# A full array of emotions: An exploratory mixed methods study of teachers' emotions during a school inspection visit

Amy Quintelier*, Jan Vanhoof, Sven De Maeyer

*University of Antwerp, Belgium*

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ABSTRACT

Scholars often focus on the presence of teacher stress and anxiety as emotional side effects of a school inspection, though this limited focus has resulted in an incomplete view of teachers' experiencing of other emotions. Additionally, lack of evidence on positive emotional inspection outcomes raises questions about the presence of such emotions during a school inspection visit. In this study, we examined the presence of teachers' emotions with regard to different moments during the actual school visit. Additionally, we explored teachers' cognitive responses associated with the experience of these emotions. Survey data from 316 teachers in 42 primary schools is analyzed using multilevel analyses. Findings show that emotions of joy were most frequently reported with regard to the three moments. Emotions of anger and sadness were reported to a lesser extent. Findings showed that friendly, constructive and transparent communication between both parties is important for teachers' experience of positive emotions.

## 1. Introduction

Education stakeholders are often sceptical of inspectorates' pursuit of school development and educational quality (Landwehr et al., 2011). School inspections can have significant financial and reputational consequences for below-average performing schools (Case, Case, & Catling, 2000; Jones & Tymms, 2014), and they can also cause emotional distress and mental health problems among teachers (e.g. Ehren, Altrichter, McNamara, & O'Hara, 2013; Penninckx & Vanhoof, 2015; Perryman, 2006, 2007; Quintelier, Vanhoof, Heyninck, & Penninckx, 2016; Quintelier, Vanhoof, & De Maeyer, 2018). As Brunsden, Shevlin, and Davies (2006) indicated, even schools that have positive inspection outcomes have an increased degree of teacher anxiety and stress as a result of such inspections. Brunsden et al. (2006) therefore concluded that 'it is the inspection experience itself and not its outcome that is generating psychological distress' (p. 28). From this perspective, understanding the relationship between a school inspection and teachers' emotions is essential. As the nature and intensity of emotions can vary according to the particular inspection situation (Frijda, 1993), the study of teachers' emotions during a school inspection visit should include measures related to different events during such a visit.

In general, researchers identified the notification period (Brimblecombe, Ormston, & Shaw, 1995), lesson observations (e.g. Wilcox & Gray, 1996), the absence of feedback after the lesson observation (Brimblecombe et al., 1995; Quintelier et al., 2018) and the unfavourable consequences of a negative inspection outcome (e.g. Hopkins et al., 2016; Penninckx & Vanhoof, 2015) as sources of anxiety and frustration among teachers. However, teachers' negative emotions decrease when inspectors are perceived as professional, collegial and nonthreatening (McNamara & O'Hara, 2006). A positive inspection outcome and feeling appreciated by inspectors can engender emotions of relief, euphoria and pride among teachers (McCrone et al., 2007; Ofsted, 2007; Quintelier et al., 2018).

Penninckx and Vanhoof (2015) reviewed evidence of the existence of emotional side effects of school inspections among school leaders and teachers. Remarkably, in each of the 28 reviewed studies, school inspections led to the experiencing of negative emotions, such as anxiety and anger, while positive emotions were infrequently reported in the results sections. Inevitably, this emphasis on negative emotions raises certain questions—i.e. whether school inspections elicit the emotions of joy and happiness as well as whether the research community has neglected reporting these emotions (Penninckx & Vanhoof, 2015). To correct this imbalance, the current knowledge base would benefit from studies that examine and understand the presence and intensity of various emotions. Therefore, the general aim of this study is to examine and understand teachers' emotions, their intensity and the precise moment during which a school inspection evokes them.

In addition, there is broad consensus on the importance of cognitive

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* Corresponding author at: Edubron Research Unit, University of Antwerp, Gratiekapelstraat 10.304, Antwerp B-2000, Belgium.
*E-mail address:* amy.quintelier@uantwerpen.be (A. Quintelier).

responses (or thoughts) as key precursors of emotions (Frenzel, Goetz, Stephens, & Jacob, 2009). According to proponents of appraisal theory (e.g. Frijda, 1993; Lazarus, 1991; Scherer, 2005), individuals evaluate whether a situation is relevant to their goals or well-being. Consequently, emotions occur as a response to the evaluation of the event (Roseman & Smith, 2001; Smith & Lazarus, 1990). As these cognitive responses arise from individuals' beliefs and past experiences, the same event elicits different emotions in individual people (Lazarus, 1991; Sutton & Wheatley, 2003). While the assumption that teacher emotions –and their intensity– result from appraisals pertaining to teaching goals (e.g. maintaining order, helping students reach learning goals), have been substantiated by multiple studies on teachers' emotions and teacher burn out (Chang, 2009; Frenzel, 2014; Sutton & Wheatley, 2003), the relationship between teacher emotions and their cognitive antecedents in school inspection context remains largely unexplored.

