Positive Classroom Management: Effects of Disruption Management Climate on Behaviour and Satisfaction with Teacher

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Abstract

This study analyses the role of disruption management strategies and its effects, in interaction with the *classroom motivational climate* (CMC), on the decrease of disruptive behaviour and on the perception of teaching quality. For this purpose, the *Disruption Management Climate Questionnaire* (DMCQ) was developed. A total of 827 Secondary-School students formed the sample. To validate the DMCQ, confirmatory factor and regression analyses were realised. Children's attribution to teacher's coping strategies of decrease in disruptive behaviour, and of perceived change in satisfaction with teacher's work as an index of teaching quality, were used as external criteria. Results support hypotheses related to DMCQ structure, and to its role as predictor of the degree of disruption decrease, but not the hypothesis related to satisfaction with teachers' work, that depends mainly on CMC. These results underlie the importance of acting on DMCQ and CMC components to improve teaching practices.

Keywords: classroom management, disruption management climate, classroom motivational climate, disruptive behaviour, disruption coping strategies.

Resumen

Se analiza el papel de las *estrategias de gestión de la disrupción* y sus efectos, en interacción con el *clima motivacional de clase* (CMC), en la disminución de la disrupción y la percepción de la calidad de la enseñanza. Se ha desarrollado el *Cuestionario de clima de gestión de la disrupción* (DMCQ). Han participado 827 estudiantes de Educación Secundaria. Se realizaron análisis factoriales y de regresión confirmatorios, utilizándose como criterio externo de validez la atribución de los estudiantes al modo de actuar del profesor la disminución de la disrupción y la satisfacción con su trabajo, como indicador de calidad docente. Los resultados apoyan las hipótesis sobre la estructura del DMC y sobre la capacidad de predecir la disminución de la disrupción, pero no sobre la satisfacción con el trabajo del profesor, que depende principalmente del CMC. Muestran la importancia de actuar sobre las variables evaluadas para mejorar la actuación docente.

Palabras clave: gestión de aula, gestión de la disrupción en el aula, clima motivacional de aula, estrategias de afrontamiento de la disrupción.

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Introduction

The presence of disruptive behaviours in the classrooms is one of the problems that teachers have to deal with more often (Almog & Shechtman, 2007; Clunies-Ross, Little, & Kienhuis, 2008; Egyed & Short, 2006). For example, Pérez-Díaz and Rodríguez (2009) found that 70% of secondary-school teachers declare that the level of discipline in the schools is declining, and that 1/7 of pupils maintains an attitude of rejection or defiance to the rules.

Disruptive behaviours are a problem not only due to their immediate effects in classroom processes, but also because they interfere with the development of cooperation and prosocial attitudes that are one of the most important objectives of schooling in most countries (Araújo, 2005). This fact has produced an increasing bulk of research aimed at identifying which strategies for managing disruptive behaviour contribute —when used in conjunction— to define an effective classroom management climate, that is, a climate that, in the long run, produces a decrease in misbehaviour and an increase of cooperation and prosocial behaviours. In order to achieve this objective, it is necessary to have assessment instruments with which to measure the "disruption management climate". For this reason, relevant literature was reviewed to know the kinds of instrument available for such purpose. No one with adequate characteristics —brief, reliable and valid— was found. Therefore, it was decided *to develop a disruption management climate questionnaire* that allowed, first, identifying management strategies and styles, and second, studying, on one side, factors that influence their use, and on the other, their effects.

Classroom Climate (CC)

Why should we try to assess *classroom climate?* Studies on classroom climate have shown that students not only are affected by and respond to each particular teacher's action, but also by the set of teacher's actions that define classroom climate (Ames, 1992; Evans, Harvey, Buckley, & Yan, 2009; Meece, Anderman, & Anderman, 2006). Therefore, it is important to identify the kinds of climate affecting student's behaviour.

According to Evans et al. (2009), *classroom climate* is a multi-faceted concept, that include different dimensions: the *academic-instructional climate* (AIC), defined by the pedagogical and curricular elements of the learning environment; the *disruption management climate* (DMC), defined by the set of teacher's action patterns or strategies that show is/her particular style of preventing and solving discipline problems; and the "*classroom emotional-interpersonal climate*" (CEC), defined by the interactions that involve emotional exchange be-

tween teacher and student. Teacher's action patterns defining each dimension may have particular effects that deserve to be studied by its own sake. However, they may interact to produce different effects. Therefore, to understand the effects of a particular dimension it may be necessary to study how it combines with the effects of other dimensions. With this purpose, though this study focuses on the effects of DMC, their effects have been studied in interaction with the effects of the *classroom motivational climate* (CMC) (Alonso-Tapia & Fernández, 2008; Ames, 1992). To carry out the study it has been necessary to clarify how each particular climate is conceptualized.

Positive classroom management

The main questions to answer concerning the DMC are: (1) what are the action-patterns that may configure the different DMCs? (2) What are their effects on disruption? As Little and Akin-Little (2008) point, in many studies classroom management has been associated with concepts such as discipline or behaviour control. These concepts in some way connote certain degree of aversive action *in response* to disruptive behaviour for reducing it, etc. However, according with these authors, this construct involves not merely responding effectively when these situations occur, but also preventing them, an objective that may depend on other dimensions of CC.

