

Class-wide behaviour management practices reported by pre-and elementary school teachers: Relations with individual and contextual characteristics

Les pratiques de gestion des comportement rapportées par les enseignants du préscolaire et du primaire : relations avec leurs caractéristiques individuelles et contextuelles

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[See table of contents](#)

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Article abstract

This study examined the use of inclusive practices by 1,373 Quebec teachers to promote prosocial behaviour, according to their individual and contextual characteristics. Two questionnaires were used: a sociodemographic and a validated Classroom Behaviour Management Practices Inventory (N = 68 items; 2 dimensions/7 scales $\alpha = .70$ to $.90$). Results from descriptive and univariate variance analysis showed that proactive /positive dimension practices (e.g., rules, instructional, reinforcement-based) are used more frequently than reductive dimension practices (e.g., educational consequences), although some of the latter are frequently used. Hierarchical models indicate significant interrelationships with teachers characteristics and the scales of classroom behaviour management practices, but for a small proportion of explained variance.

CLASS-WIDE BEHAVIOUR MANAGEMENT PRACTICES REPORTED BY PRE-AND ELEMENTARY SCHOOL TEACHERS : RELATIONS WITH INDIVIDUAL AND CONTEXTUAL CHARACTERISTICS.

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ABSTRACT. This study examined the use of inclusive practices by 1,373 Quebec teachers to promote prosocial behaviour, according to their individual and contextual characteristics. Two questionnaires were used: a sociodemographic and a validated Classroom Behaviour Management Practices Inventory ($N = 68$ items; 2 dimensions/7 scales $\alpha = .70$ to $.90$). Results from descriptive and univariate variance analysis showed that proactive /positive dimension practices (e.g., rules, instructional, reinforcement-based) are used more frequently than reductive dimension practices (e.g., educational consequences), although some of the latter are frequently used. Hierarchical models indicate significant interrelationships with teachers characteristics and the scales of classroom behaviour management practices, but for a small proportion of explained variance.

LES PRATIQUES DE GESTION DES COMPORTEMENT RAPPORTÉES PAR LES ENSEIGNANTS DU PRÉSCOLAIRE ET DU PRIMAIRE: RELATIONS AVEC LEURS CARACTÉRISTIQUES INDIVIDUELLES ET CONTEXTUELLES.

RÉSUMÉ. Cette étude a examiné la fréquence d'utilisation des pratiques promouvant les comportements prosociaux des élèves par 1 373 enseignants québécois. Deux questionnaires ont été utilisés : un questionnaire sociodémographique et un inventaire validé des pratiques de gestion du comportement ($N = 68$ items ; 2 dimensions/7 échelles $\alpha = .70$ à $.90$). Les résultats des analyses descriptives et de variances univariées ont montré que les pratiques proactives/positives (p. ex., règles et routines, félicitations) sont utilisées plus fréquemment que les pratiques réductrice (p. ex., conséquences éducatives), bien que ces dernières soient fréquemment utilisées. Les modèles hiérarchiques indiquent des interrelations significatives entre les caractéristiques des enseignants et les échelles de pratiques, mais pour une faible proportion de la variance expliquée.

Inclusive education (United Nations Educational, Scientific and Cultural Organization [UNESCO], 1994, 2009) and Quebec school system prioritizes the schooling of *all* students in the regular classroom (Ministère de l'Éducation et de l'Enseignement supérieur [MEES], 2017). In a regular classroom composed of students with diverse needs, more than a third have difficulty at some point during the year in establishing and maintaining satisfactory interpersonal relationships, following rules, or regulating their emotions or actions (Forness et al., 2012; Hornby & Evans, 2014). For 5-10% of students, these difficulties can result in persistent disruptive and problematic behaviours, such as, disobedience, defiance, motor agitation, or being off-task or inattentive (Ministère de l'Éducation, de l'Enseignement supérieur et de la Recherche [MEESR], 2015), which are likely to interfere with learning or classroom activities (Cooper & Cefai, 2013; Kauffman & Landrum, 2018).

Despite the large number of evidence-based practices known to promote psychosocial adjustment in school (Chaffee et al., 2017; Warmbold-Brann et al., 2017; Waschbusch et al., 2019), managing disruptive behaviour in the regular classroom remains a challenge for many teachers (Boutin et al., 2015). Rather than support the development of social-emotional competence and the acquisition of underlying social skills (Rose-Krasnor, 1997) such as prosocial behaviour (e.g. encouraging, sharing) or self-regulation, some teachers tend to fall back on strategies that focus on coercive / punitive practices to eliminate disruptive behaviours (Clunies-Ross et al., 2008; Michail, 2012). While the former are associated with greater opportunities for development and learning, and greater engagement in activities/task (Eisengerg et al., 2013), the latter are associated with a number of negative effects on students, notably decreased motivation to learn (Payne, 2015), decreased attention to activities/tasks (Leflot et al., 2010) and increased teacher-student conflict (Sellman, 2009). Managing disruptive behaviour is related to an increase in stress that can lead to burnout, (Fernet et al., 2012) professional disengagement and resignation (Kamanzi et al., 2017; Martin et al., 2012). While many teachers attribute their difficulties to a lack of preparation or training (Nadeau et al., 2015; State et al., 2011), few studies (still fewer in Quebec) have identified specific shortcomings or variables that may influence the implementation of behaviour management practices. These challenges experienced by both students and teachers point to the importance of establishing a picture of the use of practices to promote students' psychosocial adaptation in schools. This portrait will make it possible to highlight the needs in initial and in-service teachers' training, in order to provide a school environment conducive to development and learning, and thus positively influence the educational success for all students.

