Effects of school composition and school climate on teacher expectations of students: A multilevel analysis

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HIGHLIGHTS

• School environment is associated with teacher expectations of students.
• School composition has an independent effect on teacher expectations of students.
• School educational climate has an independent effect on teacher expectations.
• School composition has an indirect effect on teacher expectations via school climate.

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ABSTRACT

Low teacher expectations negatively affect student outcomes and school effectiveness. The present study investigated the effect of educational climate and school socioeconomic, ethnic and academic composition on teacher expectations of student success. Multilevel analysis of teachers (N = 2666) nested within high schools (N = 71) demonstrated that school composition and school educational climate have an independent (a net) effect on teacher expectations. While academic composition had the greatest influence and suppressed the association between socioeconomic composition and the outcome, educational climate was also of importance. Additional mediation analyses revealed an indirect path of academic composition on teacher expectations via school educational climate.

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1. Introduction

Low teacher expectations are problematic for student outcomes and school effectiveness. They are associated with lower levels of student academic achievement, school engagement, learning opportunities in the classroom, and self-expectation (Agirdag, Van Houtte, & Van Avermaet, 2013; Archambault, Janosz, & Chouinard, 2012; Rosenthal & Jacobson, 1968). Teachers who do not believe in their students’ ability to succeed are also more likely to have less effective self-reported educational practices, and are less likely to create an effective instructional environment and high-quality socio-emotional climate in their classrooms (Proctor, 1984; Rubie-Davies, 2007). They also tend to provide lower quantity and quality of instructional input, feedback, and personal communication (Proctor, 1984; Rubie-Davies, 2007). Although teacher expectations should be as accurate as possible (Brophy, 1983; Jussim, 1986), helping teachers create more positive expectations of students is recommended (Archambault et al., 2012; Demanet & Van Houtte, 2012; Proctor, 1984; Weinstein, 2002). High teacher expectations figure among the key components of effective schooling, as these are positively associated with student achievement and effective teaching practices (Proctor, 1984; Rutter, Maughan, Mortimore, Ouston, & Smith, 1979; Teddlie & Reynolds, 2000b). Teacher expectations can be raised only through a better understanding of the factors influencing them. At the contextual level, those factors are especially relevant, as institutional and
societal arrangements orient and reinforce certain types of expectations and may even influence the occurrence of self-fulfilling prophecy (Weinstein, 2002). While school environment factors were suggested to be of importance (Finn, 1972; Proctor, 1984; Stevens, 2007; Trouilloud & Sarrazin, 2003), there is limited current empirical knowledge on the nature of relationship between school structure, school processes, and teacher expectations. Most studies on teacher expectations have focused on either one or the other elements that make up the school environment (Agirgad et al., 2013; Rubie-Davies, Flint, & McDonald, 2012; Rumberger & Palardy, 2005; Solomon, Battistich, & Hom, 1996). This was, however, identified as leading to bias in the attribution of the effect, as the exclusion of school structure can boost the effect of school process and vice-versa (Dumay et al., 2004). Therefore, the methodological limitation because they did not exclusively on the interpersonal nature of expectations, as they evaluated in such a manner as though the assessment were correct. Another, or of himself, which leads the evaluator to treat the person to another, since it distinguishes contextual in-use multilevel modeling. By sharing the same environment, et al.) suffer from a methodological limitation because they did not distinguish contextual in-use multilevel modeling. By sharing the same environment, et al.) suffer from a methodological limitation because they did not exclusively on the interpersonal nature of expectations, as they evaluated in such a manner as though the assessment were correct. Another, or of himself, which leads the evaluator to treat the person to another, since it distinguishes contextual in-use multilevel modeling. By sharing the same environment, et al.) suffer from a methodological limitation because they did not exclusively on the interpersonal nature of expectations, as they evaluated in such a manner as though the assessment were correct. Another, or of himself, which leads the evaluator to treat the person to another, since it distinguishes contextual in-use multilevel modeling. By sharing the same environment, et al.) suffer from a methodological limitation because they did not exclusively on the interpersonal nature of expectations, as they evaluated in such a manner as though the assessment were correct.

Teacher expectations take shape at the individual and group level. At the individual level, teacher expectations are the traditional view (Rubie-Davies et al., 2012; Van Houtte, 2011), and are based on the study of dyadic teacher-student interaction, where teachers express their expectations of a specific student (see Rosenthal & Jacobson, 1968). Expectations are also found at the group level when teachers form expectations for many students, usually a class (see Rubie-Davies, 2007) or school population (see Agirgad et al., 2013). Although these group-level teacher expectations have been investigated mostly in elementary school settings, (Agirgad et al., 2013; Diamond et al., 2004; Rubie-Davies, 2007, 2010; Rubie-Davies et al., 2012), they may be even more pronounced in high schools and other higher-educational contexts where teacher-student dyadic interactions are less frequent (Brophy, 1985). Group-level teacher expectations may have at least as great — if not a greater — impact than individual-level expectations (Brophy, 1983). First, group-level expectations serve as a comparative benchmark for teacher expectations of a specific student because these expectations set the norm or ideal characteristics of teachable students (Kornblau, 1982). Expectations for an individual student are therefore a deviation from this norm (Bressoux & Pansu, 2003; Brophy, 1983; Finn, 1972). Second, in comparison to expectations of an individual, those set for a group are communicated more directly, notably “through their influence on how much is taught by teachers and how much active student participation is permitted” (Cooper, 1985, p. 153). Such differential group treatment rooted in teacher expectations affects the climate and processes in the classroom which, in turn, not only impacts a few students but also impacts the entire group (Brophy, 1983; Brown & Medway, 2007; Rubie-Davies, 2007).

Whether students are over- or under-estimated, erroneous teacher expectations modestly but significantly influence their outcomes (Jussim, 1986; Jussim & Harber, 2005; Trouilloud & Sarrazin, 2003). Two mechanisms have been put forth to explain the effects of teacher expectations on both individuals and groups. Demonstrated in the famous Pygmalion in the Classroom study carried out by Rosenthal and Jacobson (1968), the first mechanism is self-fulfilling prophecy. According to this mechanism, erroneous belief “comes true” because, in this case, students believe their teachers and act accordingly (Jussim, 1986; Merton, 1948). As explained by Jussim (1986), self-fulfilling prophecy is manifested through students’ reaction to their teachers’ differential treatments. When low-expectation students receive less instructional feedback or less challenging subject matter, they may come to believe they are low achievers and behave as such. The second mechanism plays out when teacher expectations are shaped by perceptual biases (stereotypes, for example) that alter the teacher’s judgment of students or lead to misinterpretation or inaccurate evaluation of student behavior, achievement, attitude, or other outcomes (Jussim, 1989; Jussim & Eccles, 1995; Trouilloud & Sarrazin, 2003). In this case, teacher expectations would predict student achievement only when teachers evaluate a particular student, not when the same student is judged by a standardized test or another teacher. Unlike self-fulfilling prophecy, perceptual biases exist only in teachers’ mind because students do not modify their behavior according to their teachers’ biases (Jussim & Eccles, 1995). Nevertheless, such preconceptions may have an impact on student achievement. This would apply if teachers gave a grade that did not reflect the students’ real performance, but rather fit the teachers’ perceptual bias. Under other circumstances, the same students would get a grade that matched their performance.

