |
| # of Church friends = school friends | -0.32 (0.18)+ | | -0.43 (0.26) | |
| # of Church friends < school friends | 0.11 (0.16) | | -0.10 (0.22) | |
| Only school friends | -0.12 (0.13) | | -0.13 (0.15) | |
| Number of church-based friends | | -0.01 (0.03) | | -0.01 (0.03) |
| Number of school-based friends | | -0.06 (0.02)* | | -0.06 (0.03)* |
| *Contextual Moderators* | | | | |
| Friends parents call each other | -0.04 (0.03) | -0.03 (0.03) | 0.03 (0.04) | 0.04 (0.04) |
| Religious hostility in school (parent report) | -0.11 (0.04)* | -0.10 (0.04)* | -0.11 (0.04)** | -0.11 (0.04)** |
| Religious hostility in school (student report) | 0.22 (0.17) | 0.24 (0.17) | 0.05 (0.12) | 0.05 (0.12) |
| Attends religious school | -0.84 (0.26)** | -0.89 (0.26)*** | -0.22 (0.24) | -0.26 (0.23) |
| Attends private school | -0.21 (0.39) | -0.22 (0.39) | 0.09 (0.34) | 0.10 (0.33) |
| *Personal religious identity* | | | | |
| Religious service attendance | -0.06 (0.02)** | -0.06 (0.02)* | -0.06 (0.03)* | -0.06 (0.03)+ |
| Expresses religious beliefs in school | -0.13 (0.05)* | -0.12 (0.05)* | -0.15 (0.05)** | -0.15 (0.05)** |
| Teen is Evangelical/Conserv Protestant | -0.07 (0.13) | -0.06 (0.13) | 0.16 (0.13) | 0.16 (0.13) |
| Teen is Catholic | -0.23 (0.13)+ | -0.20 (0.13) | -0.16 (0.18) | -0.15 (0.18) |
| Teen is Jewish | 0.10 (0.34) | 0.09 (0.34) | 0.03 (0.42) | 0.02 (0.42) |
| Teen is Mormon | -0.15 (0.30) | -0.15 (0.30) | 0.06 (0.42) | 0.04 (0.41) |
| *Personal school identity* | | | | |
| Importance of school to teen | -0.49 (0.05)*** | -0.49 (0.05)*** | -0.35 (0.07)*** | -0.34 (0.07)*** |
| Importance of being cool | -0.05 (0.05) | -0.04 (0.05) | -0.03 (0.05) | -0.03 (0.05) |
| Teen identifies as popular groupie | 0.43 (0.06)*** | 0.43 (0.06)*** | 0.31 (0.08)*** | 0.30 (0.08)*** |
| Frequency of being teased | -0.07 (0.04) | -0.07 (0.04) | 0.14 (0.06)* | 0.14 (0.06)* |
| Frequency of teasing | 0.16 (0.04)*** | 0.16 (0.04)*** | 0.18 (0.04)*** | 0.19 (0.03)*** |
| Constant | -4.27 (0.86)*** | -4.18 (0.85)*** | -0.14 (0.70) | 0.01 (0.70) |
| N Observations | 2,824 | 2,824 | 2,823 | 2,823 |
| R-squared/Pseudo R | 0.17 | 0.17 | 0.12 | 0.12 |

## DISCUSSION

In summary, teen identities were related with the various schooling outcomes. As Steinberg's (1996) research shows, the influence of crowd-based identities, measured here by the involvement with activity groups, outweighed the influence of other peer group identities, such as identities associated with close friends. The friends' identity, personal identity, and to a lesser extent, parents' SOI, remained associated with the four schooling outcomes, but to a lesser extent than these organizational, activity-based, crowd identities.

Being a part of any organized crowd – be it religious, school, or a mix – was positively related with these schooling outcomes. Friendship identities and schooling context were also important. Consistently, students with any degree of school-based crowds experienced better outcomes than students in non-school based crowds. But, any group association is better than none. This points to an unconditional benefit of crowds on the individual student (Steinberg, 1996).

The pattern with these crowd effects was separate from friendship identity influence. Consistently throughout the various schooling outcome models, teens who only name friends from church as their close friends experienced worse schooling outcomes – even worse than isolated students who reported having no close friends. This effect of teens' social identity associating with a school identity was exaggerated when the consistent positive effect of having school-based friends was taken into account in conjunction with the school-based activity group effects. This lends support to the "we" group influence (Hogg, 2000; Hogg & Terry, 2000) more than the social closure influence (Coleman & Hoffer, 1987).

The peer effects of the crowd and friendship worked in conjunction with the personal religious and school identities of the teens. No matter their crowd or friendship identities, teens who valued the importance of school as part of their personal identity did better in school (had better GPAs, more likely to aspire to college degree, less likely to cut class, and less likely to be suspended/expelled). Teens who participated in teasing and identified as popular suffered more educational losses. Teens who actively practiced their religious faith, as demonstrated through their attendance to services or expression of their beliefs, experienced better schooling outcomes. At times, the personal religious affiliation identity of the teen played a role in academic outcomes, but affiliation as such did not influence misbehaviors of cutting class or being suspended or expelled.

Coleman's mechanism of social closure in the school (Coleman & Hoffer, 1987) – from parents' communication with each other to the type of school – did not relate to GPA, cutting class, or being suspended/expelled and was only weakly influential on college aspirations. The perceived level of religious hostility in school shows mixed and inconsistent results. The social crowd and friend identity of the teen, in conjunction with their personal identity, holds much stronger sway on determining teens' GPA, college aspirations, cutting class, and being suspended/expelled.

## CONCLUSION

As the literature on significant others influence explains, the influence of peers outweigh the importance of parent social closure influence. Peers differentially associate with educational outcomes, depending on the source and context of the peers. Crowd-based social identities associated with activity groups show the strongest association with teens' GPA, educational aspirations, cutting class, and being suspended/expelled. These crowd-based social identities are more influential than friend-based social identity associations. But, friend-based social identities matter too. The more connected a teens' friends are to the school context, the better that teens' success in school. At times, it appears better to have no close friends than to have only non-school friends.