According to the same authors, the first way to prevent disruption is to have an adequate system of rules, developed with students' participation, what implies: (a) keeping the number of rules to minimum; (b) wording them as simple as possible; (c) wording them in a positive way; (d) making them very specific; (e) making sure that they describe behaviour that is observable; (f) focusing on behaviours that are measurable; (g) posting the rules in a prominent place in the classroom; and, (h) ensuring that the rules are connected to consequences. However, rules are not sufficient to prevent disruption and the way teachers' cope with it may contribute to create a DMC that may or may not be effective in the long run.

Teachers can use different coping styles to manage disruption. According to Mainhard, Brekelmans and Wubbels (2011), teachers can act in a *coercive or in a supportive way* when dealing with specific disruptive behaviours. First, teachers act in a *coercive way:* (1) when they use strategies to keep the student's attention (to stop the class, to do some unexpected or surprising thing, etc.: *public warning*); (2) when they use different kinds of more or less acceptable punishment: to remove a positive reinforcement (e.g., deciding the loss of a pleasant activity: *response cost*); to make him/her to return the classroom situation to a state bet-

ter than it was before the disruptive behaviour (*overcorrection*); to force him/her to realize the correct behaviour (*positive practice*) (Alberto & Troutman, 2006); to speak to the student with sarcasm or to yell at him/her, etc.. Teachers can also displace the problem to another person, as when the student is sent to the principal's office (Gotzens, Castelló, Genovard, & Badía, 2003; Simón, Gómez, & Alonso-Tapia, 2013). Second, teachers act in a *supportive* way: (1) when they use instructional strategies (to promote the individual and group reflection, to explain the desired behaviour and the consequences thereof); (2) when they praise the student for behaving in the appropriate way; or (3) when they teach self-control strategies (Mainhard et al., 2011). All these strategies of managing or preventing disruptive behaviour, as well as the categories defining their similarities, and the DMCs they tend to configure, should be taken into account for developing DMC assessment instruments.

Several authors (Lewis, Romi, Qui, & Katz, 2005; Mainhard et al., 2011; Simón et al., 2013) have shown that coercive strategies, that have an aversive character, seem to be associated with increasing disruptive behaviour, whereas supportive strategies, that help to develop and construct adaptive behaviour patterns, seem to have the opposite effect. For example, the research of Mitchell and Bradshaw (2013), in which participated 1902

students, showed that the greater the use of exclusionary discipline strategies, the lower order and discipline scores, fairness, and student-teacher relationship. Similar results were found by Simon et al. (2013), Way (2011), Clunies-Ross, Little and Kienhuis (2008) and Soodak (2010), who pointed that community-building management strategies that address challenging behaviours in a positive, proactive, and educative manner favour the goals of inclusive education (see also Urbina, Simón, & Echeita, 2011). Given the relevance of the two kinds of effects for classroom and school functioning, as well as the fact that, in turn, disruptive behaviour can affect teaching quality, it is important to identify the kind of DMC created by each teacher and to study its effect on disruptive behaviour and on teaching quality. This objective justifies the development of assessment instruments as the one presented in this paper.

To achieve the objective just mentioned, the base model presented in Figure 1 was developed and items were designed for assessing each of the indicators of specific factors and coping styles that can define the DMC. This is the model to be tested in the study. As the model shows, no clear hypothesis about the relationships between the two coping styles are stated. It may be that as teachers tend to use a style, they avoid the other, but it might also happen that the two coping styles relate positively in some degree.
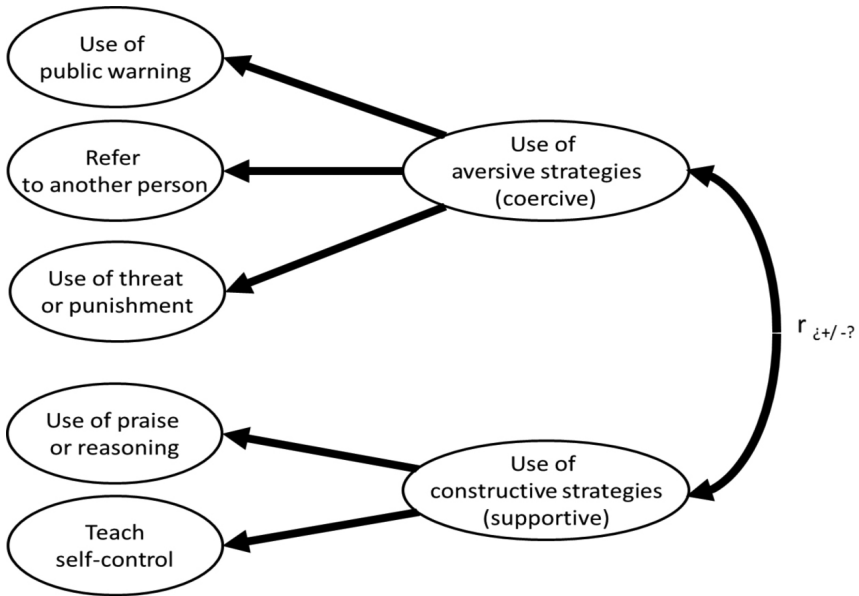
Figure 1. Classroom discipline-management climate: basic model.