1.1. Teacher expectations

Though many conceptualizations and operational measures of teacher expectations exist, all imply an anticipation of behavior and an evaluation of the judged person’s prior characteristics (Finn, 1972; Hoge, 1984). As Finn stated (1972, p. 390), expectations refer to “a conscious or unconscious evaluation which one person forms of another, or of himself, which leads the evaluator to treat the person evaluated in such a manner as though the assessment were correct.” While this definition includes self-expectations, others have focused exclusively on the interpersonal nature of expectations, as they relate to teachers evaluating students. More specifically, expectations can be thus defined as the teacher’s naturally occurring cognitive perceptions of students’ future ability to succeed. Most common measures of expectations relate to students’ academic and cognitive outcomes (school achievement, IQ, expected progress in school, self-concept, etc.).

Eccles (1995) points out that students’ self-concept is influenced by their own, teachers’, and peers’ expectations as well as the interactions between environments must be considered for a thorough understanding of human development, behaviors, and attitudes. From this point of view, teachers (the microsystem) are part of a school. Their traits interact with the school characteristics (the mesosystem) that influence teachers’ behaviors and attitudes. Previous empirical evidence also points toward an influence
of school environment on expectations, either on the creation (Agirdag et al., 2013; Finn, 1972; Newman, Rutter, & Smith, 1989; Stevens, 2007; Troulloud & Sarrazin, 2003; Weinstein, 2002) or the effect thereof (Brophy, 1983; Rubie-Davies, 2007; Weinstein, 2002; Weinstein, Gregory, & Strambler, 2004). Weinstein’s ecological paradigm of teacher expectations (2002) underscores just how important it is to examine the broader context of schools behind these expectations and their effects.

1.2.1. School structure

The school environment has three dimensions: physical and organizational environments (school structures), and socio-educational environment (school processes) (Janosz, George, & Parent, 1998; Odenakker & Van Damme, 2007). School structure refers to the most permanent and least flexible features of the organization, such as school size, architectural elements, and type of curriculum. These elements nevertheless affect individual behaviors and perceptions (Janosz et al., 1998).

Highlighted by Coleman et al. (1966), school composition was identified as the most, even the only, important factor in explaining why student outcomes differ between schools (Rutter et al., 1979; Teddlie & Reynolds, 2000a). The school composition or school mix effect refers to the collective, rather than the individual, influence of student characteristics and is partly a result of aggregation at the class or school level of students’ socioeconomic, ethnic, and academic/intellectual characteristics. School composition is generally studied in relation to individuals’ achievement, given that collective characteristics affect achievement beyond individual student characteristics (Thrupp et al., 2002).

In exposing the relationship between school composition and teacher expectations, empirical research has shown lower expectations in schools with greater proportions of ethnic minority, lower socioeconomic, or lower academic capability students (Agirdag et al., 2013; Diamond et al., 2004; Newman et al., 1989; Rumberger & Paldary, 2005; Solomon et al., 1996). Although some results indicate that academic composition has an equal or greater impact on teacher expectations than school socioeconomic composition (Agirdag et al., 2013; Newman et al., 1989), the interaction of compositional variables is rarely addressed. School socioeconomic composition is associated with academic achievement: students from high SES backgrounds usually do better in school (Sirin, 2005). Teachers base their expectations on perception of their students’ achievement (Proctor, 1984). Consequently, SES-composition might be related to teachers’ expectations via school academic composition.

1.2.2. School processes

School environment is also characterized by its organizational processes or, in other words, the values, climate, and practices (leadership, teacher cooperation, etc.) existing within the organization. Partly determined by organizational structure, school processes are dynamic, informal, and malleable (Janosz et al., 1998; Janosz & Leclerc, 1993); they are easier to address for intervention.

School climate is one of the traditional indicators used in school effectiveness research to reflect the processes of schooling (Brookover et al., 1978; Rutter et al., 1979). School climate is a school-level construct obtained through the aggregation of individual perceptions and thus is distinct from individual perception of school climate, which is an individual-level construct (Marsh et al., 2012). Individual perception reflects the psychological climate effect of the school, which is associated with work attitude, motivation, and performance (Parker et al., 2002). These school- and individual-level climates are conceptually and methodologically different (see Marsh et al., 2012; for details), and inform different processes.

Despite the complexity and variety of conceptualizing school climate (James & Jones, 1974; Janosz et al., 1998; Van Houtte, 2005; Zullig, Koopman, Patton, & Ubbes, 2010), researchers agree that this construct reflects the unique personality of a school, which is a social organization (Anderson, 1982; Hoy, Hannum, & Tschannen-Moran, 1998; Moos, 1979; Zullig et al., 2010). It is also widely accepted that school climate distinguishes schools from one another (Anderson, 1982; James & Jones, 1974; Janosz et al., 1998; Moos, 1979), is stable (Hoy et al., 1998; Jones et al., 1998; Marsh et al., 2012; Moos, 1979; Zullig et al., 2010). This focus on perceptions is crucial to distinguishing school climate from school culture. This latter is associated with shared beliefs and actions rather than perceptions of what others believe and do (Van Houtte, 2005; Van Houtte & Van Maele, 2011).

This study will focus on school climate as conceptualized through the perceptual measurement-organizational attribute approach (James & Jones, 1974). This framework describes climate as being shaped by members’ perceptions of the organization’s behaviors and internal policies. School climate reflects the descriptive norms, that is the perceptions of what is commonly done by others in a specific setting or situation (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007) and consequently guides organization members’ interpretation of situations and orient their actions. By reflecting the school’s values, norms, and expectations (Brookover et al., 1978; Zullig et al., 2010), school climate communicates the environment’s normative expectations and assists individuals in interpreting environment demands (Brookover et al., 1978; Janosz, Pascal, & Galand, 2012). School members are thus socialized within a specific climate and therefore internalize organizational standards. Perception of what is commonly approved or disapproved in the school may be somewhat more important than the norm itself, as it would seem that perception influences players and dictates their behaviors (Schultz et al., 2007). The expectations teachers create of their students would thus be influenced by the school’s perceived social norms that are reflected by the school climate.