The importance of personal identity related to religious and school attitudes and practices maintains a strong, consistent relation with these four schooling outcomes, even after accounting for social identity and school context. This means that the personal convictions of teens can overcome contextual hurdles. This is hopeful, especially given the popular belief that teens make bad decisions due to their vulnerability to peer pressure. Although the parent-to-parent influence is not found, the parent-to-teen influence maintains its importance, albeit indirectly, through these personal identity characteristics that shape teens attitudes toward school.

Given the research on social identity and the findings presented here, it is reasonable to conclude that school-based identities are likely the underlying operating mechanism of social capital exchange in schools that teens use to improve their schooling outcomes. The sanctions from school-based crowds likely carry more weight on schooling outcomes than non-school-based crowd sanctions. Similarly, school-based friendships carry more schooling consequences than do non-school-based friendships. Therefore, it is not that religious and other non-school-based social identities hurt students' schooling outcomes, but rather that school-based social identities exchange at a higher social capital rate. School-based social identities are situated in such ways that they are capable of inducing more improvement on schooling outcomes for teens. Doing poorly in school likely carries with it more sanctions and doing well in school is likely more highly rewarded in these school-based groups. The inextricable and direct exchange between school-based identities of teens and the corresponding school-based expectations of the groups benefit student achievement, attainment, and aspirations.

## NOTES

[i] This research was funded with a grant from the Lilly Foundation. These data have been used, with permission, from the National Study of Youth and Religion Principal Investigator, Christian Smith, PhD.

[ii] In these data, there is a strangely high correlation between the frequencies of teasing and being teased. There is evidence of only 3% of teens report being teased heavily (almost every week or every day) who rarely tease themselves (few times a year or never). There is also little evidence (only 7%) of teens that tease others heavily (almost every week or every day) and yet are not teased

themselves (few times a year or never). These frequencies indicate that nearly 90% of teens who are teased engage in equally frequent teasing behaviors. A "teasing culture" among students in schools appears prominent in most teens' lives.

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# 14. STIMULATING AUTONOMOUS MOTIVATION IN THE CLASSROOM

*The Role of Interpersonal Teacher Agency and Communion*

## INTRODUCTION

Self Determination Theory (SDT) distinguishes the quality of motivation from its quantity or intensity (Vansteenkiste, Sierens, Soetens, Luyckx, & Lens, 2009). A sequence from controlled to autonomous motivation is adopted; autonomous motivation is seen as the best quality type. Being autonomously motivated, as opposed to controlled, has been found to lead to more volitional persistence, better relationships in social groups, more effective performance, greater health and well-being (Deci & Ryan, 2002), deep-level cognitive processing (Vansteenkiste et al., 2009), and creativity (Ryan & Deci, 2000a). The extent to which students' motivation is controlled or autonomous, describes a difference in the quality of motivation. Autonomous motivation is associated with positive learning outcomes (Black & Deci, 2000; Ryan & Deci, 2002; Vansteenkiste et al., 2009) and cannot be taken for granted, as the degree to which it is activated depends on the social context (Deci, Eghrari, Patrick, & Leone, 1994; Reeve, Ryan, Deci, & Jang, 2008; Ryan & Deci, 2000a). Indeed, from a SDT perspective it is claimed that the teacher is an important agent who can increase the quality of student motivation as they adopt a more supporting or controlling style of teaching (Ryan & Deci, 2002). An autonomy-supportive teaching style is claimed to be important for student autonomous motivation (Black & Deci, 2000; Reeve, 1998; Reeve & Jang, 2006), while other (social) context factors, such as teacher structure (providing support for competence) and involvement (providing support for relatedness) are less related to controlled and autonomous motivation (Vansteenkiste et al., 2009). While SDT claims that the teacher influences students' controlled and autonomous motivation (Deci, Vallerand, Pelletier, & Ryan, 1991), it has not yet been shown whether contextual factors such as the teacher and the class are actually important in stimulating autonomous motivation, or whether the students themselves solely make the difference in the quality of their motivation.

In this chapter, the social context is conceptualized in terms of the interpersonal perceptions students have of their teachers (Wubbels, Brekelmans, van Tartwijk, & den Brok, 2006). That is to what degree do students perceive their teacher as conveying agency (i.e., dominance, interpersonal influence) and communion (friendliness, interpersonal proximity) in class. The goal is to show to what extent

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the perceived interpersonal teacher behavior is related to the quality of a student's controlled and autonomous motivation.

## CONTROLLED AND AUTONOMOUS MOTIVATION

Different types of self-regulation, increasing in internalization level, underlie controlled and autonomous motivation (Deci et al., 1991; Ryan & Deci, 2000a). In learning situations, self-regulation comprises the reasons for participating in a learning activity and striving for a goal (Lens & Vansteenkiste, 2008). Controlled motivation is based on external and introjected regulation. *External regulation* is the least-internalized form of extrinsic motivation (Deci & Ryan, 2002). When one is externally regulated, reasons for a behaviour are related to external demands such as rewards or punishments. *Introjected regulation* is the second most controlled type of extrinsic motivation and includes behaviour that is partially internalized, but which is not considered part of the integrated self or truly accepted as one's own. Behaviour is therefore manifested to avoid guilt and shame or to attain feelings of worth (Ryan & Deci, 2000b). Autonomous motivation is based on identified and integrated regulation, and intrinsic motivation. When regulation is *identified*, one values the goal of regulation and acknowledges the behaviour as personally important, but not as reflecting one's own values. The most internalized type of extrinsic motivation is *integrated regulation*. This type of regulation arises when values and goals of behaviour are congruent with one's own values, goals, and needs (Deci & Ryan, 2002). This is similar to, but not the same as *intrinsic motivation* as both types hold a total involvement of the self, but when regulation is integrated, actions are performed for personally important outcomes rather than for interest and enjoyment (Deci, Ryan, & Williams, 1996).