Classroom motivational climate

Strategies for coping with specific disruption problems once they have appeared may not be sufficient to prevent that they happen again. We must make progress in the identification of the barriers that limit, after all, the learning and the participation of all students (Booth & Ainscow, 2011). Disruption occurs in a context defined by other facets of classroom climate that may contribute to it, or to prevent its appearance (Baker, Clark, Maier, & Viger, 2008; Piwowar, Thiel, & Ophard, 2013; Thuen & Bru, 2009). Therefore, in order to have a complete picture of contextual factors affecting disruptive behaviour, it seems also necessary to assess them. However, which teachers' action patterns defining the different facets of classroom climate should be assessed?

In the context of studying contextual factors affecting motivation and learning, Ames (1992) introduced the concept of *classroom motivational climate* (CMC), related to the academic-instructional component of CC. Ames thought that

CMC could favour mastery or performance goal orientation and so, learning and discipline in the classroom, depending on patterns of teacher's activity in six teaching areas represented by the acronym TARGET: task, authority, recognition, grouping, evaluation and time. She supposed that specific teaching patterns related to each of these areas could favour the mastery orientation, and so, the development of motivation, learning and positive social climate, whereas the lack of these patterns, or patterns opposite to them would obstruct it. Thus, according to Ames, there are many and different teaching patterns that should be taken into account if CMC is to be explained and modified.

Many of the studies about the effect of CMC were carried out with the scales developed by Midgley et al. (2000) for assessing the "classroom goal structures" (CGS), a related concept —one of the characteristics of classroom motivational climate— (Meece, Anderman, & Anderman, 2006). The base of assessment in these scales is the students' perception of the degree of importance given by their teachers (*mainly through explicit messages*) to: (a) effort and understanding (mastery goal structure); (b) getting right answers, high scores on tests and good grades (performance-approach structure); and (c) avoiding mistakes in front of other and not to do worse than others (performance-avoidance structure). One of

the studies carried out using these scales (Kaplan, Gheen, & Midgley, 2002) showed that the mastery goal-structure —identified by aggregating students' perceptions— used to be related to a lower incidence of disruptive behaviour, whereas the performance-approach goal- structure used to be related to a higher incidence of disruptive behaviour. Nevertheless, these scales did not take into account other specific teaching patterns —different from teacher's messages—, which contribute to classroom motivational climate.

A similar situation was found with the scales developed by Fauth, Decristan, Rieser and Klieme (2014). These authors developed a set of rating scales for science primary-school students. The content analysis of these scales shows that they allow assessing: (a) the effect of classroom management (the degree of attention versus disruption); (b) the kinds of task used for achieving cognitive activation (easy versus complex tasks); and (c) the degree of help and feedback that teacher gives to the student (frequent, precise and worm versus scarce, general and cold). Fauth et al. (2014) found ratings of classroom management to predict student achievement, and ratings of cognitive activation and supportive climate to predict students' development of subject-related interest. However, though the Fauth et al.' scales provide information about teaching quality, they do not inform

about most of teaching patterns that configure the CC and that could influence the presence or absence of disruptive behaviour.

Following a different strategy, Alonso-Tapia and Pardo (2006) revised the main teaching patterns that, according to different authors, teachers use along the learning sequence, and analysed the particular effectiveness of each pattern for enhancing learning motivation. Thereafter, considering that the classroom motivational climate is the result of the particular configuration of such teaching patterns, Alonso-Tapia and Fernández (2008)

developed the CMC Questionnaire (CMCQ). This instrument allows assessing how students perceive the degree in which a teacher uses the teaching patterns or strategies shown in Figure 2. It was considered that the combined use of such patterns, measured by the score of the whole scale, was a way of operationalizing the perceived CMC and of determining whether it could be considered more or less learning oriented.

Different studies carried out with the CMCQ have shown that the perception of classroom climate is related with the degree and kind
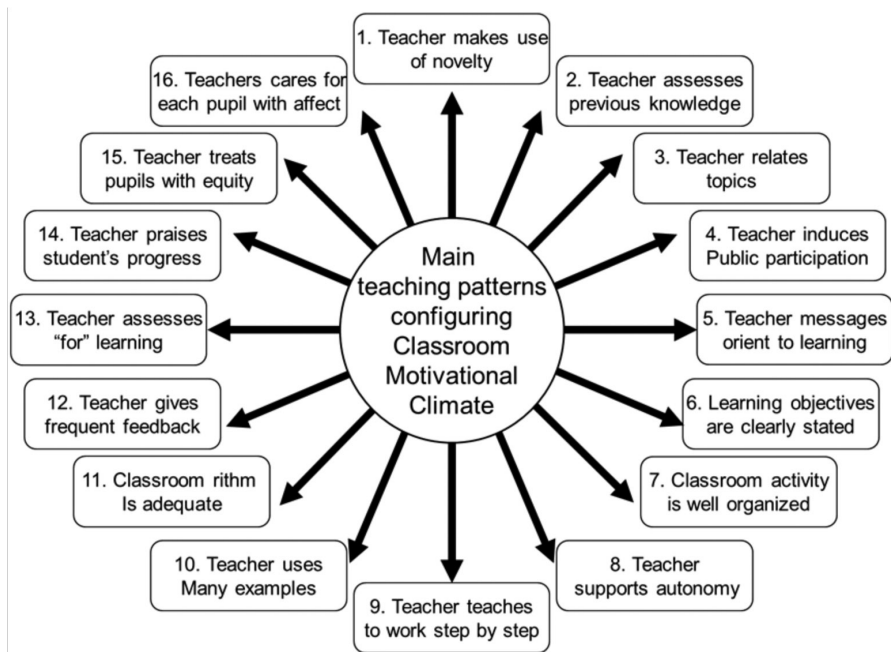

Figure 2. Teaching patterns of Classroom Motivational Climate assessed by the CMC.

of academic motivation and engagement, with the kind of learning (deep or surface learning), with the degree of achievement, with the degree of satisfaction with teacher's work, with teacher's personal and professional well-being and, what is more important for this study, with presence or absence of cooperation or of disruptive behaviour, conflict and bullying (Alonso-Tapia & Fernández, 2008; Alonso-Tapia, Ruiz, & Huertas, 2015; Simón et al., 2013).