Among the many types of school climates identified in the literature, such as safety, school connectedness, and social climate (Janosz et al., 1998; Zullig et al., 2010), positive school educational climate referring to perceptions of school norms and values regarding academic work is especially associated with high teacher expectations and student academic achievement (Anderson, 1982). It would appear that this type of school climate communicates certain standards about school work and ideal students’ abilities (Newman et al., 1989; Proctor, 1984) that are used, whether consciously or not, when forming expectations of students. Teachers who perceive other school members as valuing learning and academic achievement, engagement in academic work, and interpersonal respect have more chances to favor academically oriented pedagogical practices, and also create higher academic expectations of their students.
1.2.3. Indirect association of the influence of school structure on
teacher expectations through school processes

In the past, the effect of school structure has been studied for the
most part independently from the effect of school processes. However, new perspectives in school effectiveness research and
multilevel analysis development are now investigating their joint
effect (Dumay, 2004; Dumay & Dupriez, 2007; Dumay et al., 2010;
Opdenakker & Van Damme, 2001; Thrupp et al., 2002). Doing
otherwise could bias the results, notably by overestimating the
school composition effect when school processes are not controlled
for and, conversely, underestimating the effect of school processes
(Opdenakker & Van Damme, 2001; Opdenakker & Van Damme,
2007).

School composition influences school processes (Brookover et al.,
1978; Dumay, 2004; Dumay & Dupriez, 2007, 2008; Dumay
et al., 2010; Opdenakker & Van Damme, 2001; Rumberger &
Palardy, 2005; Solomon et al., 1996) given that “schools develop
processes that reflect their socioeconomic mix” (Thrupp et al.,
2002, p. 499). For example, it would seem that school climate is
forged by the norms, values, attitudes, and resources of the domi-
nant group within the school (Dumay, 2004; Thrupp et al., 2002).
Consequently, the effect of the school’s academic, ethnic, and eco-
nomic composition on individuals’ outcome is not direct, but rather
mediated by the school climate or by other school processes. In that
optic, though school composition and school climate are two
different aspects of school environment (Brookover et al., 1978),
they are interconnected and thus should be studied together.

In the empirical testing of their theoretical model Opdenakker
and Van Damme (2007) confirm that school composition, measured
through the cognitive ability of the students in the school, has an influence on school practices and therefore on stu-
dents’ achievement. However, the expected direct association be-
tween school composition and school educational climate is
surprisingly not significant. Rather, it is an indirect association that
can be seen through others’ organizational practices, such as
teacher cooperation and relational climate (Opdenakker & Van
Damme, 2007). Only a few studies have investigated the complex
relationships between school composition, school processes, and
teacher expectations. However, they are limited either by their
measure of school environment, their methodology, or their choice
of analysis.

Newman et al. (1989) analyzed school socioeconomic, ethnic, and
academic composition, as well as ten organizational processes,
including most notably an indicator of the school principal’s lead-
ership, the level of teachers’ influence in decision making, and an
orderly disciplinary climate. Teacher expectations were defined as
the perception of the students’ ability to learn what is taught (Newman et al., 1989). Their results demonstrated that teacher
expectations were not associated with school socioeconomic
composition, but rather with school academic and ethnic compo-
nition. The greater the percentage of students with high academic
ability at the start of school the greater the expectations. Only three
school processes were significant: schools with orderly teaching
environments and cooperation among teachers were two factors
positively associated with teacher expectations, while the fre-
quency of meetings was negative. Based on the standardized
regression coefficient values, Newman et al. (1989) concluded that
teacher expectations of students’ learning capacities were primarily
influenced by school academic composition, and that orderly
teaching environments reflecting academic emphasis was the
process with the greatest influence. These conclusions are, how-
ever, limited by the fact that school composition variables were
exclusively treated as control variables. This would negate the ex-
istence of a potential joint effect between school composition vari-
ables and organizational processes variables (Dumay & Dupriez,
2007). Since it increases the risk of violating the independence of
observation assumption, the absence of a multilevel model is also a
drawback of this study. Since teachers in the same school share the
same environment, their expectations may be similar and thus
interrelated.

Yet another study focused on how school ethnic and socioeconomic
composition could influence teacher expectations through their
impact on school organizational habitus (Diamond et al.,
2004). Organizational habitus, like school climate, is an important
element in the micro-political context of a school and acts as a
frame of reference in limiting the range and type of possible actions
according to group membership (Diamond et al., 2004). The con-
cclusions of this ethnographic study point toward the influence of
school composition on teacher expectations. In addition, different
organizational habituses were observed for different types of
school composition, suggesting a potential mediation effect
(Diamond et al., 2004). While these findings are in keeping with
anticipated outcomes, their qualitative nature limits their gener-
alization to other schools.

Though these studies both investigated the indirect effect of
school composition on teacher expectations at the group level
through school processes, more research is needed to fully under-
stand the nature of this relationship. While teacher judgments,
expectations, and perceptions about students are important, most
studies have searched for their consequences rather than investi-
gating their contextual origins. There is a lack of knowledge on the
association between school environmental factors and teacher
expectations, in particular expectations toward a group of students
(Agirdag et al., 2013; Rube-Davies et al., 2012; Van Houtte, 2011).
Existing empirical studies on the subject are limited by the paucity
of research focusing on high school settings, examining the envi-
ronment through the relationship between school structure and
processes, and using multilevel models, which would distinguish
the contextual influences from individual ones (Raudenbush &
Bryk, 2002).

2. Objectives and hypotheses

The general objective of this study was to gain a better under-
standing of relationships between school environment and teacher
expectations of students’ capacity to succeed. Specifically, we used
multilevel modeling to investigate the direct and indirect effects of
school structure (school ethnic, socioeconomic, and academic
composition) and school process (school educational climate) on
teacher expectations.

A first hypothesis predicted lower teacher expectations of stu-
dents’ capacity to succeed in schools where a majority of students
showed academic problems, came from low socioeconomic back-
grounds, or belonged to ethnic minorities (Agirdag et al., 2013).
Moreover, the influence of school socioeconomic status on teacher
expectations would be indirect, rather than direct, through school
academic composition (Agirdag et al., 2013; Newman et al., 1989).
A second hypothesis expected school climate to influence teacher
expectations, as it has been previously found to affect teacher be-
haviors, attitudes, values, and satisfaction (Anderson, 1982; Hoy
et al., 1998; James & Jones, 1974; Moos, 1979). A distinction was
made between the influence of school climate at the school level
(i.e., collective perceptions of school climate) and the individual
level (i.e., individual perception of school climate). A third hy-
pothesis predicted that the effect of school composition on teacher
expectations was mediated by school climate (Dumay, 2004;
Dumay & Dupriez, 2007, 2008; Opdenakker & Van Damme, 2001;
Thrupp et al., 2002). A fourth hypothesis postulated that struc-
ture and process variables made a unique contribution to the
outcome.
3. Methodology