### *Teachers, Classrooms, and Students' Controlled and Autonomous Motivation*

Different studies have claimed that teachers are able to promote autonomous motivation and the internalization of regulation by offering autonomy-support in the classroom (e.g. Black & Deci, 2000; Reeve & Jang, 2006). In stimulating autonomous motivation, Ryan and Deci (2000a) claimed that the teacher is a significant agent by providing support for relatedness, competence, and autonomy in the classroom. Autonomous support by the teacher has been characterized by different instructional activities (Reeve, 1998). In their lab-study, Reeve and Jang (2006) found that activities such as providing rationales and listening positively affected internalization, while giving commands and telling the right answer, demonstrated external agency and thwarted the internalization of self-regulation. In this view, teacher behaviour is thought to be an important factor in stimulating student motivation.

Although SDT claims that the teacher can affect student motivation, it has not been investigated whether teacher and classroom effects can be generalized across students; in other words, is it actually possible that motivation is influenced by

other factors than the self? Research, has argued that motivation is an intra-individual concept (Urdan & Schoenfelder, 2006), but most SDT studies that investigated controlled and autonomous motivation (e.g. Black & Deci, 2000; Reeve & Jang, 2006; Ryan & Deci, 2000b) did not consider the question whether teachers differ in the quality of support of motivation of students. Also, while student perceptions of dyadic student-teacher relationships have been studied (Black & Deci, 2000; Reeve & Jang, 2006), classroom effects, e.g., the classroom social environment (Urdan & Schoenfelder, 2006; Vansteenkiste et al., 2009) were not taken into account. However, it is, important to take the teacher, the class, and the student level into account because teachers can act differently in their classes and classroom groups have been shown to have an effect on students´ individually experienced motivation (Marsh, Martin, & Cheng, 2008).

Den Brok et al. (2004) found that in a sample of physics and English as a Foreign Language (EFL) classrooms, on average 10% of the differences between students' pleasure, perceived relevance, confidence, and effort were located at the teacher/class level. In a sample of physics classrooms more than 30% of the variance was at the teacher-class level. Marsh et al. (2008) showed how cross-classified multilevel modelling can be used to disentangle variance in classroom motivation at the school, teacher, class, student, and subject level. They found that student perceptions of the classroom climate were more specific to the classroom group than to the teacher. Nonetheless, most of the variance in motivation was located at the student level; for enjoyment and student-teacher relationships this was about 85 per cent.

Overall, affective-motivational variables seem to be largely determined at the student level, but the extent to which teacher and class affect variance in these variables differs between studies.

### *Interpersonal Relationships*

In addition to providing stimulating instructional activities, Reeve and Jang (2006) point at the importance of high quality interpersonal relationships in order to enhance autonomous motivation. They suggest that high quality interpersonal relationships are effective if they are characterised as high in attunement and supportiveness. Also, Patrick, Ryan, and Kaplan (2007) demonstrated a positive effect for teacher emotional support on students' use of self-regulation strategies. Den Brok et al. (2004) found that interpersonal relationships in the classroom explained large amounts of the variance (up to two thirds) in student affective outcome variables at the teacher-class level.

The present study conceptualizes interpersonal relationships in terms of interpersonal theory (Horowitz & Strack, 2011). An application of interpersonal theory to the classroom context is the Teacher Interpersonal Circle, a circumplex model which describes a teacher's general behavioural patterns (Wubbels et al., 2006). Circumplex models organize interpersonal functioning using two dimensions, *agency* (i.e., dominance, interpersonal influence) and communion (friendliness, interpersonal proximity). The Teacher Interpersonal Circle is used to

map the degree of agency and communion a teacher conveys in class (Brekelmans, Mainhard, den Brok, & Wubbels, 2011; Wubbels et al., 2012). A student's perception of these two dimensions can be used to map dyadic interpersonal relationships, but also to represent, in an aggregated form, the classroom social climate (den Brok, Brekelmans, & Wubbels, 2006; Lüdtke, Robitzsch, Trautwein, & Kunter, 2009; Mainhard, Brekelmans, & Wubbels, 2011).

Agency and communion are independent and can be understood as separate aspects of teacher behaviour (den Brok et al., 2004). As opposed to SDT, in interpersonal theory agency is a 'neutral' dimension in terms of affection, and is interpreted in combination with communion. Depending on the amount of communion, agency in the classroom in combination with relatively high levels of communion manifests structure or behavioural control (Nie & Lau, 2009; see also Brekelmans, 2010), or, in combination with lower levels of communion, external pressure or psychological control (Soenens, Sierens, Vansteenkiste, Dochy, & Goossens, 2012). In SDT, psychological control is especially used to describe the negative impact of teacher behaviour on autonomous motivation (Soenens et al., 2012). However, in line with Nie and Lau (2009), Brekelmans (2010) argues that in the classroom context behavioural agency is needed to engage students in learning and enable individual students to experience autonomy in the classroom.

Studies that have investigated the relation of agency and communion with cognitive and affective outcome variables generally show positive effects (den Brok et al., 2004, Wubbels et al., 2006) although for subject-specific motivation, communion has been found to have a somewhat stronger effect than agency (den Brok et al., 2004). Teachers with relatively higher levels of agency and communion are seen as more interpersonally competent than teachers with lower levels of agency and communion (Brekelmans et al., 2011).

## THIS STUDY

The present study relates the extent to which student motivation is autonomous or controlled to students' interpersonal perceptions of their teacher. These perceptions are investigated at the teacher level (i.e., teacher component) which taps a teacher's general interpersonal style in terms of agency and communion, the class level (i.e., class component), which pertains to the specific classroom social environment in terms of teacher agency and communion, and the individual student level (i.e., student component) which taps the student perceived nature of the teacher-student relationship in terms of teacher agency and communion (Lüdtke et al., 2009; Mainhard, Brekelmans, den Brok, & Wubbels, 2011). Previous research has shown that variance in measures of pleasure, confidence, relevance, and effort (den Brok et al., 2004), and enjoyment (Marsh et al. 2008) resides at all of these three levels. Additionally, disentangling student, class, and teacher effects makes it possible to investigate to what degree claims about the central role of the teacher and the classroom social environment for the stimulation of students' autonomous motivation by providing autonomy-support (Black & Deci, 2000; Reeve & Jang, 2006) are justified.