Research has provided evidence supporting, in different degree, the educational value of all the teaching patterns that, grouped in different scales, were assessed in the studies above cited. However, the model that best gathers the teaching patterns that may influence not only learning but also discipline, and so the most complete, is the one proposed by Alonso-Tapia and Fernandez. In fact, this model includes the patterns included in the other models except the reference to the use of complex versus easy tasks (Fauth et al., 2014). Therefore, it was decided to relay on this model to test the relative role of CMC in the perceived decrease of disruptive behaviour as well as on teaching quality.

Summarizing, the objectives of this study are two: (1) To develop a questionnaire for assessing the DMC on the base of the model shown in Figure 1; (2) to study the relative weigh of the DMC and of the CMC in predicting, first, the decrease in disruptive behaviour as it is perceived by students, and second, the effect of both aspect of CC on the student satisfaction with teacher's work as an index of teacher's teaching and managing quality.

The basic model on which the validation process will be based is shown in Figure 3. As can be seen, the hypotheses are: (1) aversive strategies will relate negatively and significantly with the decrease of disruptive behaviour and with student's satisfaction, as perceived by students, whereas the opposite will happen with constructive strategies; (2) CMC will relate positively and significantly with both the decrease of disruptive behaviour and with the student's satisfaction.

Method

Partipants

A total of 827 secondary school students from four different public schools of the north area of Madrid participated in the study. These were large schools —with about 800 students— that voluntarily accepted to participate in the study. As public schools, they do not represent students in private schools in Madrid (18.8%).The social level of students attending these schools was middle or middle-low. A total of 413 males and 414 females formed students' sample. The mean age was 14.33 years ($SD = 1.43$). They belonged to four different aca-

demic courses (1st = 213; 2nd = 226; 3rd = 198; 4th = 180). The students' sample was randomly divided in two groups of 412 and 415 students respectively, with almost equal number of males and females. The first subsample was used for carrying out the initial analyses and the second, for cross validating the results. The questionnaires were anonymous though students provided information about age, sex and course.

Instruments

In order to test the hypotheses, the following instruments were used.

a) The *Disruption Management Climate Questionnaire (DMC-Q)*. This is the questionnaire being developed in this study. Its items, shown in Box 1, were taken from a greater pool generated, after considering managing strategies frequently mentioned in literature, in a previous study realized with a
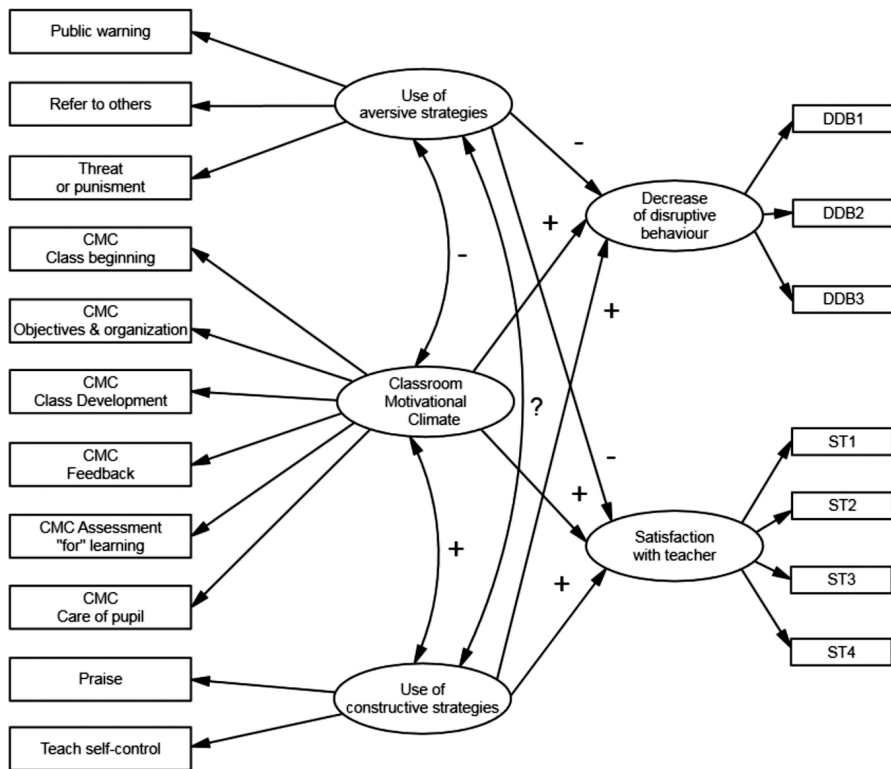

Figure 3. Confirmatory regression analysis: basic model.