3.1. Sample

Information on teachers and schools was collected in 2006–2007 through the evaluation of the New Approaches, New Solutions (NANS) intervention strategy, a governmental initiative aiming to improve student success in disadvantaged communities (Janosz et al., 2010). Following a stratified random-sampling procedure based on geographic location, size, and language, 61 schools were selected in 2001 (at baseline) from a pool of 199 high schools located in disadvantaged areas of Québec (Canada). An additional 10 schools were selected to compose the control group for the evaluation. Because of their lower socioeconomic status, experimental schools differed from comparison schools at baseline as they scored 8, 9, or 10 on the official decile rank of school socioeconomic index, compared to scores of 5, 6, and 7 for the comparison schools (Ministère de l’Éducation des Loisirs et du Sport (MELS), 2013). Based on information from the geographic units in the 2001 Census of Canada, the index is composed of the proportion of families with children whose mothers had no high school degree and of households with parents who were unemployed at the time of data collection. Higher scores correspond to lower socioeconomic status. In 2006, 60% of all the schools still had a very low socioeconomic status. School socioeconomic composition, measured by the proportion of students from low SES background, was significantly different for comparison (17.43%) and experimental (18.54%) schools. Further regression analyses reveal no other significant differences between control and experimental schools regarding teacher expectations ($M = 4.45$ vs. $M = 4.26$, respectively $p > 0.05$), school educational climate ($M = 0.07$ vs. $M = 0.02$ respectively, $p > 0.05$), and other factors of interest. Less than one third (28%) of schools were located in a large urban center ($N > 125,000$ inhabitants), 16% belonged to Anglophone school boards (all others were in Francophone districts). Coming from these 71 schools, our study sample is composed of 2666 teachers, mostly women (60%) between 31 and 40 years old with an average of 7–10 years of high school teaching experience. Only a minority (18%) were teaching students with special education needs. Table 1 synthesizes the information about teacher-level and school-level variables.

3.2. Teacher-level variables

Most information about teachers comes from the Socio-Educational Environment Questionnaire (SEQ) (Janosz et al., 2004), a survey designed to collect self-reported information notably on perceived school climate, educational practices and school problems.

Outcome. Teacher expectations for students’ capacity to succeed in school was assessed based on three items: Most students at this school have a) what it takes, personally and socially, to successfully complete their secondary studies; b) the competencies required to attain the learning objectives for their grade level; and c) the potential to succeed in school. Teachers indicated their expectations by using a 6-point Likert scale ($1 = \text{strongly disagree}$ and $6 = \text{strongly agree}$). Scores were averaged on a scale with a Cronbach alpha of 0.86. Mean expectation score is 4.15 ($SD = 1$), which correspond to “somewhat agree.”

Perceived educational climate. Teacher perceptions of educational climate were measured with four items: At this school: a) success is at the heart of teachers’ priorities; b) students can really learn and get a good education; c) everything is done to ensure that students are successful in their secondary studies; and d) students are provided with a stimulating environment. These items reflect teachers’ individual perceptions of how the school environment values learning and education as well as how it offers a quality environment focusing on student’s achievement. Scores on a 6-point Likert scale ($0 = \text{strongly disagree}$ and $5 = \text{strongly agree}$) were averaged and led to a Cronbach’s alpha of 0.87. Following Marsh et al. (2012), this variable was centered on the group mean (e.g., mean of each school) to reflect the discrepancy between individual perception of climate and the mean perception of climate in their respective school (Brière, Pascal, Dupéré, & Janosz, 2013; Marsh et al., 2012). This choice of centering also serves a methodological purpose as it allows for a perfect disentanglement of this psychological climate from the school-level educational climate (Marsh et al., 2012).

Control variables. Despite surprisingly inconclusive findings on the association of teachers’ characteristics and expectations (Agirdag et al., 2013; Rubie-Davies et al., 2012), gender, age, and the type of class taught were controlled for. Gender was coded 1 for men and 0 for women. Teacher age at the time of survey was self-reported on a 4-point scale (20–30; 31–40; 41–50; 51+). Age was favored over years of experience because nearly 25% of these data was missing. As both age and experience were highly correlated ($r = 0.75$, $p < 0.001$), age was used as a proxy for years of experience. Finally, a distinction was made between teachers who taught in a class for students with special education needs (1) and other types of classes (0), namely regular, enriched, professional, and others.

3.3. School-level variables

Following recommendations made by Thrupp et al. (2002), more than one indicator of school composition was included in the analyses. School ethnic composition refers to the ethnic characteristics of students aggregated at the school level. Information about ethnicity came from students’ self-reported information on ethnic background combined with official school registry information about students’ origins. When a contradiction occurred between these two sources, the latter prevailed. For each school, the number

<table>
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</table>

- Non-applicable.
- Amount of missing values.

...
of students from ethnic minorities was summed and converted to a percentage based on the total number of students in the school. As presented in Table 1, mean proportion of students from ethnic minorities was 15.6% (SD = 21.6). While most schools counted no or a very low percentage of ethnic minorities, others had up to 83%. This led to a highly asymmetric variable, which was corrected by creating a binary variable with a cutting-point at half a standard deviation above the mean. Thus, schools with 10% ethnic minorities or more were coded 1 (n = 21; 30%) and the others 0 (n = 50; 70%).

School socioeconomic composition refers to students’ socioeconomic status (SES) aggregated at the school level. SES is a multidimensional concept, which can be measured by a diversity of indicators (Siring, 2005). To decrease the risk of overestimating its effect, it is considered best to measure SES using more than one indicator from multiple types (e.g. economic, cognitive, and cultural capital indicators) (Dumay et al., 2010; Nash, 2003; Siring, 2005). Based on these recommendations, a four-variable index of family deprivation was created from a) parental level of schooling, b) parental level of occupational prestige, c) family wealth, and d) educational resources within the household. Information was self-reported by students when they began their participation in the research project. Students were identified as coming from a disadvantaged family if they had a mean score of one standard deviation below the mean on the deprivation index. They were at risk if parents were without a high-school diploma and if their scores were below one standard-deviation from the mean on measures of family wealth, educational resources, and parental level of occupational prestige. For each school, the total number of students from disadvantaged socioeconomic backgrounds was converted to a percentage, based on the total number of students in the school. As shown in Table 1, the percentage of students in a school coming from a disadvantaged family ranged from 7.7 to 32.8% with a mean of 17.1% (SD = 5).

School academic composition refers to students’ academic difficulties aggregated at the school level. An index of school difficulties was created from the percentage of students that had dropped out of the school, been held back in school, achieved a low score (one standard deviation below the mean) on the logic reasoning scale (Raven scale), and who were labeled with the official governmental designation “Students With Handicaps, Social Maladjustments or Learning Difficulties.” For each school, the percentage of students with academic difficulties was estimated based on their total number divided by the total number of students in the school. As presented in Table 1, the percentage of students having academic difficulties per school varies from 8.8 to 45.3% of students, with a mean of 19.9% (SD = 7.3%).