PROMOTING PSYCHOSOCIAL ADJUSTEMENT IN SCHOOL

Evidence-Based Practices

Evidence-based practices can be briefly defined as specific intervention strategies that are shown to be effective through controlled research in a defined population (Chambless & Hollon, 1998; Kratochwill et al., 2013). In the field of psychosocial adjustment in schools – whether for specific students, small groups of students, or class-wide – evidence-based practices largely arise from the behavioural sciences (Nadeau et al., 2020; Cooper et al., 2020; Kazdin, 2019). Practices can be framed in terms of two distinct intentions or expected effects on the student's observable behaviour: proactive / positive practices or reductive practices.

Proactive / positive practices encourage the emergence and maintenance of desired and prosocial behaviour and prevent the occurrence of disruptive behaviour. They may involve actions intended to facilitate the smooth running of an activity, such as organizing the environment and resources (e.g., furniture, space layout, material) (Office of Special Education Programs, 2015), setting and modeling clear rules and expectations (Gable et al., 2009), nurturing positive relationships (Mikulincer & Shaver, 2012), using positive attention and reinforcement (Sugai & Horner, 2009), or supporting self-control and self-regulation of students (Briesch & Chafouleas, 2009). This may also involve observing and describing the student's manifestation of a specific behaviour in different situations and identifying the factors / stimuli potentially related to reasons why it occurs at a specific time or in a specific environment (e.g. functional assessment; Steege et al., 2019).

Reductive practices aim to decrease the occurrence of a (mis)behaviour judged as problematic, difficult, or disruptive. Positive behavioural approaches do not support the use of this type of practice because they are perceived as punitive. However, reductive practices are still used and are not all the same (Drevon & Hixson, 2019). Practices identified as educational consequences involve actions designed to reach educational goals (e.g. social or emotional learning towards the desired behaviour) with the student. Logical and natural consequences, token economy, time-out from reinforcement and overcorrection, are examples intended to discourage the likelihood of a disruptive behaviour. To be consistent with educational consequences, practices must be planned, forewarned to the student, and used in conjunction with proactive and positive practices (Kazdin, 2019) as part of a comprehensive education plan (Kern & Chen, 2019) that supports the learning of an alternative and desired behaviour. For their part, coercive /punitive practices involve actions that occur in reaction to disruptive behaviour and are aimed at suppressing it while reactivating the teacher's authority. Threat or expulsion from school are examples that often negatively influence a student's personal dignity restrict access to meaningful opportunities. Indeed, their use raises ethical issues (Kazdin, 2019) and is considered incompatible with evidence-based practice. They tend to have limited effects in the short term. Most

importantly, they may have counterproductive effects on the teacher/student relationship over the long term, by incidentally creating a reinforcing effect on disruptive behaviour and increasing its occurrence rather than promoting more adaptive behaviour.

Teachers' Uses of Behaviour Management Practices

Due to the heterogeneity of classroom environments and students, teachers need to draw on a variety of evidence-based practices appropriate for students with emotional and behavioural needs. From the perspective of inclusive education and class-wide (universal) intervention, the terms “classroom management” and “behaviour management” are often used interchangeably to refer to “thoughtful, sequential and simultaneous acts performed by teachers to establish, maintain and restore the learning environment” (Gaudreau, 2017). Some studies carried out in the United States have described the frequency of the use of behaviour management practices by teachers. Their findings are summarized here according to teachers' individual characteristics (e.g., amount of teaching experience) or contextual characteristics (e.g., grade level, setting [general; special], training opportunities) known to influence the use of practices (Aarons et al., 2011).

Gable et al. (2012) explored the frequency of reported practices by 1,588 general education teachers and 1,472 special education teachers at the preschool, elementary and high school levels, without support statistical differences according to school settings or teaching level. Among 20 instructional of behaviour practices, the most frequently used practices were: establishing clear rules and expectations, providing support and adjusting educational requirements, supporting positive behaviour, setting up a behaviour education plan, and using specific instructions to develop learning and study skills. The least used practices included group contingency programs, observational / functional assessment, pre-correction of behaviours, and peer-assisted learning. The qualitative study conducted with 22 elementary and high school teachers (Evans et al., 2012) found that, as compared to general education teachers, special education teachers seems to use a wider range of practices like set clear expectations, positive reinforcement and self-regulation mechanisms. Among all school setting teachers, the most used practices were verbal reinforcement and physical proximity. When observing behaviour management practices, Maggin et al. (2011) noted on their part that general and special education teachers tend to use the same practices, while exhibiting a low ratio of positive practices (e.g., praise) as compared to reductive practices (e.g., reprimands). The ratio was approximately 1:1, compared to the recommended ratio ranging from 3:1 up to 5:1 (Cook et al., 2018; Pfiffner et al., 1985).