Chart 1

*Items of the Disruption Management Climate Questionnaire (DMC-Q) and of the Teacher'
Role in the Decrease of Disruptive Behaviour (TRDDB)*

DMC-Q

Instructions: Below is a number of ways in which teachers can act when there are behaviours that interfere with the progress of the class and that can be annoying. Your task is to identify, using following scale, the degree to which your teacher uses them.

1. Never	2. Sometimes	3. Often	4. Very often	5. Always

1. Stops the class
2. Scolds the student that bothers or misbehaves
3. Changes the student to a different place
4. Writes a discipline report
6. Sends the student to the principal's office
7. Approaches the student "invading his/her territory"
8. Does not pay attention to the student's behaviour
9. Removes a student's privilege
10. Explains the consequences of behaviour to the student
11. Proposes to the student alternatives ways of behaving
12. Praises the student when he/she behaves in an appropriate way
13. Makes a behaviour-contract with the student.
14. Sends a positive note to student's parents when his/her behaviour improves
15. Teaches how to put into practice positive behaviours that can substitute misbehaviours

TRDDB

Instructions: Below you have several sentences. Your task is to say, using the following scale, the degree in which you agree with the content of each sentence.

1. Strongly disagree	2. Disagree	3. Neutral	4. Agree	5. Strongly agree

1. The way this teacher acts when some of us bothers or interrupts make us to behave every time better
2. The way this teacher reacts when some of us misbehaves has as a consequence that we disturb and interrupt more and more (–)
3. Our behaviour improves from day to day due to the way this teacher reacts when we do something that bothers or disturb

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different sample, in which only exploratory factor analysis was employed (Simón et al., 2013). They cover specific strategies usually employed for managing classroom disruptive behaviours.

b) A brief scale for assessing the *Perceived Teacher' role in the decrease of disruptive behaviour* (TRDDB). This scale has only three items, also shown in Box 1, and a reliability α_{DDB} = .76. The scores in this scale will be used as criterion for assessing the external validity of the *Disruption Management Questionnaire*.

c) *The Classroom Motivation Climate Questionnaire (CMCQ)*[1] (Alonso-Tapia & Fernández, 2008). This questionnaire was designed to cover sixteen kinds of teaching strategies or patterns that, according to the theoretical review, could affect the students' motivation to learn. Two items were written to assess each pattern. To avoid acquiescence effects, one was positive and the other negative. Each item had to be answered in a five-point Likert scale, so the score of each pattern ranged from one to ten. As previous explained, questions are grouped to obtain sixteen indicators from which the general score that measures the *Classroom Mo-*

tivation Climate oriented to learning is estimated. The reliability of this scale, as obtained in previous studies, is very good (α = .93).

d) Five independent scales for assessing the *Perceived teacher' role in changing student's interest, perceived ability, effort expenditure, success expectancies and satisfaction with teacher work* were also used[2] (PETROM). The first four scales have three items and their reliabilities are: α_{INT} = .81; α_{PAB} = .74; α_{EFF} = .72; α_{SUC} = .73. Finally, the satisfaction scale has four items with reliability α_{SAT} = .80. These scales were used for estimating the degree in which students attribute motivational changes to teacher work and to test whether this attribution depends mainly on classroom motivational climate or —directly or indirectly— on the potential moderating role of students' and teachers' variables. All these scales had been developed and used in previous studies (Alonso-Tapia et al., 2014; Fernández, 2008).

Procedure

The students filled in the questionnaires in two 50-minute sessions. They were told to refer to the teacher in charge of teaching a par-

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[1] The CMCQ can be found in English, Spanish and French: a) http://sohs.pbs.uam.es/test/CMC_Spanish, b) http://sohs.pbs.uam.es/test/CMC_French, c) http://sohs.pbs.uam.es/test/CMC_English

[2] The PETROM can be found in English and Spanish: a) http://sohs.pbs.uam.es/test/PETROM_Spanish, b) http://sohs.pbs.uam.es/test/PETROM_English

ticular subject when answering each questionnaire.

Data analyses

In order to determine the DMC-Q factorial structure, two confirmatory factor analyses (CFA) were carried out. First, the structure derived from the theoretical considerations was used as baseline model to be estimated with confirmatory techniques (CFA-1), using the AMOS-19 statistical software (Arbuckle, 2003). Multivariate normality, assessed through Mardia coefficient, was adequate ($M = 20.09 < 70$) according to Rodríguez and Ruiz (2008) criteria. So, estimates were obtained using the maximum likelihood method after examining whether data were adequate for the analysis. Absolute fit indexes such as χ^2, χ^2/df, goodness-of-fit index (GFI), relative fit indexes such as the incremental fit index (IFI), and non-centrality fit indexes such as the comparative fit index (CFI) and the root mean square error of approximation (RMSEA) were used to assess model fit, as well as criteria for acceptance or rejection based on the degree of adjustment described by Hair, Black, Babin, Anderson and Tathan (2006).

Second, in order to cross-validate the results of the above analysis, a confirmatory multiple group analysis was carried out using the two sub-samples. The theoretical model proposed was used as the baseline for comparison, without any restriction for parameter equality between samples. Against this model, several models were estimated and compared, in which equality between the groups was imposed for different sets of parameters. The relative decline in goodness-of-fit was assessed by means of the difference in the chi-square statistic between the model with restrictions imposed and the model without restrictions.