School educational climate represents shared perceptions between all members of a school regarding how learning and education are valued within the school environment (Janosz et al., 1998). Students and adults (teachers, professionals, and principals) within the school reported their perception of the school educational climate on the four-item scale presented above (see Perceived educational climate). However, Item A differs for students: “At this school, we feel it’s important to study and earn a diploma”). Each school was given a score of educational climate obtained from the aggregation of all these individual perceptions. We argue that perceptions of school climate would, of course, reflect only some individuals within the school. Our decision to aggregate students’ and adults’ perceptions at the school level was reinforced by two statistical procedures. First, using a one-way analysis of variance, we assessed the reliability of group means by estimating an index of Mean Rater Reliability (MRR) (Glick, 1985; Squires et al., 2013). Aggregation of individual perceptions at the school level is possible only when the MRR score is higher than 0.60, as this would indicate that perceptions are truly shared amongst individuals within a school (Glick, 1985). The school educational climate scale obtained with all school members reached an MRR of 0.95 (just students came to 0.95 and just adults obtained 0.89). Secondly, we tested for the correlation between school educational climate based on students only and adults only. The correlation of 0.73 indicated a strong positive association between students’ perceptions and those of adults.

School educational climate is unique to each school. It differs from individual perception of educational climate as it is a school-level variable that is formed by accounting for the perceptions of all school members. This variable was centered on the grand mean (M = 4.6).

Control variables. School size reports the total number of students enrolled in the school as reported by official authorities. Mean school size was 804 students (SD = 582), with a range from 39 to 3342 students per school. School location indicates whether the school is located in a large urban center (N > 125,000 inhabitants) (coded 1) or a smaller one (coded 0). School location and school size were controlled for because in Québec students that hail from ethnic minorities live mostly in large urban centers and attend larger schools (Page, McAndrew, Jodoin, & Lemire, 1999).

3.4. Data analyses
Because the data have a hierarchical structure with teachers nested within schools, multilevel analysis (Raudenbush & Bryk, 2002) was favored to limit possible bias resulting from the dependency of the observations (Bickel, 2007; Box & Kreft, 1994). This analysis also divides the variance of the dependent variable between the levels of the analysis, which was necessary for the purposes of this study. Analyses were done with SAS 9.3 software and PROC MIXED procedure (SAS Institute Inc., 2002–2010). Variables were introduced progressively into the analyses.

Table 3 presents analyses for the first objective. School composition variables were added separately followed by a model (Model D) simultaneously introducing the composition variables and testing the indirect effect of school socioeconomic composition on outcome through school academic composition. Table 4 shows the models used to test for the second and third objectives: Model E refers to the effect of school climate on teacher expectations, while Model F tests the indirect effect of respectively school academic and school ethnic composition on teacher expectations through school climate. Instead of opting for the more traditional approaches developed notably by Baron and Kenny (1986) and Sobel (1982), the indirect effect was tested using a modern resampling procedure proposed by Hayes (2009, 2012). This new method estimates the confidence intervals of the indirect effect, through a bootstrapping method with more than 1000 iterations. Concretely, it draws many samples from the original one (considered here as a “miniature population”), then calculates the indirect effect on these k samples (corresponding to the number of iterations) which provides k estimates of the indirect effect. From these, the resampling procedure identifies confidence intervals to infer the indirect effect in the

Table 2
<table>
<thead>
<tr>
<th>Covariance parameters</th>
<th>Covariance parameter estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subject Estimate</td>
<td>SE</td>
</tr>
<tr>
<td>Inter-schools’ variance ((\sigma^2))</td>
<td>CODE</td>
</tr>
<tr>
<td>Within-school’s variance ((\sigma^2))</td>
<td>0.8916</td>
</tr>
</tbody>
</table>
Table 3
Results of the multilevel analysis of teacher expectations (N schools = 71; N teachers = 2666).

<table>
<thead>
<tr>
<th></th>
<th>Controls (A)</th>
<th>Ethnic and SES (B)</th>
<th>Academic (C)</th>
<th>School composition (D)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>4.33 (0.07)</td>
<td>4.31 (0.07)</td>
<td>4.26 (0.07)</td>
<td>4.28 (0.07)</td>
</tr>
<tr>
<td>Level 2 fixed effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School ethnic composition</td>
<td>–0.41 (0.13)</td>
<td></td>
<td>–0.35 (0.13)</td>
<td></td>
</tr>
<tr>
<td>School socioeconomic composition</td>
<td>–0.03 (0.01)</td>
<td></td>
<td>0.00 (0.01)</td>
<td></td>
</tr>
<tr>
<td>School academic composition</td>
<td></td>
<td>–0.04 (0.01)</td>
<td>–0.04 (0.01)</td>
<td></td>
</tr>
<tr>
<td>School size</td>
<td>0.00 (0.00)</td>
<td>0.00 (0.00)</td>
<td>0.00 (0.00)</td>
<td></td>
</tr>
<tr>
<td>School location (&gt;125,000 inhabitants)</td>
<td>–0.58 (0.13)</td>
<td>–0.07 (0.16)</td>
<td>–0.33 (0.09)</td>
<td>–0.04 (0.16)</td>
</tr>
<tr>
<td>Level 1 fixed effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (Men)</td>
<td>0.22 (0.04)</td>
<td>0.22 (0.04)</td>
<td>0.22 (0.04)</td>
<td>0.22 (0.04)</td>
</tr>
<tr>
<td>Age</td>
<td>–0.04 (0.02)</td>
<td>–0.04 (0.02)</td>
<td>–0.04 (0.02)</td>
<td>–0.04 (0.02)</td>
</tr>
<tr>
<td>Teach in a class for students with special needs</td>
<td>–0.03 (0.05)</td>
<td>–0.03 (0.05)</td>
<td>–0.02 (0.05)</td>
<td>–0.02 (0.05)</td>
</tr>
<tr>
<td>Random effects</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between-schools’ variance ($\tau_{00}$)</td>
<td>0.16 (0.03)</td>
<td>0.12 (0.03)</td>
<td>0.08 (0.02)</td>
<td>0.07 (0.02)</td>
</tr>
<tr>
<td>Within-school’s variance ($\sigma^2$)</td>
<td>0.89 (0.02)</td>
<td>0.89 (0.02)</td>
<td>0.89 (0.02)</td>
<td>0.89 (0.02)</td>
</tr>
<tr>
<td>Deviance (~2 Log Likelihood)</td>
<td>7234.0</td>
<td>7222.7</td>
<td>7202.3</td>
<td>7197.3</td>
</tr>
</tbody>
</table>

Note: Parameter estimate standard errors listed in parentheses.
*p < 0.05; **p < 0.01; ***p < 0.001; -p < 0.10.

Table 4
Results of the multilevel analysis for teacher expectations, school educational climate, and school composition (N schools = 71; N teachers = 2666).