At the elementary school level, Reddy et al. (2013) examined 23 behaviour management practices (observations/questionnaires) used by 317 teachers according to teaching experience and grade level. Results suggested that evidence-based practices were used by teachers approximately 60% to 70% of the

time, with a praise-reprimand ratio of 1:1.5. The most observed practices were teaching planning and materials management, whereas the least were controlling antecedents (e.g., displaying the class schedule and lessons) and assessing progress. Hierarchical regression models also demonstrated that preschool and early elementary teachers, as compared to higher levels teachers, use more frequently clear instructions, verbal reinforcement and feedback to redirect behaviours. Higher levels more frequently relied on progress monitoring and metacognitive support. With the exception of the use of praise, Reddy et al. (2013) results did not show interaction between years of experience or teaching level and the use of evidence-based behaviour management practices.

To sum up, previous studies examined the use of a limited number of practices by teachers, and explored the role of some teacher's characteristics (i.e., school setting, years of experience, teaching level) mostly with descriptive and correlational analysis. These results do not clarify the role of a set of teacher's individual and contextual characteristics, and their discrepancies may be explained by the variety of methods and measures (and their psychometric qualities) employed. However, the use of questionnaires or observations seems to lead to results with the same trends (Clunies-Ross et al., 2008; Debnam et al., 2015; Gitomer et al., 2014). In particular, these two types of measurement would be strongly correlated when instrument statements are formulated to represent strategies applied in a specific way, in a specific context (Kozioł & Burns, 1986). In the studies reviewed, the wording of the statements presented rather a non-specific use of practices, and their number (examined from questionnaire or observation) was generally small and not representative of the range of practices described above.

Given that several factors may influence whether or not teachers use evidence-based practices to manage behaviour, (Aarons et al., 2011) salient individual and contextual characteristics might be considered to better understand a given situation. For instance, the prevalence of students' presenting disruptive behaviours, and teachers' gender or teaching experience, including their knowledge or training in behaviour management which is likely to influence their degree of confidence in being able to manage such behaviours (Boutin et al., 2015; Rousseau et al., 2014). To our knowledge, a comprehensive picture of the specific practices used by preschool and elementary school teachers has only been established in a very limited number of studies. Of these, it has not been possible to reach a consensus on the interrelationships of practice use to individual or contextual characteristics, since both characteristics are rarely, if ever, considered simultaneously. For example, studies on instructional practices suggest the presence of distinctive associations according to gender; women are more motivated to use the recommended practices (Sabe & Aelterman, 2007; Schiefele, 2017; Schiefele & Schaffner, 2015). Other studies on professional development suggest an influence of teacher support through coaching or behaviour consultation on teacher practices (Nadeau et al., 2012; Holdaway & Owens, 2015; State et al., 2017). Being able to identify which type of characteristic

is most related to the use of which practices would allow for a more targeted effort in supporting teachers to meet the diverse needs of students. Such research would also help to make adjustments to training programs (e.g., individual characteristics) or to working conditions (e.g., contextual variables). The present study aspired to fill an important gap in knowledge by examining the practices of pre- and elementary school teachers in Quebec to promote prosocial behaviour and psychosocial adjustments of students. Specifically, it aimed to describe the use of classroom behaviour management practices and explore their interrelationship to individual and contextual teachers' characteristics, based on the following questions and hypotheses:

1. What is the use frequency of specific proactive / positive and reductive (i.e., educational and coercive) practices by preschool and elementary school teachers to manage disruptive behaviour in their classrooms?
2. What are the relationships between the practices used and individual teacher characteristics?
3. What are the relationships between the practices used and contextual variables?

METHOD

This study falls under the scope of a broader project that aims to pinpoint conditions for the education of students with behavioural difficulties in Quebec (Massé et al., 2018). The study adopts a descriptive-explanatory methodology to describe and to explore the relationships between variables.

PROCEDURE AND PARTICIPANTS

An informational email was sent to 60 Francophone school boards (approximately 12,000 teachers) and 15 Francophone private schools (approximately 300 teachers), requesting that they share the invitation with their teachers. In all, 1,580 teachers clicked on the invitation link, 190 chose not to participate and 207 were excluded from the analysis because they answered the questionnaire more than once ($n = 17$) or answered only a few statements (e.g. less than one tenth) ($n = 190$). The final sample thus consisted of 1,373 preschool and elementary school teachers. The participation rate, estimated at 10.3%, was considered representative of the population when using a non-probabilistic sampling based on the accessibility of the targeted community (William & Protheroe, 2008). Compared to teachers in preschool and elementary education in Quebec (MEES, 2015), the sample included roughly the same proportion of women (92% versus 89.1% respectively). The teachers were aged between 30 to 49 (68%), held a bachelor's degree as their highest level of education (82%) and taught in a public (94%) or private school with an underprivileged (40%), average (37%) or privileged (23%) socioeconomic environment index. Table 1

(see next section) presents the socio-demographic data of the sample used for subsequent analyses. All procedures for this study received ethics committee approval from the responsible university.