As Day and Lee (2011, p. 2) highlighted, both emotions and cognitive responses are key factors in 'teachers' capacities to transform their circumstances, as well as in their responses to change'. General research on feedback has previously substantiated the essential role of emotions and cognition for learning, motivation and feedback acceptance (e.g. Brett & Atwater, 2001; Greller & Herold, 1975; Ilgen, Fisher, & Taylor, 1979; Leung, Su, & Morris, 2001). Additionally, a recent study of Schweinberger, Quesel, Mahler, and Höchli (2017) found that teachers' evaluation of school inspectors' feedback strongly impacts on knowledge acquisition within the school. From this perspective, research on the interplay of teachers' emotions and cognitive responses during a school inspection visit can contribute to further knowledge development on how school inspections can encourage behavioural change among teachers (Ehren & Visscher, 2008).

Based on the above discussion, the aims of the study are threefold. First, only a few studies in the field of inspection research have involved a quantitative analysis of teachers' emotions during a school inspection visit. To overcome this research lacuna, quantitative data will be used to examine the intensity and key moments of teachers' emotions with regard to (1) the introductory meeting, (2) their conversation with the inspectors and (3) the final inspection outcome (RQ1). Second, as suggested by Creswell and Clark (2017), expanding the quantitative approach to research on emotions by incorporating qualitative analysis would provide a unique angle that could deepen understanding of the role of emotions in the feedback acceptance process. Consequently, in this study, we examine which cognitive responses are reported by teachers regarding the inspection visit (RQ2). Finally, the results reported here will serve to answer the question whether teachers' cognitive responses help to understand the extent to which teachers differ in their emotional responses toward the inspection visit? As such, this study will contribute to a more comprehensive understanding of the relationship between teachers' emotions and teachers' cognitive responses regarding the inspection visit.

Thus, this study adds to the literature by using a convergent design that allows an in-depth understanding of the interplay between teachers' emotions during a school inspection visit and teachers' cognitive responses regarding features of the school inspection visit (Creswell & Clark, 2017). This design may help address some of the challenges in conducting a school evaluation, and, potentially, minimize negative emotional experiences of teachers under these circumstances.

## 2. Theoretical framework

Prior to addressing the methodology and results of the current study, a conceptualisation of each of the concepts is presented. Thereafter, we provide a brief explanation of why Parrott's (2001) emotion classification is used to describe teachers' affective responses during a school inspection. We conclude this section with an overview of findings from earlier research on the emotional side effects of a school inspection on teachers.

### 2.1. Emotions, affective responses and cognitive responses

Keltner and Ekman (2003, p. 163) defined *emotions* as 'brief, rapid responses involving physiological, experiential, and behavioural activity that help humans respond to survival-related problems and opportunities'. While comparing and integrating different theories and models on emotions, Sander (2013) distinguished comparable characteristics of emotions, such as multiple components, brief duration and rapid changeable. In addition, Sander (2013) also focused on the importance of the cognitive antecedents of emotions.

In line with the appraisal theory, Sander (2013) emphasised the interplay between emotions and cognition and determined that evaluations (appraisals) of situations and events, rather than the events themselves, elicit emotions (e.g. Frijda, 1993; Lazarus, 1991; Roseman & Smith, 2001). Differences in these evaluations occur due to individuals' *cognitive responses* (i.e. thoughts that occur during the evaluation of these events), which depend on individuals' beliefs and past experiences. *Affective responses* refer to how an event makes an individual feel (Chen, Liao, Wu, & Zhang, 2017).

### 2.2. Categorisation of emotions

Most research on emotion has shown a distinction between positive and negative emotions (e.g. Sander, 2013; Sutton & Wheatley, 2003). *Positive* emotions (e.g. happiness and joy) refer to the emotions that arise when an individual is making progress towards a goal while *negative* emotions (e.g. fear, anger, and sadness) stem from goal incongruence (Izard, 2007, 2011; Schutz & Pekrun, 2007). However, since surprise has been depicted as an emotion that can be both positive and negative (see Fontaine, Scherer, Roesch, & Ellsworth, 2007) this dichotomous classification may be too simplistic.