Third, the reliability —internal consistency— of the DMC-Q scales and of the TRDDB was calculated using Cronbach's α coefficient.

Fourth, in order to obtain initial information on the external validity of the DMC-Q, a path analyses with latent variables (PALV) was carried out to test each of the hypotheses related to DMC scales and CMC potential effects: a) on the attribution of decrease of disruptive behaviour to the way these behaviours are managed; and b) on the pupils' general satisfaction with teacher's work. Again, the theoretical model was used as base for the predictions, and its adjustment was with confirmatory techniques using the AMOS-19 statistical software (Arbuckle, 2003). The same estimation method and fit indexes used for CFA were used for PALV.

Fifth, in order to cross-validate the results of the above analyses, a confirmatory multiple group path analysis (PALV-CVA) was carried out using the two sub-samples. Again, the same estimation method and fit indexes used for CFA were used now.
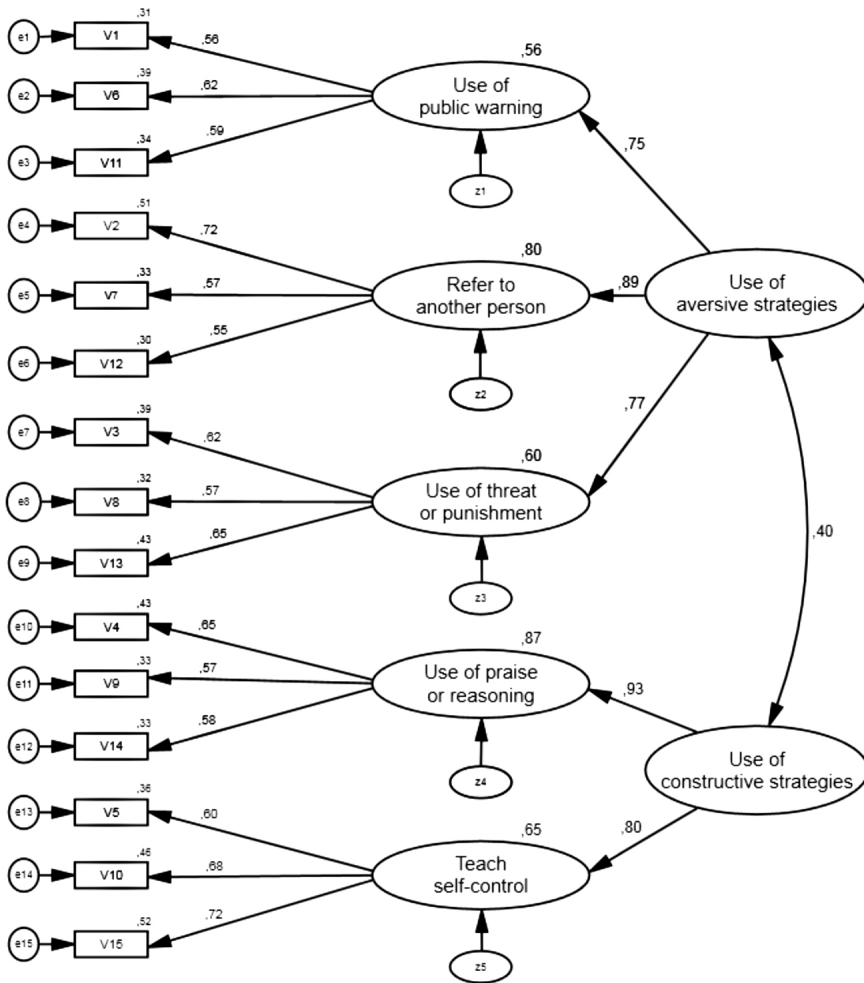
Figure 4. CBMC. Initial confirmatory standardized solution.

Results

Confirmatory factor analyses (CFA)

Table 1 shows the fit statistics of the proposed model (CFA-1). All the estimated loadings (λ) were significant ($p < .001$). Figure 4 shows the corresponding standardized estimates for this analysis. *Chi-square* statistic was significant, probably due to sample size, but the remaining fit indexes are well inside the standard limits for accepting of a model.

Table 1

Goodness-of-Fit Statistics for CFA of Base Model, and of Multi-group Cross-validation Analysis (CVA)

	χ^2	df	p	χ^2/df	GFI	IFI	CFI	RMSEA
CFA-1 ($N = 412$) Base line model	357.21	169	.001	2.11	.95	.92	.92	.037 CI[1] [.03, .04]
CFA-2. Cross V (N: 412-415)	379.51	205	.001	1.85	.95	.93	.93	.032 CI [.02, .03]

Note. CI = Confidence interval.

Table 2

CFA-2 Cross Validation of the Model Using Multi-Group Analysis with Two Samples. Chi-square Differences for Model Comparison Against the Unconstrained Multi-Sample Model

Analysis	Model	df	χ^2	p
	Measurement weights	10	9.082	.524
	Structural weights	13	11.079	.604
CFA-2: CVA[1]	Structural covariances	16	11.652	.768
	Structural residuals	21	17.407	.686
	Measurement residuals	36	22.304	.964

Note. CFA = Confirmatory Factor Analysis; CVA = Cross-Validation Analysis.

The average variance extracted was .38.