MEASURES

Two questionnaires were used for this study. The socio-demographic questionnaire had 11 questions corresponding to independent variables. Individual characteristics (n = 4) refer to age group, level of education, teaching experience, needs for training and consultation. Contextual characteristics (n=7) refer to type of institution (public / private school), the school's socioeconomic index, setting (general / special), grade level, specific training in behaviour management / disruptive behaviour (preservice or in-service; hours), number of students with disruptive behaviour in their group over the last two years, and number of active participations in an individualized (education) plan (IP) for a student with disruptive behaviour within the last two years.

TABLE I. Socio-Demographic of Participants (Frequencies, Means and Standards Deviation)

Variables	Frequency (%)	M (SD)
Gender		
Female	1263 (92.0)	
Male	110 (8.0)	
Teaching Experience		15.67 (8.6)
0 to 5 years	168 (12.2)	
6 to 15 years	541 (39.4)	
16 to 25 years	480 (35.0)	
26 years and over	184 (13.4)	
Teacher's setting		
General	1213 (88.3)	
Special	160 (11.7)	
Grade level		3.92 (2.0)
Preschool (age 5)	204 (14.9)	
1st (age 6)	222 (16.2)	
2nd (age 7)	203 (14.8)	
3rd (age 8)	195 (14.0)	
4th (age 9)	160 (11.7)	
5th (age 10)	178 (13.0)	
6th (age 11)	211 (15.4)	

Variables	Frequency (%)	<i>M (SD)</i>
Specific training in behaviour management (hours)		
Preservice		51.92 (64.2)
None	219 (16.0)	
1 to 45	782 (57.0)	
46 to 90	255 (18.6)	
91 and over	117 (8.5)	
Inservice		16.40 (43.8)
None	249 (18.1)	
1 to 5	467 (34.0)	
6 to 15	369 (26.9)	
16 and over	288 (21.0)	
Number of students in class with disruptive behaviour		2.54 (3.4)
None	223 (16.2)	
1 to 5	1037 (75.5)	
6 and over	113 (8.2)	
Individualized education plan (number)		3.15 (5.1)
None	307 (22.4)	
1 to 5	872 (63.5)	
6 and over	194 (14.1)	

The second questionnaire, the Classroom Behaviour Management Practices Inventory (*Inventaire des pratiques de gestion de comportements en classe*; Nadeau et al., 2018), listed 68 items of behaviour management practices for both proactive / positive ($n = 49$; $\alpha = .91$) and reductive ($n = 19$; $\alpha = .79$) dimensions, which referred to the dependent variables of the study. The proactive / positive dimension was composed of five scales measuring specific practices: 1) instructional teaching planning and time management ($n = 15$; e.g., planning rituals to greet students at the beginning and end of class); 2) establishing rules and instructions ($n = 10$; e.g., regularly reminding students of expected behaviours); 3) positive reinforcement-based ($n = 6$; e.g., giving a student explicit feedback on what they did well); 4) self-regulation support ($n = 15$; e.g., using a signal of some kind to remind students of the instructions or rules to follow); and 5) observational / functional assessment ($n = 3$; e.g., observing a student and taking notes on their

behaviour in order to determine what is causing disruptive behaviour). The reductive dimension was composed of two scales measuring specific practices geared toward: 6) educational consequences ($n = 10$; e.g., apply the expected consequences when there is a breach of the rules) or 7) coercive / punitive ($n = 9$; e.g., giving a detention). For each strategy, the participants were to indicate how often they used it on a frequency Likert scale (1 = *never*; 5 = *very often*). Each practice scale score was calculated based on the average score of each strategy item that constitute it. As in the instrument validation process ($N = 319$; Nadeau et al., 2018), the psychometric characteristics presented in Table 2 (see: *Results*) demonstrate globally good construct validity in spite the large sample size (e.g., goodness of fit indicator; Browne & Cudeck, 1993; Kline, 2016).