In summary, the present study investigates two questions: (1) To what extent is variance in controlled and autonomous motivation located at the student, class, and teacher level; and (2) To what extent do student, class, and teacher components of students' interpersonal perceptions of their teacher explain variance in students' autonomous and controlled motivation.

Based on the findings of den Brok et al. (2004) we expect that approximately 10% of the variance in students' controlled and autonomous motivation is located at the class and teacher level. In line with our discussion, it was expected that a large part of this variance would be explained by teacher agency and communion. In line with Marsh et al. it would be expected that the class contributes more to student motivation than the teacher (Marsh et al., 2008). The classroom comprises the social environment in which a particular student is taught, while the overall teacher component across classes may only be an implicit factor in student motivation, and therefore less directly linked to student motivation. In line with den Brok et al. (2004) and Wubbels et al. (2006) we expect to find positive effects of agency and communion on the quality of students´ motivation and therefore expect a positive relation with autonomous motivation, and a negative relation with controlled motivation.

## METHOD

### *Sample*

Participants were 144 teachers and 3099 students from 67 Dutch schools for secondary education (constituting 276 classrooms). Teachers were recruited through e-mails and phone calls to schools and additionally through advertisements in school magazines. Thirteen teachers participated with one of their classes, the remainder of the teachers with two or three classes. Students from all educational levels participated (practical pre-vocational $n$ = 254, pre-vocational $n$ = 738, senior general secondary $n$ = 978, and pre-university $n$ = 1068). Student were aged between 12 and 18 years old. Teachers (45% male, $M_{age}$ = 42.38, $SD_{age}$ = 11.17) had on average a teaching experience of 12.67 years ($SD$ = 10.22, range between 1 and 38 years of experience).

### *Measures*

*Controlled and autonomous motivation.* Students' controlled and autonomous motivation was mapped with the Academic Self-Regulation Questionnaire (SRQ-A, Ryan & Connell, 1989). The questionnaire used in the study included three topics: reasons for doing homework, reasons for doing class work, and reasons for answering hard questions in class. With the questionnaire, *external* (i.e. "I try to answer hard questions during the lessons of this teacher because I am supposed to"), *introjected* (i.e. "I work on assignments during the lesson of this teacher because I want this teacher to think I am a good student"), *identified* self-regulation (i.e. "I work on assignments during the lesson of this teacher because I want to

learn new things"), and *intrinsic* motivation (i.e. "I try to answer hard questions during the lessons of this teacher because it is fun to answer hard questions") was tapped (24 items, 6 per type of self-regulation). The questionnaire was translated into Dutch with use of forward- backward-translation. Students rated items on a 4-point scale ranging from (1) completely not true to (4) completely true. Internal consistency was acceptable for external regulation (α = .62), and good for introjected regulation (α = .73), identified regulation (α = .79), and intrinsic motivation (α = .83). As in previous studies (e.g. Vansteenkiste, Lens, de Witte, de Witte, & Deci, 2004; Vansteenkiste et al., 2009), the intrinsic and identified scales were averaged into a composite score on *autonomous motivation* (*M* = 2.42, *SD* = 0.72), and introjected and external were averaged into *controlled motivation* (*M* = 2.24, *SD* = 0.63). However, confirmatory factor analysis showed that such a two factor model did not fit the data well, $\chi^2(274) = 11114.43$, $p < .001$, CFI = .55, TLI = .55, RMSEA = .12. In our sample controlled and autonomous motivation were highly correlated ($r = .63$, $p < .001$), whereas earlier research found no such correlation (Opdenakker, Maulana, & den Brok, 2012; Vansteenkiste et al., 2004; Vansteenkiste et al., 2009). Nevertheless, internal consistencies of autonomous (α = .86) and controlled motivation (α = .79) were good. We used controlled and autonomous motivation in our analyses separately, but, to account for the correlation between the two constructs, either controlled or autonomous motivation were added as covariates in the multilevel models.

*Interpersonal perception of the teacher.* Student perceptions of the teacher were mapped with a 24-item version of the Questionnaire on Teacher Interaction (QTI, Wubbels et al., 2006). The QTI includes items such as "this teacher acts hesitantly", and "this teacher is strict" and students rate items on a 5-point Likert type scale ranging from (1) never to (5) always. Agency and communion are calculated by weighting each item differently for the two dimensions, according to their position on the interpersonal circle. For example the item "this teacher is friendly" is more strongly weighted for communion, while "this teacher is uncertain" is more strongly (negatively) weighted for teacher agency (for a comprehensive discussion consult den Brok et al., 2006). Cronbach's alphas for were .79 and .82 for agency and communion respectively. The circular structure and spacing of the QTI items was evaluated with CIRCE (Grassi, Luccio, & Di Blas, 2010) and satisfying model fit indices were found, $\chi^2(28) = 11189.12$; $p < .01$, RMSEA = 0.06; CFI = .99, TLI = .98; free circumplex. Cronbach's alphas for agency and communion based on this model were .73 and .91 respectively.

*Teacher interpersonal style.* The teacher interpersonal style is represented by the shared student perception of all different classes that are taught by the same teacher. It describes the teacher's interpersonal characteristics he or she shows equally in all classrooms. According to Lüdtke et al. (2009), variables used at the class and teacher level are important in learning environment research. However, aggregation of student perceptions at the teacher or class level can only be performed if the psychometric properties of the data are sufficient at both the

student and any higher level of aggregation. Usage of student perceptions at the teacher level was justified as reliability of the teacher-mean rating was reliable for agency (ICC(1) = .45, ICC(2) = .95) and communion (ICC(1) = .43, ICC(2) = .94). The ICC(1) represents the average correlation of two student perceptions within a classroom and the ICC(2) indicates the reliability of a group-mean rating (Lüdtke et al., 2009).

Centring of variables is important in multilevel analysis because it impacts results of the analyses, especially if random slopes are modelled (Hox, 2010). The teacher components of agency and communion were centred on the grand mean, in order to set the mean of the overall perception of agency and communion of a teacher to zero. At the teacher level gender (0 = male, 1 = female), age, and teaching experience were added to the model as covariates. These variables were centred on their grand mean as well.