In another approach to emotion classification, Parrott (2001) divided six primary emotions— i.e. love, joy, surprise, anger, sadness and fear—into non-basic secondary and tertiary emotions (see Table 1). The secondary division contains more emotions within each primary emotion group. Table 1 also shows a third level, which includes an extension of the branches from the secondary emotion group. According to Bahia, Freire, Amaral, and Estrela (2013) and Chen (2016), this classification best fits the study of emotions in the educational setting. Parrott did not only identify more than 100 emotions and provided a comprehensive overview of human emotions; he also identified the connection between varying emotions. Therefore, this classification of emotions provides a rich framework to analyse the emotions of teachers in this study (Chen, 2016).

### 2.3. Emotional side effects of school inspections on teachers

Findings from Penninckx and Vanhoof's (2015) review revealed that anxiety and stress were the most frequently reported negative side effect of school inspections on teachers. Experiences of anger, frustration, grief, guilt and resentment have been reported to a lesser extent. Research in school inspection context has provided evidence that school inspectors' credibility, such as their attitude, expertise and communication skills, as well as the final inspection outcome are associated with teachers' emotions (McNamara & O'Hara, 2006; Penninckx & Vanhoof, 2015). To a lesser extent, inspection research has demonstrated the importance of the perceived fairness and accuracy of the inspection process and feedback message regarding the emotions that teachers experience (e.g. Gustafsson et al., 2015).

In another study, Penninckx, Vanhoof, De Maeyer, and Van Petegem (2016) compared school staff's emotions before, during and after an inspection. A strong increase in anxiety and stress was found before and during the inspection. As research has shown, during a school inspection visit, teachers perceive the need to perform well in order to demonstrate their competences. However, since they are unable to control the situation in which they have to operate, teachers experience anxiety

**Table 1**
Parrott's emotions by group (2001).

| Primary emotion | Secondary emotion | Tertiary emotion |
| --- | --- | --- |
| Love | Affection | Adoration, Fondness, Liking, Attractiveness, Caring, Tenderness, Compassion, Sentimentality |
| | Lust | Arousal, Desire, Passion, Infatuation |
| | Longing | Longing |
| Joy | Cheerfulness | Amusement, Bliss, Gaiety, Glee, Jolliness, Joviality, Joy, Delight, Enjoyment, Gladness, Happiness, Jubilation, Elation, Satisfaction, Ecstasy, Euphoria |
| | Zest | Enthusiasm, Zeal, Excitement, Thrill, Exhilaration |
| | Contentment | Pleasure |
| | Pride | Triumph |
| | Optimism | Eagerness, Hope |
| | Enthrallment | Enthrallment, Rapture |
| | Relief | Relief |
| Surprise | Surprise | Amazement, Astonishment |
| Anger | Irritation | Aggravation, Agitation, Annoyance, Grouchy, Grumpy, Crosspatch |
| | Exasperation | Frustration |
| | Rage | Anger, Outrage, Fury, Wrath, Hostility, Ferocity, Bitter, Hatred, Scorn, Spite, Vengefulness, Dislike, Resentment |
| | Disgust | Revulsion, Contempt, Loathing |
| | Envy | Jealousy |
| | Torment | Torment |
| Sadness | Suffering | Agony, Anguish, Hurt |
| | Sadness | Depression, Despair, Gloom, Glumness, Unhappy, Grief, Sorrow, Woe, Misery, Melancholy' |
| | Disappointment | Dismay, Displeasure |
| | Shame | Guilt, Regret, Remorse |
| | Neglect | Alienation, Defeatism, Dejection, Embarrassment, Homesickness, Humiliation, Insecurity, Insult, Isolation, Loneliness, Rejection |
| Fear | Horror | Pity, Sympathy |
| | Nervousness | Alarm, Shock, Fear, Fright, Horror, Terror, Panic, Hysteria, Mortification |

and psychological distress (Perryman, 2006). Teacher anxiety and stress were also reported when inspectors observe lessons and interview teachers (Macbeath, 2008; Varnava & Koutsoulis, 2006). Moreover, Dean (1995) determined that certain strategies, such as meeting the inspectors in advance and gaining information about the inspection procedure and evaluation criteria, lowered teachers' anxiety and stress it ('fear of the unknown') but did not remove them entirely.