DATA ANALYSIS

Statistical analyses were conducted using IBM SPSS Statistics software version 24. Preliminary analyses examined the presence of missing data, normality of distribution for all the dependent variables (practice scales), and extreme values. To establish a picture of the practices used by teachers, descriptive analyses were conducted on averages, standard deviations, correlations, and paired *t*-tests between each of the scales. To diminish the likelihood of a type I error, the *p*-value at .007 is established by the correction of Bonferonni to each test (.05 / number of tests[7]; Tabachnick & Fidell, 2019). To explore the interrelationships between the independent variables related to teacher characteristics and the dependent variables related to practices, a series of seven hierarchical models was carried out (i.e., for each scale of practices). In the first step, the individual variables of gender and years of experience were introduced. Two other control variables were introduced at this step (e.g., source a = discussion group, source b = individual interview). The other independent variables representing contextual characteristics were added in step two. The choice of variables was intended to reduce the model's complexity in order to avoid interpretation-related difficulties (Hox et al., 2018). The premises for this type of analysis, such as normality of error distribution, homoscedasticity and absence of multicollinearity between independent variables, were respectively observed by the Durbin-Watson statistic, the homogeneity of residual variances and the Variance Inflation Factor (VIF).

RESULTS

Preliminary Analysis

The indicators confirming the postulate of the normality of distribution, averages, standard deviations, and correlations are presented in Table 2. The correlations indicate a moderate to strong significant association between the scales of the proactive dimension (Min. = 0.39, Max. = 0.69) and those of the reductive dimension (0.51), and a mild to moderate significant association between the scales of the two dimensions (Min. = 0.07, Max. = 0.43). Table 3

shows the correlations between the dependent and independent variables. The correlations between the independent variables range from $-.17$ to $.62$. Univariate variance analyses (t -tests and ANOVA) revealed no differences on the dependent variables of the practices for the independent variables ‘type of school’ (public / private) and ‘socioeconomic status index’, which were therefore excluded from subsequent analyses. Given the presence of the covariance and to facilitate comparison with other studies, the variable ‘teaching experience (years of)’ was used rather than ‘age of participant’.

Use of Behaviour Management Practices

The scores obtained for each practice scale indicate an average slightly higher than the midpoint. Practices referring to proactive / positive dimension ($M = 4.25$, $SD = 0.36$) were used significantly more than those referring to reactive/reductive dimension: $M = 3.20$, $SD = 0.48$, $t(1.1372) = 76.46$, $p = .000$. Results from t -tests indicated that most of the practice scales differed significantly from each other (p -value at $.007$), with the exception of the self-regulation and educational consequences scales ($p = .01$). The most proactive / positive dimension practices used were: clear rules, instructions and routines; planning and resource management; and positive reinforcement. The least used were: self-regulation and observational / functional assessment. The average scores for the coercive / punitive scale was situated near the midpoint while also indicating that these practices were used less often than the educational consequence practices that were frequently used.

TABLE 2. Psychometric Statistics, Descriptive Statistics, and Pearson Correlations Between Scale of the Classroom Behaviour Management Practices ($n = 1373$)

Dependent Variables	1	2	3	4	5	6	7
1. Teaching planning	—	.69***	.48***	.69***	.54***	.36***	.08**
2. Rules and instructions		—	.50***	.65***	.55***	.37***	.08**
3. Positive reinforcement			—	.54***	.39***	.43***	.17***
4. Self-regulation				—	.63***	.37***	.07*
5. Observation/assessment					—	.29***	.10***
6. Educational consequence						—	.51***
7. Coercive/punitive							—

Dependent Variables	1	2	3	4	5	6	7
Mean	4.03	4.32	4.51	4.33	4.00	3.76	2.59
Standard Deviation	0.44	0.39	0.38	0.48	0.67	0.49	0.61
Skewness	-.31	-.56	-.92	-.79	-.43	-.16	.30
Kurtosis	-.25	.16	1.0	.70	-.25	-.16	-.11
Alpha	.84	.84	.85	.71	.90	.70	.80
X2 (df)	443.25 *** (90)	366.21 *** (90)	213.30 *** (35)	31.04 *** (8)	0.01 (1)	165.76 *** (32)	184.46 *** (21)
RMSEA	.05	.05	.06	.05	.00	.06	.08
CFI	.95	.95	.96	.99	1.00	.94	.96

Note Alpha = ordinal coefficient alpha calculated from our sample.

* $p < .05$ ** $p < .01$ *** $p < .001$

TABLE 3: Pearson Correlation Between Sociodemographic (Independent Variables) and Classroom Behaviour Management Practices (Dependent Variables)

Sociodemographic (IV) Practices (DV)	Gender	Teaching experience	Educational setting	Grade level	Training preservice	Training inservice	Student in class	IP participation
1. Teaching planning	-.14***	.16***	-.07*	-.03	.01	.07*	.01	.09**
2. Rules and instructions	-.13***	.16***	.04	-.03	-.01	.06	.01	.06*
3. Positive reinforcement	-.14***	.08**	-.11***	-.15***	.06*	.04	.02	.10***
4. Self-regulation	-.13***	.15***	-.11***	-.11***	.05	.07**	.06*	.12***
5. Observational/Assessment	-.04	.18***	-.08**	-.07**	.03	.08**	.06*	.08**
6. Educational consequence	-.05	.09***	-.03	-.08**	-.04	.01	.01	.07*

Sociodemographic (IV) Practices (DV)	Gender	Teaching experience	Educational setting	Grade level	Training preservice	Training inservice	Student in class	IP participation
7. Coercive/punitive	.05	.07**	-.02	.15***	-.06*	.01	.09***	.11***