*Classroom social environment.* The classroom component reflects the shared part of the perception of students from the same class. It was used here as an indicator of the classroom social environment. The classroom component represented the mean scores of all student perceptions in a particular class. ICC(1) was .51 for agency and .53 for communion. ICC(2) showed sufficient reliability for agency (.92) and communion (.93). The mean class score of agency and communion was added as centred within the teacher, which resulted in scores that represented the deviance of a particular class from a teacher's mean score, with the teacher and individual student components cancelled out. At the class level the covariates school type (0 = pre-university, 4 = practical pre-vocational education), school year (0 = first year, 5 = sixth year), and by the teacher estimated performance ($M$ = 5.85, $SD$ = 1.44, minimum = 1, maximum = 9) and motivation levels ($M$ = 5.83, $SD$ = 1.30, minimum = 1, maximum = 9) of that class were centred on their grand mean. Motivation and performance levels were tapped with a single item, in which the teacher estimated the performance and motivation levels of a particular class.

*Teacher-student relationship.* The student component concerns the unique part of a student's perception of the teacher, given that students are nested under classes and teachers. Thus, the student component is the part of the perception that is unique to the student, with the classroom and teacher components cancelled out. It was represented by student agency and communion scores, which were centred on the group mean in the analyses.

### *Procedure*

The teachers received the student questionnaires together with an instruction of how they had to complete the questionnaire, so that all teachers followed the same procedure. Questionnaires were administered in the normal classroom situation during a lesson. All students completed the QTI, and one half of the students in a class completed the SRQ-A, and the other half of the students in that class

completed a third questionnaire, which was not used in the present study. A student collected the questionnaires and sealed them in an envelope.

### *Analysis*

Data were distributed normally and no univariate outliers were detected. Relationships between agency and communion, and autonomous and controlled motivation were linear.

Five models were tested for both controlled and autonomous motivation; a variance component model (model 1), a model with agency and communion (model 2), a model with agency, communion, and the covariates teacher experience, teacher gender, teacher age, school type, school year, and motivation and performance level of the class according to the teacher (model 3), a model with random slopes (model 4), and a model including cross-level interactions (model 5). Analyses were performed on three levels; the student, class, and teacher level. In model 2 to 5, controlled and autonomous motivation were variably added as covariates because of their apparent overlap.

## RESULTS

Descriptive statistics of agency and communion at different levels are presented in Table 1. These show that the mean scores stayed the same at the student, class, and teacher level and that the standard deviations decreased due to aggregation. The correlation of controlled motivation was higher with agency ($r = .17$, $p < .001$) than with communion ($r = .13$, $p < .001$), and the correlation with autonomous motivation was higher for communion ($r = 23$, $p < .001$) than for agency ($r = .11$, $p < .001$).

*Table 1. Descriptive statistics of agency and communion at the student, class, and teacher level*

| | Agency | | | | Communion | | | |
|---|---|---|---|---|---|---|---|---|
| Level | *M* | *SD* | Min | Max | *M* | *SD* | Min | Max |
| Student | 0.13 | 0.14 | -0.51 | 0.48 | 0.19 | 0.21 | -0.59 | 0.60 |
| Class | 0.13 | 0.11 | -0.29 | 0.34 | 0.19 | 0.16 | -0.40 | 0.51 |
| Teacher | 0.13 | 0.10 | -0.20 | 0.33 | 0.19 | 0.14 | -0.27 | 0.51 |

*Note*. $N_{student} = 3038$, $N_{class} = 276$, $N_{teacher} = 144$. Min = minimum; Max = maximum. Theoretically possible range of the dimensions between +/- 0.81.

### *Variance Decomposition of Controlled and Autonomous Motivation*

12% of variance in *controlled motivation* (see Model 1 in Table 2) was located at the class level was, and 15% resided at the teacher level. Thus, the average

*Table 2. Multilevel Models for Controlled Motivation*

| Parameter | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|---|---|---|---|---|---|
| | | | Fixed effects | | |
| Intercept | 2.26 (.03) | 2.24 (.01) | 2.24 (.01) | 2.24 (.01) | 2.24 (.01) |
| *Student level* | | | | | |
| Agency | | 0.26**(.01) | 0.26**(.01) | 0.24*(.07) | 0.25*(.08) |
| Communion | | -0.18**(.01) | -0.18**(.01) | -0.18*(.07) | -0.21*(.07) |
| Autonomous | | 0.61**(.01) | 0.61**(.01) | 0.61**(.01) | 0.61**(.01) |
| Communion* | | | | | -1.04*(.42) |
| Communion Class | | | | | |
| *Class level* | | | | | |
| Agency | | 0.52*(.03) | 0.15 (.03) | 0.16 (.25) | 0.17 (.25) |
| Communion | | -0.11 (.01) | -0.01 (.01) | -0.08 (.14) | -0.10 (.13) |
| School type | | | 0.05**(.01) | 0.05**(.01) | 0.05**(.01) |
| School year | | | -0.04**(.01) | -0.04**(.01) | -0.04**(.01) |
| Motivation level | | | -0.03*(.01) | -0.03*(.01) | -0.03*(.01) |
| Performance level | | | 0.04*(.01) | 0.04*(.01) | 0.04*(.01) |
| *Teacher level* | | | | | |
| Agency | | 0.59**(.14) | 0.37*(.13) | 0.38*(.13) | 0.39**(.13) |
| Communion | | -0.21* (.10) | -0.17 (.08) | -0.16 (.09) | -0.08 (.16) |
| Gender | | | 0.03 (.02) | 0.03 (.02) | 0.03 (.02) |
| Age | | | -0.00 (.00) | -0.00 (.00) | -0.00 (.00) |
| Experience | | | 0.00 (.00) | 0.00 (.00) | 0.00 (.00) |
| | | | Random parameters | | |
| $\sigma^2_e$ (student) | 0.30 | 0.16 | 0.16 | 0.15 | 0.15 |
| $\sigma^2_{u0}$ (class) | 0.05** | 0.01** | 0.01** | 0.01** | 0.01** |
| $\sigma^2_{v0}$ (teacher) | 0.06** | 0.01** | 0.01** | 0.01** | 0.01** |
| $\sigma^2_{u02}$ (slope communion) | | | | 0.31** | 0.29** |
| -2*log likelihood | 5367.84 | 3316.55 | 3264.33 | 3244.82 | 3238.79 |
| Deviance dif. | - | 2051.29** | 52.22** | 19.51$^{\dagger}$ | 6.03* |

*Note.* Standard errors are in parentheses.
$p < .05$, two-tailed. ** $p < .001$, two-tailed. $^{\dagger}$ $p < .001$, one tailed.

correlation between the reported level of controlled motivation of two students in the same class was .27.