Fear and anxiety are experienced to a lesser extent when teachers perceived school inspectors as respectful, professional, friendly and nonthreatening (Ehren & Visscher, 2008; McNamara & O'Hara, 2006; Penninckx et al., 2016). Receiving feedback can cause anxiety when teachers feel that their professionalism is questioned or when they have no opportunities to discuss this feedback. Conversely, teachers have reported feeling disappointed and stressed when they were unable to discuss the inspectors' feedback after lesson observations (Brimblecombe et al., 1995). Finally, the consequences of a negative school inspection outcome, in terms of the use of sanctions and rewards, can also cause teacher anxiety (Hopkins et al., 2016). Research has shown that if a school is judged to be failing, teachers and school leaders experience frustration, anger, depression, fear and shame (Gärtner, Füsemann, & Pant, 2009). Brunsden et al. (2006) also found that schools that receive a positive outcome are not immune to negative emotions. as an increased level of anxiety was noted in such cases. Thus, the researchers concluded that 'it is the inspection experience itself and not its outcome that is generating the psychological distress' (Brunsden et al., 2006, p. 28).

The low visibility of positive emotions such as joy in inspection research raises questions about the presence of these emotions during a school inspection. Only a few studies have identified a positive inspection outcome and the perception of being appreciated by inspectors as sources for the emotions of satisfaction, relief, euphoria and pride among teachers (McCrone et al., 2007; Ofsted, 2007; Quintelier et al., 2018). Such emotions are regarded as a powerful source for teachers' motivation, resilience, perseverance and job satisfaction (Day & Lee, 2011; McCrone et al., 2007; Scanlon, 1999).

Although stress and emotions are related constructs, findings from previous research have shown that the experience of stress is often associated with negative emotions, such as depression, anxiety and anger, and that stress is an expression of underlying emotional

responses to a specific situation or event (Dickerson & Kemeny, 2004; Folkman, 2008; Lazarus, 2001). Consequently, solely considering stress as the most important emotional side effect of school inspections results in a limited and oversimplified view of the full array of emotions (Lazarus, 2001).

Given the importance of emotions and cognition as essential for learning, motivation and feedback acceptance processes (Brett & Atwater, 2001; Day & Lee, 2011), this study examined the interplay between teachers' affective and cognitive responses during a school inspection. It aims to contribute to further knowledge development on how school inspections can encourage behavioural changes among teachers (Ehren & Visscher, 2008).

## 3. Method

In order to understand how the differences in teachers' emotions can be explained by teachers' cognitive responses to the inspection visit, we have adopted a convergent mixed methods design (previously known as concurrent nested mixed methods design) (Creswell & Clark, 2017). In this design both quantitative and qualitative data are collected during the same stage, although priority is given to the quantitative data, obtained through closed-ended questionnaires, while the qualitative data, gathered from brief, open-ended questions, are embedded within the larger study design. Multilevel models were used to interpret and compare teachers' emotions in schools, while the open-ended questions added contextual information to the quantitative measurements (Cohen, Manion, & Morrison, 2011; Creswell & Clark, 2017). Since this study was conducted in Flanders, we first provide an overview of the Flemish school inspection procedure.

### 3.1. Research context

The Flemish educational context is characterised by a large degree of school autonomy, as schools develop their own curriculum, school-work plan, teaching methods, student assessments and certification (OECD, 2013). Since there are no central examinations, an external evaluation of Flemish subsidised schools is reserved for the Flemish Inspectorate of Education, an independent body under the direct jurisdiction of the Minister of Education and Training of the Flemish

Government. Once every six years, the Inspectorate examines the extent to which the school's offered education meets the quality expectations of the reference framework and determines whether it is in line with the regulations. Additionally, they investigate the extent to which a school develops its own quality with regard to management and quality assurance of teaching and learning practices. The Inspectorate also has a stimulating role that involves engaging in a development-oriented dialogue with teachers and school management (Vlaams Ministerie van Onderwijs en Vorming, 2016).

After an introductory meeting between the visiting inspection team and the school staff, the inspection procedure begins with the audit phase. The audit draws upon an analysis of the school's and teachers' documents and observations, supplemented by conversations with the school policy team, teaching staff, pupils and pupils' parents. At the end of the audit, inspectors challenge the school staff to reflect on assumptions about the school's educational quality during discussions. Doing so enables teachers to understand the discrepancies between current and desired practices. After these meetings, the final outcome of the inspection determines whether or not the school retains its recognition. There are two possible inspection outcomes: (a) a favourable opinion (with or without major shortcomings) and a school's retention of its recognition without a follow-up or (b) an unfavourable opinion and the initiation of the withdrawal procedure of the recognition starts unless the school sets up an improvement plan and obtains assistance from an external agency. An inspection report is developed based on a generic template, and visual means are used to present the school's strengths and shortcomings. In order to support quality improvement, opportunities for improvement are addressed too (Vlaams Ministerie van Onderwijs en Vorming, 2016).