Note: Gender coded as *male* = 0, *female* = 1. Teacher's setting coded as *general* = 0, *special* = 1. Grade level coded as *Preschool* = 1 to *6th grade* = 7. Training Preservice and Inservice (on behaviour management) = *hours*. Student with disruptive behaviour in class and IP Participation = *number*.

p* < .05. *p* < .01. *** < .001

RELATIONSHIP OF PRACTICES TO TEACHERS CHARACTERISTICS

For all hierarchical models, the total proportion of explained variance of behaviour management practices ranged from 2% to 16%. The main effects are reported by step and by independent variable, according to their decreasing relations to the dependent variables.

Individual Characteristics

Among the variables introduced in step one, teaching experience was significantly associated with all the dependent variables; the longer teachers had taught, the more they used all the practices. Gender was associated with four scales in the proactive dimension; more than men, women reported using instructional teaching planning and resource management, establishment of rules, instructions and routines, positive reinforcement and self-regulation. The variables introduced in the first step were significantly related to each of the dependent variables, for a proportion of explained variance ranging from 1% to 5%.

Contextual Characteristics

Among the independent variables introduced in the second step, teaching level was significantly associated with three scales of the proactive / positive dimension: the higher the teaching level in elementary school, the less teachers reported using positive reinforcement, self-regulation, and observational / functional assessment. Teaching level was also significantly associated with both scales of the reductive dimension: the higher the teaching level in elementary school, the less teachers reported using educational consequence practices and the more they reported using the coercive / punitive practices. The variable of participation in an individualized education plan was also significantly associated with five scales of practices: the more teachers reported having participated in the development of an individualized educational plan, the more frequently they reported using instructional planning and resource management, positive reinforcement, self-regulation, and both scales of reductive practices.

School setting was significantly associated with four practices: general education teachers reported using less frequently the practices of teaching planning, positive reinforcement, self-regulation, observational / functional assessment. Among the training variables, the preservice training was the only one associated with coercive / punitive practices scale: the more hours of training received, the less teachers used these practices. For all the hierarchical models verified on the practices, no significant association was found with the number of students with behaviour difficulties in the classroom.

Taken together, the independent variables introduced in step two were significantly related to six dependent variables, in proportions ranging from 1% to 13%.

TABLE 4. Hierarchical regression models predicting classroom behaviour management practices (n = 1373)

	Classroom Management Practices (DV)													
	1. Teaching planning		2. Rules and instructions		3. Positive reinforcement		4. Self-regulation		5. Observation/assessment		6. Educational consequence		7. Coercive punitive	
Predictors (IV)	B	β	B	β	B	β	B	β	B	β	B	β	B	β
Source (a)	.02	.02	.05	.04	.05	.03	.05	.03	.04	.02	.05	.03	.00	.00
Source (b)	.00	.00	-.07	-.04	-.10	-.04	-.17***	-.08	-.09	-.03	-.13*	-.06	-.12	-.04
Step 1														
Gender	-.19***	-.14	-.18***	-.13	-.20***	-.11	-.18***	-.11	-.06	-.03	-.06	-.03	.05	.02
Teaching experience	.01***	.16	.01***	.16	.00**	.08	.01***	.15	.01***	.18	.00**	-.08	.00*	.06
Δ R ²	.05***		.05***		.04***		.05***		.04***		.02***		.01*	
Δ F-value	F = 15.97***		F = 16.70***		F = 6.71***		F = 17.17***		F = 12.81***		F = 5.58***		F = 3.07*	
df (4, 1368)														
Step 2														
Educational setting	-.07*	-.06	.06	.05	-.12**	-.08	-.11**	-.08	-.14*	-.07	-.02	-.01	-.02	-.01
Grade level	.00	-.00	-.00	-.01	-.03***	-.13	-.02**	-.08	-.02*	-.06	-.02**	-.07	.04***	.14
Training-preservice	.00	.00	.00	.01	.00	.05	.00	.04	.00	.02	.00	-.04	-.00*	-.06
Training-inservice	.00*	.06	.00	.05	.00	.02	.00	.05	.00*	.06	.00	.01	.00	.01
Student in class	-.00	-.01	.00	.00	-.00	-.01	.00	.03	.00	.03	.00	-.00	.01	.05
IEP participation	.00*	.06	.00	.05	.01**	.08	.01*	.07	.00	.04	.01*	.06	.01*	.07
Δ R ²	.01**		.01		.13***		.03***		.02***		.01*		.04***	
Δ F-value	F = 3.07**		F = 1.56		F = 28.73***		F = 7.62***		F = 4.61***		F = 2.26*		F = 8.36***	
df (6, 1362)														
Total Adjusted R2	.05**		.05		.16***		.07***		.05***		.02*		.04***	
F-value total	F = 8.29***		F = 7.63***		F = 9.62***		F = 11.64***		F = 7.97***		F = 3.60***		F = 6.29***	
df (10, 1362)														

NOTE. IEP = Individualized education plan. Gender coded as **male** = 0, **female** = 1. Teacher's setting coded as **general** = 0, **special** = 1. Grade level coded as **Preschool** = 1 to **6th grade** = 7. Training Preservice and Inservice = **hours**. Student with disruptive behaviour in class and PI Participation = **number**.