Model statistics for *autonomous motivation* are presented in Model 1 in Table 3. Nine per cent of the variance in autonomous motivation was located at the class level and 13% at the teacher level. Thus, the average correlation between the reported level of autonomous motivation of two students in the same class was .22.

*Table 3. Multilevel models for autonomous motivation*

| Parameter | Model 1 | Model 2 | Model 3 | Model 4 | Model 5 |
|---|---|---|---|---|---|
| | | | Fixed effects | | |
| Intercept | 2.44 (.03) | 2.43 (.01) | 2.43 (.01) | 2.43 (.01) | 2.43 (.01) |
| *Student level* | | | | | |
| Agency | | 0.04 (.09) | 0.03 (.09) | 0.05 (.09) | 0.06 (.09) |
| Communion | | 0.54**(.07) | 0.54**(.06) | 0.54**(.07) | 0.54**(.07) |
| Controlled | | 0.80**(.03) | 0.81**(.03) | 0.81**(.01) | 0.81**(.01) |
| Communion* Communion Class | | | | | 1.53*(.63) |
| *Class level* | | | | | |
| Agency | | 0.07 (.32) | 0.20 (.27) | 0.16 (.27) | 0.19 (.28) |
| Communion | | 0.27 (.15) | 0.26 (.15) | 0.26 (.15) | 0.26 (.15) |
| School type | | | -0.03*(.01) | -0.03* (.01) | -0.03*(.01) |
| School year | | | 0.01 (.01) | 0.01 (.01) | 0.01 (.01) |
| Motivation level | | | 0.02 (.01) | 0.01 (.01) | 0.01 (.01) |
| Performance level | | | -0.01 (.01) | -0.01 (.01) | -0.01 (.01) |
| *Teacher level* | | | | | |
| Agency | | -0.26*(.11) | -0.17 (.13) | -0.20 (.13) | -0.37 (.30) |
| Communion | | 0.57**(.07) | 0.52**(.09) | 0.51**(.09) | 0.51** (.09) |
| Gender | | | -0.02 (.02) | -0.02 (.02) | -0.02 (.02) |
| Age | | | -0.00 (.00) | -0.00 (.00) | -0.00 (.00) |
| Experience | | | -0.00 (.00) | -0.00 (.00) | -0.00 (.00) |
| | | | Random parameters | | |
| $\sigma^2_e$ (student) | 0.41 | 0.22 | 0.22 | 0.21 | 0.21 |
| $\sigma^2_{u0}$ (class) | 0.05** | 0.01** | 0.01** | 0.01** | 0.01** |
| $\sigma^2_{v0}$ (teacher) | 0.07** | 0.01* | 0.00* | 0.00* | 0.00* |
| $\sigma^2_{u02}$ (slope communion) | | | | 0.19* | 0.18* |
| -2*log likelihood | 6290.25 | 4131.52 | 4120.74 | 4113.84 | 4107.99 |
| Deviance dif. | - | 2158.73** | 10.78 | 6.90† | 5.85* |

*Note.* Standard errors are in parentheses.
* $p < .05$, two-tailed. ** $p < .001$, two-tailed. † p <.001, one tailed.

Thus, although most variance in controlled and autonomous motivation is located at the student level, the teacher and the class level both account for some variance in students' motivation, and for both controlled and autonomous motivation the teacher seems to be somewhat more important than the class.

*Interpersonal Relationships as Predictors of Controlled and Autonomous Motivation*

*Controlled motivation*. The model including agency and communion fitted the data significantly better than the variance component model, $\Delta\chi^2$ (7) = 2051.29, $p$ < .001 (see Model 2 in Table 2). Agency was significantly positive related to controlled motivation at the student, class, and teacher level, while communion showed significant negative relations at the student and teacher level.

Including class and teacher level covariates (Model 3: school type, school year, motivation level, performance level, teacher age, teacher gender, and teaching experience) further improved model fit, $\Delta\chi^2(7) = 52.22$, $p < .001$. All covariates at the class level were significantly related to controlled motivation, and together made that the class component of agency became a non-significant predictor. School type, school year, and performance level had the largest effects on controlled motivation. Students from practical pre-vocational education had more controlled motivation than students from pre-university education, and the older students were, the less controlled motivation they reported. The higher the by the teacher estimated motivation level of a class, the more controlled motivation was thwarted, and the higher the teacher considered the performance level of a class, the more controlled motivation was reported by students.

In Model 4 random slopes were tested. The relation between communion as perceived by individual students (i.e. the student component) and controlled motivation was found to vary across classes, $\sigma^2_{u02} = 0.31$, $\chi^2(274) = 406.68$, $p$ < .001. Inclusion of random slopes improved the model fit, $\Delta\chi^2(2) = 19.51$, $p$ (one-tailed) < .001. The slopes of the relation between controlled motivation and the individual student perception of communion ranged from -0.28 to 0.91 across classes, which shows that in some classes the student perceptions of communion negatively related to controlled motivation, whereas in other classes this relation was positive.

In order to explain differences in the relationship between individual student perceptions of communion on controlled motivation in different classes, cross-level interactions were tested in Model 5, which again fitted the data better than previous models, $\Delta\chi^2(1) = 6.03$, $p < .05$. This final model shows that both the student component and the teacher component of agency were positively related to students' controlled motivation. This means that teacher agency, as agreed on by all students from that teacher (e.g., the teacher's interpersonal style in terms of agency), was positively related to controlled motivation. Moreover, when a student's perception of teacher agency was above the class mean, this student's controlled motivation was estimated to be higher as well. The average communion in class significantly explained differences in the effect of individually perceived communion on controlled motivation, $t(274) = -2.45$, $p = .02$. The negative coefficient showed that the higher the class mean communion was and the more a student's perception deviated positively from this mean, the less controlled that student's motivation was expected to be.