### 3.2. Respondents and data collection

Convenience sampling was used to select the respondents in this study (Cohen et al., 2011). The sample included every primary school in Flanders (Belgium) that was inspected between January and May 2018. Although retrospective research has suggested that individuals remember their emotions accurately after 90 days (Barrett, 1997) as well as after one year (Röcke, Hoppmann, & Klumb, 2011), current beliefs can influence the memory of prior emotional experiences (Robinson & Clore, 2002). Therefore, the period between inspection and the data collection was kept as short as possible to capture the emotions respondents experienced. Between two and eight weeks after the inspection, every school leader of the 165 inspected primary schools received a phone call, which was followed by an email informing them about the study. When school leaders agreed to participate, paper or online questionnaires (school leader's preference) were sent to staff members in teaching or managing positions in these schools. A preliminary version of the questionnaire was discussed with three teachers of a recently inspected primary school (this school was excluded from further participation). The feedback gained from these discussions led to adaptations to the final questionnaire. The data of 316 teachers were collected in 42 schools. With regard to the inspection outcome, only schools who received a favourable opinion were willing to participate. From the 165 contacted schools, 159 received a favourable opinion (96%), while six schools (4%) received an unfavourable opinion (Onderwijsinspectie, 2019).

We surveyed both preschools and primary schools. Regarding the school network, both private and public schools were included. A total of 34.4% of the respondents were from preschools, and 59.0% worked in primary schools. A total of 6.7% worked as preschool and primary teachers. The mean age of the respondents was 39 years, and the range of ages spanned from 21 to 59 years of age. Mean of respondents' teaching experience in their current school was 13.8 years (experience range: 1–39 years of experience), while their overall teaching experience was 17.3 years. In this sample, 76.1% of the respondents are employed full-time, 23.9% of the respondents are employed part-time.

Further, 87.7% of those taking part in the study were women, and 12.3% were men. These figures indicate a good representation with regard to the target population: Of all teachers in Flemish schools, 13.5% are men and 86.5% are women (Overheid, 2018).

### 3.3. Measures

#### 3.3.1. Quantitative data

Teachers were asked to describe the presence and intensity of emotions with regard to (1) the introductory meeting; (2) the respondent's meeting ('inspection meeting') with the inspection team about the professional practice and the learning and teaching quality; and (3) the announcement of the final outcome.

Based on previous school inspection research (see 1.1) and in line with Parrott's classification (2001), we selected 13 emotions that can be distinguished into the following primary emotion categories: (1) joy: satisfaction, relief and pride; (2) anger: anger, frustration and annoyance; (3) sadness: hurt, unhappy, disappointment, humiliation and dejection; (4) surprise; and (5) fear. Respondents were asked to rate the extent to which they had felt each of the above-mentioned emotions on 5-point scales that ranged from 1 (not at all) to 5 (to a very great extent).

The sample of 316 teachers was approached to conduct exploratory factor analysis (EFA) for each to generate the model using R 3.5.1. To develop the model, cut-off values of 0.40 were used as a minimum for significant factor loadings (Stevens, 2012). Other items were removed when they did not match logically and theoretically with other items in the same factors. During this process, 3 items (anger, disappointment and unhappy) were dropped.

Subsequently, we conducted a confirmatory factor analysis, using the Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA) and (Standardized) Root Mean Square Residual (SRMR) as fit indices for each moment of measurement (introductory meeting, inspection meeting, and announcement of the final outcome). Hu and Bentler (1999) cut-off values were used as indications for a good model fit: CFI and TLI values between 0.90 and 0.95 or greater, RMSEA values between 0.08 and 0.06 or below, and SRMR values between 0.10 and 0.08 or below, although some authors consider these criteria as too strict (Marsh, Hau, & Wen, 2004). The results from the CFA reveals that the fit of the instrument was between good and sufficient for the introductory meeting (CFI = 0.995; TLI = 0.992; RMSEA = 0.040; SRMR = 0.022), inspection meeting (CFI = 0.981; TLI = 0.968; RMSEA = 0.083; SRMR = 0.038) and announcement of the final outcome (CFI = 0.985; TLI = 0.975; RMSEA = 0.070; SRMR = 0.044).