* $p < .05$. ** $p < .01$. *** $p < .001$.

DISCUSSION

This article set out to examine the practices used by pre- and elementary school teachers to manage difficult behaviours in the regular classroom in Quebec. The portrait of teaching practices is first discussed, followed by the relationships that emerged between individual and contextual variables.

Portrait of Preschool and Elementary Teachers' Practices in Quebec

Overall, the results suggest that the gap between the frequency of the teachers' use of recommended practices and the frequencies found in other studies is not as large as anticipated (Evans et al., 2012; Gable et al., 2012; State et al., 2017). Globally speaking, teachers often reported using practices that fell under the proactive dimension. The most used practices were: the establishment of clear rules, instructions and routines; teaching planning and resource management; and positive reinforcement. These results are consistent with other studies (Gable et al., 2012; Reddy et al., 2013; State et al., 2017) and support the assumption that classroom-wide practices requiring less individual time or effort are more commonly used (Sugai & Horner, 2009; Warmbold-Brann et al., 2017; Waschbusch et al., 2019). This would also explain the fact that self-regulation practices are less often used because they are perceived as more demanding, suggesting at the same time that students with disruptive behaviour are less likely to experience opportunities to develop or learn self-regulation skills (Carter et al., 2011), like (re-) focus on a task, calm down after something exciting or upsetting, regulate reactions to strong emotions like frustration. In the same trend, observing and identifying environmental cues in relation to the disruptive behaviour are practices that are less often used by teachers. This finding could be related to the fact that teachers are not necessarily trained to obtain a comprehensive understanding of the transaction between the student and his environment (including teacher practices). Alternatively, it could point to teacher misconception about observation and assessment of student behaviour, which may be mistakenly associated with intensive or demanding practices that require a more systematic follow-up with a specific student or additional intervention.

It is nevertheless encouraging to note that unlike in other studies, the frequency of use of practices in the proactive dimension was higher than the reductive dimension, and that the coercive / punitive practices were reported to be used the least often. It is possible that the use of a wider range of practices helped yield a more comprehensive and positive profile of actual classroom practices. Still, the reported frequency of use of reductive practices such as educational consequences remain close to some proactive practices, and suggests that the praise-reprimand ratio may be similar to the one found in previous studies (Evans et al., 2012; Reddy et al., 2013).

Practices in Relation to Teachers' Characteristics

The results highlight the interrelationship between teachers' self-reported practices and their individual and contextual characteristics, in addition to clarifying the distinct contribution of these characteristics. Teaching experience, teaching level, and participation in an individualized education plan are the variables related to a higher number of practices. The results obtained and discussed above are based on an explained variance that can be qualified as marginal and thus needs to be carefully interpreted.

Individual Characteristics

The results indicate that as teachers' years of teaching experience increase, the more likely teachers would slightly increase the frequency of use of the practice set. These results are in contrast to a study by Reddy and colleagues (2013), but consistent with the study by State and colleagues (2017) that show an increase in practice implementation as a function of teachers' years of experience following training. Nonetheless, the fact that more years of teaching experience is also associated with more frequent use of reductive practices is concerning. Indeed, it may suggest issues with processes of professional integration concerning classroom management of the kind that fosters prosocial behaviours and a positive learning climate (State et al., 2011). Awareness should be raised about the proactive / positive-reductive dimensions ratio in relation to the recommended praise-reprimand ratio mentioned earlier (Cook et al., 2018; Pfiffner et al., 1985). Engagement in supportive and positive practices needs to be encouraged at a rate of three to five times more often than reductive practices.

The results also provide information on the relationship between teacher gender and practices used. To some extent, women reported more frequent use of practices geared toward planning and resource management, positive reinforcement, and self-regulation support. It may be, following on studies of instructional practices (Sabbe & Aelterman, 2007; Schiefele, 2017), that women are more inclined to use recommended practices than men.

Contextual Characteristics

Among all the contextual variables studied in this research, grade level appears to be influential in relation to the practices reported by the teachers. Overall, the more teachers teach at an upper level, the more likely they are to use coercive / punitive practices and the less likely they are to use proactive practices. These results are in line with Reddy and colleagues (2013), who noted that teachers at higher levels used more practices aiming to support students' metacognitive thinking and monitor their progress. Rather, it appears that the higher grade level at which teachers teach, the less likely teachers are to promote the learning of appropriate behaviours and prevent problematic ones, and the more likely they are to try to eliminate disruptive behaviours.