The standardized coefficients displayed in Table 4 show that the interaction between the individual student perception of communion and the classroom social environment in terms of communion affected controlled motivation the most ($\beta$ = -.26; medium sized effect). The next most important predictors were school type ($\beta$ = .08), school year ($\beta$ = -.08), and by the teacher estimated performance level ($\beta$ = .08) of the class. The standardized coefficients show that when school type, school year, or performance level increase with one standard deviation, controlled motivation would be predicted to increase with 0.08 standard deviation. However, if the estimated motivation level increases with one standard deviation (1.30), controlled motivation decreases with 0.07 times the standard deviation (0.05). Small sized effects were also found for agency at the student and teacher level on controlled motivation ($\beta$ = .06 for both).

*Table 4. Standardized coefficients of significant predictors of controlled and autonomous motivation*

| | Model 2 | | Model 3 | | Model 4 | | Model 5 | |
|---|---|---|---|---|---|---|---|---|
| | β | | β | | β | | β | |
| Parameter | Co | Au | Co | Au | Co | Au | Co | Au |
| Intercept | | | | | | | | |
| *Student level* | | | | | | | | |
| Agency | .06 | | .06 | | .05 | | .06 | |
| Communion | | .16 | -.06 | .16 | -.06 | .16 | -.07 | .16 |
| Autonomous | | | | | | | | |
| Communion*CommunionClass | | | | | | | -.26 | |
| Communion*AgencyClass | | | | | | | | .23 |
| *Class level* | | | | | | | | |
| Agency | .09 | | | | | | | |
| Communion | | | | | | | | |
| School type | | | .08 | -.04 | .08 | -.04 | .08 | -.04 |
| School year | | | -.08 | | -.08 | | -.08 | |
| Motivation level | | | -.07 | | -.07 | | -.07 | |
| Performance level | | | .08 | | .08 | | .08 | |
| *Teacher level* | | | | | | | | |
| Agency | .09 | .04 | .06 | | .06 | | .06 | |
| Communion | .05 | .11 | | .10 | | .10 | | .10 |
| Gender | | | | | | | | |
| Age | | | | | | | | |
| Experience | | | | | | | | |

*Note.* Co = controlled motivation, Au = autonomous motivation.

Compared to a model in which only autonomous motivation was included as a covariate, agency and communion together explained 1%, 4%, and 26% of the

variance in controlled motivation at the student, class, and teacher level, respectively. Agency and communion together explained 5% of the variance in controlled motivation. The interaction of the student component of communion with the amount of agency in the class accounted for 6% of the varying relation of communion with controlled motivation across classes.

*Autonomous motivation.* Table 4 includes the five models that were fitted for autonomous motivation. Model 2, with agency and communion as predictors, fitted the data significantly better than Model 1, $\Delta\chi^2(7) = 2158.73$, $p < .001$. Both the student and the teacher components of communion positively related to autonomous motivation whereas the teacher component of agency negatively related to autonomous motivation. The class component (i.e. classroom social environment), however, did not affect autonomous motivation.

Several covariates were added in Model 3. However, this model did not fit the data better than model 2, $\Delta\chi^2(7) = 10.78$, $p > .05$. When we investigated random slopes for the student components of agency and communion, the relation between individual student perceptions of teacher communion and autonomous motivation was found to vary across classes, $\sigma^2_{u02} = 0.19$, $\chi^2(274) = 344.60$, $p = .003$. Model 4 did fit the data better than Model 2 and 3, $\Delta\chi^2(2) = 6.90$, $p$ (one-tailed) $< .025$. The slopes of the relation between autonomous motivation and the individual student perceptions of communion ranged between -0.40 and 0.79 across classes.

In Model 5, cross-level interactions were included to investigate whether the varying relation between individual students' perceptions of communion and autonomous motivation could be explained by class factors, $\Delta\chi^2(1) = 5.85$, $p < .05$. A cross-level interaction between individual students' perceptions and the class mean agency was found, $t(274) = 2.42$, $p = .02$. This model also showed that the teacher interpersonal style in terms of communion was related positively to students' autonomous motivation, meaning that the higher the mean level of teacher communion, the more autonomously motivated a student can be expected to be. Furthermore, the positive interaction between the individual student perceptions of communion and the class mean level of agency shows that in classrooms with high mean perceptions of agency, the relation between the individual student perception and autonomous motivation is stronger than in classrooms with low mean perceived agency. Thus, according to our model, highest levels of autonomous motivation can be expected for students that perceive the teacher as more affiliated than the class average in classrooms with a high average perceived agency.

Standardized coefficients (see Table 4) show that the interaction between individual student perceptions of communion and the class mean of teacher agency had the strongest relation with autonomous motivation ($\beta = .23$; medium sized effect). Thereafter, the individual student perceptions of communion were most strongly related to autonomous motivation ($\beta = .16$), but this relation only accounted for variance in classes with at least a mean classroom perception of teacher agency. The relation between the teacher interpersonal style in terms of

communion and autonomous motivation was somewhat smaller ($\beta$ = .10*)*. If the teacher interpersonal style increased with 0.14 (1 *SD*), autonomous motivation was predicted to increase with 0.07.

Compared to a model in which only controlled motivation was included as a covariate, the student, class, and teacher components of agency and communion jointly explained 3%, 0%, and 55% of the variance in autonomous motivation at the student, class, and teacher level, respectively. The total explained variance in autonomous motivation by agency and communion was 10%. The interaction of the student component of communion with the class level of communion accounted for 10% of the variance in the varying relation of student communion and autonomous motivation.