Multi-group cross-validation analyses (CVA)

In order to test the validity of the model, a multi-group analysis was carried-out. In the validation of model CFA-2 (Table 1), the fit indexes were also well inside acceptable limits. Moreover, the model comparison statistics presented in Table 2 (CFA-2 CVA) show that fit is not reduced significantly even if restrictions on measurement weights, structural weights, structural covariances, structural residuals and measurement residuals are imposed.

DMC-Q reliability

Before studying the external validity of the *DMC-Q*, Cronbach-α coefficients were computed for the scales and subscales of the DMC-Q, as well as Composite reliability in-

Table 3

DMC-Q Scales Reliability

DMC	α	CRI[1]	VE
DMC: *Use of aversive strategies*	.77		
Use of pubic warning	.63	.61	.35
Refer to another person	.64	.64	.38
Use of threat or punishment	.63	.64	.38
DMC: *Use of constructive strategies*	.74		
Use of praise or reasoning	.62	.63	.36
Teach self-control	.77	70	.45

Note. CRI = Composite reliability; VE = variance extracted.

dexes. The reliability indexes of all scales are enough high, especially those corresponding to both higher order scales (see Table 3).

Path analysis with latent variables

Figure 5 shows the standardized estimates of the overall model. All the estimated loadings (λ), correlations between factors (Φ), and regression coefficients (γ) are significant ($p < .001$), except coefficients from both management strategies to satisfaction with teacher's work, and from CMC to attribution to decrease of disruptive behaviour to teacher's way of managing it. As for the fit statistics presented in Table 4, *Chisquare* is significant probably due to sample size, but the quotient χ^2/df as well as the remaining fit indexes are well inside the limits that allow the model to be accepted.

Predictors explain 74% of variance of the first criterion, *attribution to decrease of disruptive behaviour to teacher's way of managing it*. In relation to this result, it deserves to be pointed out that, as could be expected, the prediction weight of both management strategies in relation to the criterion variable is similar though opposite in direction, while the prediction weight of CMC on this same criterion is non-significant. This last result was unexpected, as correlation between the scores in these two variables was significant ($r_{CMC\text{-}TRDDB} = .644$, $p < .001$). This result means that, probably due to the correlation between predictors, CMC does not increase the amount of the criterion variance explained by management strategies.

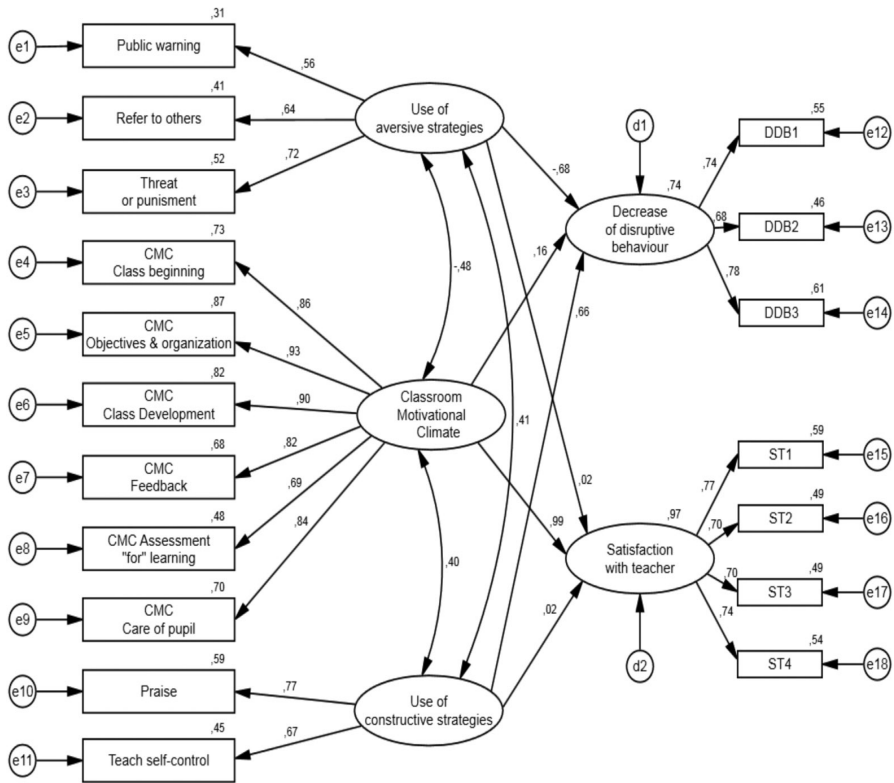Predictors also explain 97% of variance of the second crite-

Figure 5. Base model. Path analysis with latent variables.

Table 4

Goodness-of-fit Statistics for PALV[1] of Base Model, and of Multi-group Cross-validation Analysis (CVA)

	χ^2	*df*	*p*	χ^2/df	GFI	IFI	CFI	RMSEA
PALV (*N* = 412) Base line model	250.85	126	.001	1.99	.94	.97	.97	.049 CI[2] [.04, .05]
PALV-CVA (*N*: 412-415)	556.40	297	.001	1.87	.93	.97	.97	.036 CI [.03, .04]

Note. PALV= Path Analysis with latent variables; CI = Confidence interval.