<table>
<thead>
<tr>
<th></th>
<th>Climate (E)</th>
<th>Final Model (F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept</td>
<td>4.20 (0.07)</td>
<td>4.18 (0.07)</td>
</tr>
<tr>
<td>Level 2 fixed effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School ethnic composition</td>
<td>–0.25 (0.13)</td>
<td></td>
</tr>
<tr>
<td>School socioeconomic composition</td>
<td>–0.01 (0.01)</td>
<td></td>
</tr>
<tr>
<td>School academic composition</td>
<td>–0.03 (0.01)</td>
<td></td>
</tr>
<tr>
<td>Educational school climate</td>
<td>0.80 (0.21)</td>
<td>0.56 (0.19)</td>
</tr>
<tr>
<td>School size</td>
<td>0.00 (0.00)</td>
<td></td>
</tr>
<tr>
<td>School location (&gt;125,000 inhabitants)</td>
<td>–0.33 (0.12)</td>
<td>0.05 (0.14)</td>
</tr>
<tr>
<td>Level 1 fixed effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived educational climate</td>
<td>0.52 (0.03)</td>
<td>0.52 (0.03)</td>
</tr>
<tr>
<td>Gender (Men)</td>
<td>0.26 (0.04)</td>
<td>0.26 (0.04)</td>
</tr>
<tr>
<td>Age</td>
<td>–0.04 (0.02)</td>
<td>–0.04 (0.02)</td>
</tr>
<tr>
<td>Teach in a class for students with special needs</td>
<td>–0.01 (0.05)</td>
<td>0.00 (0.05)</td>
</tr>
<tr>
<td>Random effects</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between-schools’ variance ($\tau_{00}$)</td>
<td>0.12 (0.03)</td>
<td>0.06 (0.02)</td>
</tr>
<tr>
<td>Within-school’s variance ($\sigma^2$)</td>
<td>0.75 (0.02)</td>
<td>0.75 (0.02)</td>
</tr>
<tr>
<td>Deviance (~2 Log Likelihood)</td>
<td>6747.8</td>
<td>6715.4</td>
</tr>
</tbody>
</table>

Note: Parameter estimate standard errors listed in parentheses.
*p < 0.05; **p < 0.01; ***p < 0.001; -p < 0.10.

population (Hayes, 2009). Compared with traditional methods, this modern estimation of indirect effect has increased power to detect mediation, relax assumption of the shape of the sampling distribution of the indirect effect, and allows simultaneous introduction of multiple mediators and more complex design, including moderated-mediation (Preacher, Rucker, & Hayes, 2007). These analyses were performed using the PROCESS program adapted to SAS (Hayes, 2012).

Finally, the net effect of school composition and school climate was estimated (Dumay & Dupriez, 2007, 2008; Opdenakker & Van Damme, 2001). Net effect refers to the portion of the variance explained by one single variable, free of the effects of the other variables in the model. It is obtained by subtracting the explained between-school variance of one reduced model from the between-school variance of the full model.

Table 5
Percentage of the between-school variance explained by net effect of school composition and net effect of school climate.

<table>
<thead>
<tr>
<th></th>
<th>Proportion (%) of between-school variance explained</th>
<th>Models’ between-variance compared</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unique effect of (free of)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic composition (control variables)</td>
<td>4.30</td>
<td>D – [A new model including variables of model C plus SES]</td>
</tr>
<tr>
<td>Socioeconomic composition (control variables)</td>
<td>0.05</td>
<td>D – [A new model including variables of model C plus Ethnic]</td>
</tr>
<tr>
<td>Academic composition (control variables)</td>
<td>21.67</td>
<td>D – B</td>
</tr>
<tr>
<td>School composition (school climate and control variables)</td>
<td>25.80</td>
<td>F – E</td>
</tr>
<tr>
<td>School educational climate (control variables)</td>
<td>7.44</td>
<td>F – [A new model including variables of model D and climate at level-1]</td>
</tr>
</tbody>
</table>

* Model not shown; used only to estimate the unique effect.
school variance associated with the full model. All comparisons are explicitly presented in Table 5.

4. Results

4.1. School environment and teacher expectations

An unconditional model was used to assess the degree of similarity between people of a same group and decompose the outcome variance between levels of analysis (Raudenbush & Bryk, 2002). Its results, shown in Table 2, indicated that 20.5% (intraclass correlation coefficient $\rho = 0.205$) of the total variation of teacher expectations of students’ capacity to succeed was situated between schools ($\tau_{00} = 0.23, SE = 0.04, p \leq 0.001$), while 79.5% was located within schools ($\sigma^2 = 0.89, SE = 0.02, p \leq 0.001$). This result essentially confirmed the need for a multilevel analysis, as there was an obvious dependency of observations: expectations of teachers within a same school were not independent, but rather interrelated. The estimated value of the intercept was 4.19, indicating that the overall mean score for teacher expectations of students’ capacity to succeed was positive and moderately high, corresponding to “Somewhat agree” on the 6-point Likert scale.

4.2. Control variables and teacher expectations

The first model included school- and teacher-level control variables. School size and location (model A; $\tau_{00} = 0.16, SE = 0.03, p < 0.001$) diminished the between-school variance of 30.4% when compared with the unconditional model. Among these variables, school size had no effect on expectations, while school location in a large urban center was negatively associated with expectations, but that effect disappeared when school composition variables were also added to the analysis.

Teachers’ gender, age, and the type of class taught (model A; $\sigma^2 = 0.89, SE = 0.02, p < 0.001$) reduced the within-school variance by less than 1% when compared with the unconditional model. Teacher gender is significantly associated with teacher expectations: Compared to women, men had more positive expectations for students’ capacity to succeed. Age was marginally associated with expectations: Older teachers had fewer positive expectations than younger teachers. The type of class taught was not associated with teacher expectations.

4.3. School composition and teacher expectations

The following two models (Models B and C presented in Table 3) assessed the relationship between school composition variables (i.e., ethnic, socioeconomic, and academic profiles) and teacher expectations of students, controlling for school size and location. As expected, each school composition variable was negatively associated with teacher expectations: highest was the proportion of students from ethnic minorities or low socioeconomic background (Model B) or with school difficulties (Model C), the least favorable were teacher expectations of students’ capacity to succeed.

Model D tested for a potential mediation effect of school academic composition on the relationship between teacher expectations of students’ capacity to succeed and school socioeconomic composition. Results of the bootstrapping procedure (Hayes, 2012) revealed that the direct effect of school socioeconomic composition on teacher expectations was no longer significant (direct effect $\beta = 0.004, SE = 0.00, p < 0.05$, bootstrapped 95% CI based on 5000 iterations = $[-0.006; 0.015]$). However, the indirect effect through school academic composition was significant (indirect effect $\beta = -0.04$, bootstrapped 95% CI based on 5000 iterations = $[-0.043; -0.030]$).