To summarize, differences were found for the relationship between agency and communion, and controlled and autonomous motivation. The main differences were that the individual student perception and the teacher interpersonal style in terms of agency positively related to controlled motivation, whereas the individual student perception and the teacher interpersonal style in terms of communion positively related to autonomous motivation. Furthermore, the varying relation between the individual student perception of communion and controlled and autonomous motivation across classes was for controlled motivation partly explained by the classroom mean communion level and for autonomous motivation by classroom mean agency. Also, agency and communion together accounted for 5% of the variance in controlled motivation and 10% of the variance in autonomous motivation. Finally, school type, school year, motivation level, and performance level were related to controlled motivation, while only school type was related to autonomous motivation.

## DISCUSSION

The aim of this study was twofold. First, it was investigated by what means variance in controlled and autonomous motivation is decomposed at the student, class, and teacher level. Second, the extent to which student, class, and teacher components of students' interpersonal perceptions of their teacher accounted for the variance in controlled and autonomous motivation was examined. Results show that variance in students' motivation, was partly accounted for by class and teacher level characteristics. Furthermore, the student and teacher components, but not the class component of students' interpersonal perception, were both related to students' controlled and autonomous motivation.

Most variance in both controlled and autonomous motivation was located at the student level. Nonetheless, more variance than expected resided at the class and the teacher level for controlled (27%) and autonomous motivation (22%). Den Brok et al. (2004) found respectively 13.5% and 31.6 per cent of the variance in pleasure in English as a Foreign Language and Physics students at the teacher-class level. This indicates that motivation as defined by SDT indeed incorporates a social context component. However, SDT claims that the social context is important for the degree to which autonomous motivation is evoked (Deci et al., 1994; Reeve et

al., 2008; Ryan & Deci, 2000a), which seems slightly contradictory to our findings as about the same amount of variance in controlled and in autonomous motivation was located at the teacher and class level. A possible explanation might be that autonomous motivation arises mainly because an activity is seen as interesting and enjoyable (reasons from within the self), while controlled motivation represents student activities evoked by external factors to the self, such as praise or rewards.

Our results show that relatively more variance was located at the teacher level than at the class level, which suggests that a teacher's style is somewhat more important for controlled and autonomous motivation than the specific classroom context. This contradicts research by Marsh et al. (2008) that found that the classroom was more important. However, Marsh et al. defined the classroom climate as a function of the pupils in that classroom, while the present study highlighted teacher interpersonal behaviour as a basis of the classroom social environment.

### *Students' Individual Interpersonal Perceptions*

Differential relations were found for the association of controlled and autonomous motivation students' interpersonal perceptions of their teacher. According to our models, students who perceived the teacher as high in agency will have more controlled motivation than students who perceive the teacher as low in agency. In addition, a teacher who has a interpersonal style characterized by relatively higher levels of agency is predicted to evoke more controlled motivation in students. Interestingly, if a student perceived such a teacher as more affiliative than average, this students controlled motivation will be relatively lower. In general, a lot of agency enhances controlled motivation, while high levels of perceived communion decrease levels in controlled motivation.

Autonomous motivation may be expected to be higher if a student in a class with above average teacher agency perceives the teacher as conveying more communion than the classroom average. However, agency by itself did not relate to autonomous motivation. These findings show that agency and communion have to be interpreted together in order to determine their effect on motivation.

### *Behavioural and Psychological Control*

When a student perceives high teacher agency together with a high level of communion, agency may be typified as *behavioural control* (Nie & Lau, 2009). SDT acknowledges that behavioural control is defined in terms of structure and that structure could facilitate endorsement of social rules (Nie & Lau, 2009). SDT distinguishes basic needs that must be fulfilled in order to be autonomously motivated. These are the need for autonomy, competence, and relatedness. The need for autonomy, in particular, must be fulfilled to reach integration of values (Ryan & Deci, 2000a) and an autonomy-supportive classroom is therefore likely to provide the requirements to satisfy the need for autonomy. Additionally, the need

for relatedness is deemed important for the internalization of regulatory styles (Deci & Ryan, 2002). Behavioural control seems to contain both high agency and high communion and therefore fulfils both the needs for autonomy and relatedness. As a consequence, in class situations behavioural agency would not reduce autonomous motivation, but may be seen as an enabling factor. Therefore, classrooms that offer both much agency and communion offer the most autonomy-support to students.

When a high level of agency is combined with opposing behaviour (i.e., low communion), control may become more external (or psychological), which leads, according to SDT, to controlled motivated students. Therefore, a classroom with high interpersonal agency and little communion seems to represent psychological control, which is deemed detrimental for autonomous motivation because it hampers students' psychological freedom (Deci & Ryan, 2000). In order to increase students' autonomous motivation teachers could therefore first consider how students perceive the amount of communion in the classroom, before they consider the amount of agency they convey.

### *Limitations and Future Directions*

Previous research has addressed autonomous and controlled motivation as two separate factors, resulting in the possibility to score high or low on both autonomous and controlled motivation (Opdenakker et al., 2012; Vansteenkiste et al., 2009). The present study, however, found a substantial correlation between the two factors. This means that at least in the sample discussed, controlled and autonomous motivation cannot be addressed as strictly separate types of motivation.

A second limitation was the relatively small *N* at the class level, which may have biased our estimates. Due to the small amount of classes per teacher, the teacher component of the effects may be overestimated.

This study underlines that agency and communion should be interpreted together. Agency must be interpreted differently in combination with higher levels of teacher communion than with lower levels of communion. While a combination with higher communion represents strong guidance and teacher leadership (i.e., *psychological* control in terms of SDT), a combination with lower communion represents strict or even confronting teacher behaviour (i.e., *behavioural* control in terms of SDT). The use of a numerical combination of agency and communion is however challenging because of the circularity of such values (see method section of this chapter), to which statistics based on normal distributions of linear data cannot be applied (Fischer, 1993).

## CONCLUDING REMARKS

The present study provides an insight in the origin of variance in students' controlled and autonomous motivation, and in the association of students' interpersonal perceptions of their teacher and controlled and autonomous

motivation. The class and the teacher play a considerable role in both controlled and autonomous motivation. Student perceptions of teacher agency and communion seem to be quite important factor of the teacher influence particularly on autonomous motivation, and therefore, teachers should put as much effort as possible into forming high quality relationships with their students. From an interpersonal perspective, a classroom environment that conveys both high levels of teacher agency and communion is the best way to support students autonomous motivation.

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