Table 5

PALV-2 Cross Validation of the Model Using Multi-Group Analysis with Two Samples. Chi-Square Differences for Model Comparison Against the Unconstrained Multi-Sample Model

Analysis	Model	df	χ^2	p
	Measurement weights	13	9.555	.730
	Structural weights	19	14.176	.773
PALV-CVA	Structural covariances	25	21.217	.680
	Structural residuals	27	21.945	.740
	Measurement residuals	45	38.344	.748

Note. PALV = Path Analysis with latent variables; CVA = Cross-Validation Analysis.

rion, *satisfaction with teacher's work*. However, in this case it deserves to be mentioned that, as could be expected, the prediction weight of CMC in relation to the criterion variable is highly significant, as expected, while the prediction weight of both management strategies is non-significant. This last result was also unexpected, as correlations between the scores between these variables were significant ($r_{\text{AS-TRDDV}} = -.332, p < .001$; $r_{\text{CS-TRDDV}} = .240, p < .001$). This result means that, probably due to the correlation between predictors, both management strategies, AS and CS, do not increase the amount of the criterion variance explained by classroom motivational climate.

Multi-group cross-validation analysis of the regression model

In order to test the validity of the regression model, a multi-group analysis was carried-out using both sub-samples. Again, in relation to the fit statistics presented in Table 5, except χ^2, probably due to the sample size, the adjustment indexes are well inside acceptable limits. Moreover, the model comparison statistics presented in Table 5 show that fit is not reduced significantly even if restrictions on measurement weights, structural weights and covariances, and structural and measurement residuals are imposed. So the model should be accepted.

Discussion

Summarizing the contributions of this study in relation to its initial objectives, it can be said, first of all, the DMCQ structure has adequate factorial validity, and the scales derived from CFA have also good reliability. The results have shown that behaviour managing strategies can be grouped in two categories, aversive and constructive. On the

one hand, aversive strategies include the use of public warning, threat or punishment, displacement of the problem to another person, etc. On the other, constructive or supportive strategies include the use of instructional strategies such as to explain the desired behaviour and the consequences thereof, to teach self-control strategies, to praise the student for behaving in the appropriate way, etc. These results are convergent with those provided by reviewed research.

Second, data support most of the initial suppositions tested on the effects of different behaviour management categories, but not all. According to initial expectancies, based on a previous review of relevant literature, the use of constructive non-exclusionary discipline strategies is perceived by students as producing a decrease of disruption, whereas the use of aversive exclusionary discipline strategies is perceived as ineffective for producing a decrease of misbehaviour in the long run, a result similar to that found by Mitchell and Bradshaw (2013). Considering these results, it could be expected that the use of each kind of strategy would influence in the students' satisfaction with teacher's work. In fact aversive and constructive strategies show very low but significant correlations with student's satisfaction with teacher work. However, contrary to initial expectancies, path analysis has shown that neither of them has a

significant weigh in determining the level of such satisfaction. This result may have several explanations. It might be that disruption is not frequent enough to demand an answer from the teacher —at least in our sample—, and so, that teachers' way of dealing with disruption does not play a role in determining student's satisfaction. It can also happen that the adequate way of managing disruption contributes to student's satisfaction with teacher's work only in relation to the disruptive student. This fact would not affect the general satisfaction of his/her peers with their teacher's work, though if the strategies were aversive, they could have an exclusionary effect on the disrupting student. In any case, the effect of the low but significant correlation existing between disruption managing strategies and satisfaction with teacher's work becomes diluted because of the strategies correlation with CMC. Besides, according to initial expectancies, learning oriented CMC has a very strong effect in predicting students' satisfaction with teachers' work, a fact found also in previous studies (Alonso-Tapia & Fernández, 2008). Again, however, though CMC has a great and significant correlation with the perceived role of the teacher in the decrease of disruptive behaviour, it has not a significant weigh in determining such decrease. Given the high correlation existing between these two variables, this fact can be explained by the high and

significant correlation existing between CMC and the two categories of behaviour managing strategies. It seems that when students perceived that disruptive behaviour decreases, they have into account not only the specific managing strategies used by the teacher, but also the whole set of teaching patterns that configure the CMC, though they give primacy to the way their teachers use for managing disruption instead of to the teaching patterns that configure the CMC.

Our results have practical and theoretical implications. From a practical point of view, first, in order to favour the decrease of disruption not only in the short run, it is necessary to favour the use of constructive strategies for dealing with disruption and to avoid the use of aversive and exclusionary strategies, as they have an effect in the long run opposite to that intended, as already was pointed by Soodak (2010): "all members of the school community need to consider the reasons for and implications of punishing and excluding students and then determine whether alternative strategies, such as positive behavioral supports, would be more effective in reaching the school's goals" (p. 332) and to develop a truly inclusive school community. Second,

in order to favour the increase of students' satisfaction with teacher's work, it is also necessary that teachers create a learning oriented CMC using at least the teaching patterns gathered in Figure 2.

As for the theoretical implications, a question that arises from results, but related to the practical implications just mentioned, has to do with factors determining why teachers use each kind of strategy in a more or less prevalent degree. In order to favour teachers' use of the most adequate strategies, it is necessary to answer this question. Lopes and Santos (2013) have studied whether teacher's beliefs and goals are the cause, but their results are not conclusive. So, this is a matter that deserves additional research.

Finally, the main limitation of this study is that results are based on the point of view of students. It is necessary to know the teacher's point of view and to compare it with the students' point of view as previous researches that we have taken into account as Gotzens et al. (2003). If there were discrepancies between the points of view of teachers and students, their implications for teacher training should be analysed taking into account the interaction of other educational contexts and agents.

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