4.4. Educational climate and teacher expectations

School educational climate was assessed at the individual level, where it represented the psychological climate perceived by the teacher. It was also assessed at the school level, where it corresponds to school educational climate, as measured by all people in the school. Results are shown in Model E in Table 4.

At the teacher level, the relationship between perceived educational climate and teacher expectations was assessed, controlling for age, gender, and type of class taught. Results indicated a significant association: The more positive teachers perceived the educational climate, the more positive their expectations of students. This model (model E; $\sigma^2 = 0.75, SE = 0.02, p \leq 0.001$) reduced the within-school variance (i.e., the difference that exists between teachers in a same school) by 16% when compared with the unconditional model.

At the school level, this model assessed the relationship between school educational climate and teacher expectations, controlling for school size and location. Results again indicated a positive relationship: A positive school educational climate raised the teachers’ expectations of students. This model (model E; $\tau_{00} = 0.12, SE = 0.03, p \leq 0.001$) explained 48% of the between-school variance, when compared with the unconditional model.

4.5. School composition, school educational climate, and teacher expectations

The final model (Model F in Table 4) combined school composition and school climate variables. Results ($\tau_{00} = 0.06, SE = 0.02, p < 0.001$) showed a reduction of the between-school variance of 73.8%, when compared with the unconditional model. This result indicated that characteristics of a school environment explain much of the differences between schools when it comes to teacher expectations of students’ capability to succeed.

The aim of this final model was to disentangle the relationship between school composition variables and school educational climate with regards to the outcome, by estimating net effects. The second was to test school educational climate for the indirect effect of school composition variables on teacher expectations.

4.5.1. Net effects

As shown in Table 5, school academic composition, school ethnic composition, and school educational climate have an independent (a net) effect on teacher expectations of students’ ability to succeed. The effect of the school composition net of school climate is greater (25.8%) than that of the school educational climate net of school composition (7.5%).

Among these three indicators of school composition, academic composition appeared to be the most related to teacher expectations. Its introduction in the analysis, net of the control variables, reduced the between-school variance of 21.7%. In comparison, the net effects of school ethnic and socioeconomic composition were 4.3% and less than 1% respectively (see Table 5).

4.5.2. Indirect effect of school composition on teacher expectations through school climate

Results of the resampling procedure (Hayes, 2012) confirmed the presence of an indirect effect of school socioeconomic, academic, and ethnic composition on teacher expectations through school educational climate.

Two mediators were identified in Model F: a) school academic composition to control for the causal path we had previously tested...
in Model D and b) school educational climate to test for the indirect effect of school composition through school process. Results confirmed that teacher expectations were indeed indirectly influenced by the following path: school socioeconomic composition → school academic composition → school educational climate (indirect effect \( b = -0.011 \), bootstrapped 95% CI based on 5000 iterations \([-0.014; -0.008]\)). Moreover, the results indicated an indirect effect of school socioeconomic composition (independent of school academic composition) on teacher expectations through school educational climate (indirect effect \( b = 0.01 \), bootstrapped 95% CI based on 5000 iterations \([0.008; 0.015]\)). School academic composition still has a direct effect on teacher expectations (direct effect \( b = -0.03 \), bootstrapped 95% CI based on 5000 iterations \([-0.036; -0.021]\)), as well as an indirect effect through educational climate (indirect effect \( b = -0.012 \), bootstrapped 95% CI based on 5000 iterations \([0.015; 0.008]\)). Finally, the indirect effect of the school ethnic composition, controlling for the other variables was tested. Results of the resampling procedure confirmed the direct influence of school ethnic composition on teacher expectations (direct effect \( b = -0.328 \), bootstrapped 95% CI based on 5000 iterations \([-0.462; -0.193]\)), but also revealed its indirect effect through school educational climate (indirect effect \( b = -0.11 \), bootstrapped 95% CI based on 5000 iterations \([-0.148; -0.072]\)).

5. Discussion

High teacher expectations of students are associated with a higher level of student achievement, which make such expectations a key condition for effective schooling (Proctor, 1984; Rutter et al., 1979; Toddle & Reynolds, 2000b). To promote positive expectations of all students, a better understanding of what determines expectations is essential. This should be promoted notably at the contextual level where empirical findings are limited (McKown & Weinstein, 2008; Weinstein, 2002). The goal of this study was to shed light on factors in the school environment that could determine teacher expectations of students’ ability to succeed. With the help of a multilevel model of teachers nested within schools, results showed that teacher expectations are influenced by the school environment, particularly by the characteristics of the school composition and school educational climate.

5.1. Influence of school environment on teacher expectations

The results confirmed that school environment has an influence on teacher expectations, as school accounts for 21% of the variance of teacher expectations of students’ ability to succeed. Though a Belgian study (Agirdag et al., 2013) found a higher proportion of between-school variance (46%) than this study, this can be explained by differences in the two education systems. The school effect’s magnitude is proportionally associated with schools’ level of autonomy (Bressoux, 1995) in defining their curriculum, pedagogical practices, educational orientations, and so on. The Quebec education system presents some decentralization, but not comparable to that found in Belgium where schools have a good deal of autonomy and greater chances of differing from one another (Dumay & Dupriez, 2008). A further reason for this discrepancy in proportions may come from the relative homogeneity of school corpus in both Canada (Perry, 2012) and Quebec, especially outside of the Greater Montréal area (Page et al., 1999). This sample may have amplified this characteristic since it was selected on a fairly representative but homogeneous population of schools from low socioeconomic contexts with relatively few ethnic minorities. In comparison, Belgian schools (at least in Flanders) are highly segregated on the basis of students’ socioeconomic and ethnic characteristics; this is reinforced in high schools by rigid tracking that takes place between schools (Agirdag et al., 2013; Van Houtte, 2004).

Although this study concludes that school environment is important in determining teacher expectations, this effect remains modest. Most of the variance in teacher expectations (nearly 80%) is associated with individual characteristics (gender, age, individual perception of school climate, and so on).

5.2. School composition, school educational climate, and teacher expectations

As expected, the collective effect of students’ characteristics was associated with teacher expectations (Agirdag et al., 2013; Diamond et al., 2004; Newman et al., 1989; Rumberger & Palardy, 2005; Solomon et al., 1996). Specifically, school academic composition, measured according to the percentage of students with school difficulties in a given school, had the greatest effect on expectations over that of school socioeconomic and ethnic composition. First, it totally removed the influence of school socioeconomic composition and, second, it explained more than 20% of the between-school variance of teacher expectations. In keeping with other research findings suggesting that school academic composition has a greater effect than socioeconomic composition on teacher expectations (Agirdag et al., 2013; Newman et al., 1989; Opdenakker & Van Damme, 2007), this result only confirms the importance of students’ prior academic achievement for teacher expectations (Braun, 1976; Brophy, 1983; Dusek & Joseph, 1983; Finn, 1972; Jussim, 1986; Trouilloud & Sarrazin, 2003). Although there is still a strong and well-documented association between socioeconomic status and the prevalence of academic problems (Opdenakker & Van Damme, 2007; Sirin, 2005), teacher expectations seem to be less influenced by socioeconomic status than by students’ academic problems, which is not surprising given the high correlation between school difficulties and students’ cognitive abilities (Opdenakker & Van Damme, 2007).