Encouragingly, these results indicate that participation in an individualized education plan significantly contributes to increasing the frequency of use of certain proactive practices albeit also reductive ones. In the absence of prior studies verifying the contribution of this participation, it is reasonable to anticipate that, similar to the effects of a consultation process (Nadeau et al., 2012; Holdaway & Owens, 2015), multidisciplinary team discussions and the support provided to teachers will help them better understand the nature of students' needs and difficulties, and consequently to implement the practices effectively.

In line with previous studies examining influence according to school settings (Evans et al., 2012; Floress et al., 2017; Gable et al., 2012), the results indicate that special education teachers use practices belonging to the proactive dimension, such as self-regulation, positive reinforcement and observation / functional assessment, slightly more often in comparison to general teachers. This small but significant difference may be explained by the compositions of the teachers' classrooms. General education teachers must manage the learning and behaviour of students with diverse needs, which may make their task more complex and leave fewer opportunities or less time for individualized practices. For their part, special education teachers are more likely to have classrooms with a higher number of students exhibiting self-control problems, thus prompting them to use individualized practices more often. Moreover, the differences according to setting may also be tied to the higher number hours of training completed on behaviour difficulties. A study by Gable and colleagues (2012) suggests that general education teachers may feel less equipped to use positive reinforcement and observational / functional assessment systems than special education teachers. Notably, the results from the current study indicate that except for preservice training in relation with coercive / punitive practices, there is no association between the number of training hours and others practices. Thus, the fewer hours of training teachers received during their preservice training, the more they used coercive / punitive practices, and conversely, the more hours of in-service training they completed, the more they used observational / functional assessment. Finally, the number of students with behaviour difficulties included in a group is not related to the frequency with which teachers use the practices.

Certain limitations of this study should nuance the interpretation of the results. The self-report questionnaire may have contributed to drawing a more positive picture of the practices used by teachers (Hogan, 2019). However, the validity of our results is supported by studies suggesting that self-reported practices and classroom observations are strongly correlated when the items are linked to specific goals and represent the same trends (Clunies-Ross et al., 2008; Debnam et al., 2015; Gitomer et al., 2014). Regarding the measurement instrument, it could be helpful in some situations to add a timeline within which teachers are asked to evaluate their frequency of use of each practice (e.g., in the last 2 weeks). Further, the study might benefit from including a scale specifically addressing collaboration practices with families, which is upheld by the scholarly literature

as a way to promote academic performance (Cox, 2005).

About the analysis used, other associations between variables (e.g. between independent or dependant variables) could help better adjust the model evaluated. Along the same lines, the low variance explained by the model's suggests that investigation of other variables is needed to better understand what can influence the use of the practices by the teachers. This result is surprising considering that the variables introduced in the present study are those that were primarily identified in previous studies (e.g., Evans et al., 2012; Reddy et al., 2013) or in studies assessing the effects of in-service training on teachers' practices (Aarons et al., 2011). Compared to these studies, the more robust methods of analysis used by the present study suggest instead that relative importance be given to the characteristics examined. Indeed, the most previous studies did not report results that identified the percentage of variance explained for each variable. In short, although the present study was intended to be exploratory, it contributes to the advancement of knowledge by specifying the relative influence of these variables on the use of practices by teachers.

To account for the small proportion of the variance in the practices explained by the characteristics examined, other avenues must be explored through research and the school community. In this sense, pre-service teacher training programs or schools offering in-service training can't only rely on the characteristics examined to identify teachers' needs. For instance, an interesting avenue would be to investigate the role of teacher beliefs (Ajzen, 2012). In particular, the links between the use of teaching practices and the beliefs that teachers have toward students with disruptive behaviours, such as their attitudes toward the students' integration in regular classrooms or feelings of self-efficacy to teach those students (MacFarlane & Woolfson, 2013). In addition, the representations that teachers may have regarding the achievement of the objectives established by the curriculum/pedagogical framework or the educational setting (general or special), as well as the expectations perceived on the part of their management or school team, deserve to be studied. It could also be relevant to study the role of support or accompaniment received by teachers in facilitating the school inclusion of those students. Further, a mixed methodology approach including observations or interviews with teachers would help build on the goals of the present study and confirm the fidelity of implementation of practices.

CONCLUSION

In a context of inclusive education, teacher is called to support the heterogeneous needs of their students and to promote their psychosocial adjustment by the use of differentiated (various) practices. The present study has, for the first time, established a portrait of a range of class-wide behavioural management practices by surveying a large number of pre- and elementary school teachers. The results have documented the most and least used practices in a classroom setting and help

guide efforts to close the gap between evidence-based and implemented practices. Compared to previous studies conducted in other nations with a similar research focus, this study also undelines the relative influence of teacher characteristics and the need to take greater account of certain contextual characteristics, such as teacher support and consultation. Given that teaching experience seems to be negatively associated with the use of coercive / punitive practices, better understanding the reasons behind their use appears to be a relevant theme to explore. These could provide solutions likely to guide the modalities and content of teacher training programs (initial and in-service), and thus better support better support teachers in using practices that promote the development and acquisition of students' social and emotional competence and skills.

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