This finding also reinforces the significance of students’ prior academic achievement at the collective level. Teachers in schools with a large proportion of students showing no academic problems or low-level difficulties have higher expectations of their students’ ability to succeed. Conversely, teacher expectations are lower in schools where students grapple with academic problems. This supports the idea that teachers are able to objectively assess their students, as teacher expectations have been found to be generally accurate and reflect students’ true capacities (Jussim & Harber, 2005). However, the mechanisms underlying this accuracy of expectations toward low-ability students are still misunderstood. More research is needed to determine whether low expectations for these students are truly related to students’ background or whether they reflect students’ anti-school culture or some stereotypes and labels reinforced by the school system making it normal to have lower expectations for low-achieving groups (Van Houtte, Demanet, & Stevens, 2013).

Beyond the influence of academic composition, the limited influence of students’ socioeconomic background on teacher expectations could also result from the homogeneity of the current sample on the socioeconomic scale, as most of the selected schools were located in disadvantaged areas. As suggested by Thrupp et al. (2002), only a sample including schools from both ends of the socioeconomic spectrum gives a realistic view of school composition effect.

School ethnic composition had a small but significant negative effect on teacher expectations. This would indicate that teachers working in schools made up of more than 10% ethnic minorities had fewer positive expectations for students’ capacity to succeed. This
small effect can also be explained by the nature of the sample, given that only a few schools had a large number of ethnic minority students. Nevertheless, this is in keeping with previous findings reporting lower expectations for African-American and Latin American students, especially in low-income schools, when compared to European American and Asian American students (Diamond et al., 2004; McKown & Weinstein, 2008; Solomon et al., 1996).

The results also emphasized the independent influence of school educational climate on teacher expectations. This supports findings by Newman et al. (1989), who highlighted the importance of an orderly teaching environment in forming teacher expectations. The teachers in schools with “better” educational climates, that is where high achievement, learning, school engagement, and perseverance were valued, had higher expectations for students’ ability to succeed. Such a climate influences individuals within the school since it communicates “predictions for student performance, as well as beliefs regarding teachers’ instructional capacities vis-à-vis the presumed learning capabilities of the student population.” (Proctor, 1984, p. 475). Following the recommendation of Marsh et al. (2012), a distinction was made between the effects of school climate as a school construct and the individual perception of that school climate (an individual construct). The results demonstrated that both levels of climate had an impact on teacher expectations, but that the importance of individual-level perception was greater as reported by the value of the standardized coefficients (not shown). This is not surprising since previous results have already shown that teacher expectations are mostly explained by individual-level variables (Braun, 1976; Brophy, 1983; Dusek & Joseph, 1983; Finn, 1972; Jussim, 1986; Trouilloud & Sarrazin, 2003). Individual teachers’ psychological climate is positively associated with their expectations for students’ ability to succeed: Teachers with the best perceptions about their work environment hold the highest expectations of their students.

While both school structures and school processes have an impact on teacher expectations, results of the net effects indicated that school composition effect is more important than those of school climate. However, the results also demonstrated that it is the indirect effect of school composition on teacher expectations through school educational climate that has the greatest influence in creating teacher expectations for students’ ability to succeed. This reinforces previous findings that the characteristics of the school corpus influence the school’s climate (Diamond et al., 2004; Dumay, 2004; Dumay & Dupriez, 2007, 2008; Dumay et al., 2010; Opdenakker & Van Damme, 2001; Thrupp et al., 2002) and that schools tend to respond to the demands of their students (Rumberger & Palardy, 2005). When the school’s dominant group has a high level of cultural capital, high expectations of themselves (going to college, expected years of schooling), higher academic performance and values school work, and efforts a climate of high educational expectations is reinforced. Teachers would then react to this climate of high expectations and high attainments and develop more positive expectations of their students. This adheres to the observation that school norms stem from the norms and culture of the dominant group within the school (Dumay, 2004).

5.3. Strengths, limits, and future research

This study extended knowledge of the contextual origins of teacher expectations and knowledge of possible causal mechanisms between school composition and school processes. The inclusion of three distinct measures of school composition, the use of school educational climate as an indicator of school processes, the combination of school composition and school climate in the same analysis, the use of group-level expectations within a high-school context, and the use of multilevel analysis are the strengths of this study.

However, this study has some limitations. Its correlational nature makes it difficult, perhaps impossible, to draw any conclusion as to the causality chain in the relationship between school composition, school climate and teacher expectations. Indeed, the study focused on only one aspect. School composition influenced school climate, which, in turn, mediated the association between school-mix and expectations. The opposite hypothesis (that school climate attracts students with specific characteristics, which in turn influences teacher expectations) could also be true (Dumay & Dupriez, 2007, 2008). Only longitudinal studies could help determine which element comes first.

The measure of school processes was limited in that it refers only to school climate. Conceptualized through perceptual measurement, it could be argued that the perceptions were dependent on who was assessing the climate, given that perceptions are based on individual’s previous experience, values, and characteristics (Anderson, 1982). Consequently, the accuracy of climate may be disputable. However, this does not seem the case here, as the mean rater reliability score of school climate was high, which means there was a good agreement between individuals within the same school. Moreover, taking other measures of school processes such as school culture into account would have deepened the knowledge and increased the understanding of the effect of school processes on teacher expectations. Defined as shared beliefs and measured by means of “what members think and believe themselves” (Van Houtte, 2005, p. 75), school culture would have provided extra information about the educational practices used within the school (Van Houtte, 2005, 2011).

Finally, the small amount of available information on teacher characteristics was a limitation in explaining the variability between individuals’ expectations. Future studies should include information about teachers’ cognitions (for instance, the stereotypes and prejudices they hold). As Babad (1993) showed, teachers with rigid cognitions and dogmatic teaching style were reported to hold more stereotypic expectations of their students and to be less prone to changing their minds. Teachers’ psycho-social characteristics, as well as their socio-cultural backgrounds, could also have been aggregated at the school level to test for the effect of the composition of the teaching corps as determinants of teacher expectations.

6. Conclusion

This study indicated that teacher perceptions of the capacity of their students to learn was not only determined by structural indicators of that capacity (academic composition) but also determined by a collective perception of what school engagement and achievement (educational climate) was and could be expected of students. It is important to understand the origins of teacher perceptions as they are associated with students’ outcomes. Future research should be longitudinal and include more information about teacher characteristics. In addition, it should investigate whether other school characteristics, notably school culture or pedagogical practices, are also of importance.

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