Additionally, we calculated the Cronbach's alpha values in order to evaluate the reliability of the instrument. As Table 2 shows, the Cronbach's alphas for these scales were satisfying (anger, unhappy and disappointment were not included to calculate Cronbach's alpha and were excluded from further quantitative analysis too).

#### 3.3.2. Qualitative data

Following each of these close-ended questions, respondents were asked a brief, open-ended question regarding why they had experienced these emotions in each of the moments. With this question, respondents could clarify their quantitative answers and provide details on the self-perceived causes for these emotions during the school inspection visit (Cohen et al., 2011).

### 3.4. Data analysis

#### 3.4.1. Quantitative data

Our data can be viewed as multilevel multivariate data where responses at different time points (M1, M2, M3) are treated as different variables (Rabe-Hesketh & Skrondal, 2008) that are modelled simultaneously. These responses are a series of repeated measurements nested

**Table 2**
Psychometric and descriptive statistics.

| Primary emotion | Secondary and tertiary emotions | M1 mean | sd | M2 mean | sd | M3 mean | sd | M1 Cronbach's alpha | M2 Cronbach's alpha | M3 Cronbach's alpha |
|---|---|---|---|---|---|---|---|---|---|---|
| Joy | Satisfaction | 3,02 | 1,00 | 3,27 | 1,17 | 4,03 | 1,08 | 0.79 | 0.91 | 0.90 |
| | Relief | 2,75 | 1,20 | 3,08 | 1,22 | 3,95 | 1,13 | | | |
| | Pride | 2,31 | 1,18 | 3,08 | 1,27 | 3,89 | 1,26 | | | |
| Anger | Frustration | 1,27 | 0,69 | 1,43 | 0,89 | 1,37 | 0,89 | 0.95 | 0.92 | 0.89 |
| | Annoyance | 1,22 | 0,63 | 1,34 | 0,82 | 1,27 | 0,79 | | | |
| | *Anger* | *1,06* | *0,39* | *1,13* | *0,59* | *1,08* | *0,52* | | | |
| Sadness | Hurt | 1,05 | 0,30 | 1,18 | 0,65 | 1,15 | 0,63 | 0.94 | 0.89 | 0.77 |
| | Humiliation | 1,03 | 0,28 | 1,12 | 0,57 | 1,04 | 0,29 | | | |
| | Dejection | 1,07 | 0,42 | 1,17 | 0,65 | 1,14 | 0,61 | | | |
| | *Unhappy* | *1,06* | *0,38* | *1,22* | *0,74* | *1,18* | *0,66* | | | |
| | *Disappointment* | *1,12* | *0,51* | *1,43* | *0,91* | *1,41* | *0,96* | | | |
| Surprise | Surprise | 1,91 | 1,11 | 2,12 | 1,17 | 2,34 | 1,36 | / | / | / |
| Fear | Fear | 1,59 | 0.81 | 1.44 | 0.84 | 1.07 | 0.43 | / | / | / |

within individual subjects (teachers; level 2; N = 316) within individual schools (level 3; N = 42). Therefore, multilevel models were implemented to account for the fact that observations are not independent (Hox, Moerbeek, & van de Schoot, 2017).

In these models, we modelled three intercepts (being a mean score at each moment), three variances between teachers and three variances between schools (one per moment so the model considers that the variance between teachers and schools can be a function of the moment in the procedure). Given that we model a separate intercept for each measurement occasion, no variance is left at the lowest level (the responses at different time points within a teacher), so in the model this variance is fixed to the value zero. An analysis was conducted separately for each of the five primary emotions: joy, surprise, anger, sadness and fear.

The R-package 'nlme' (Pinheiro, Bates, DebRoy, & Sarkar, 2014) was used for the estimation. The R package ggplot2 (Wickham, 2016) was used to visualise the results.

### 3.4.2. Qualitative data

To integrate the findings of the closed questions and open questions in the questionnaire, we selected five schools with the highest above-average scores for each emotion. Schools were excluded from further analysis when they had fewer than five respondents. Ten schools were selected. (See Table 3 for an overview of the schools participating in the qualitative analysis, with the highest means (intercepts) for each primary emotion category shown in bold font.)

The software package Nvivo10 was used to analyse the qualitative data, and a thematic approach was applied (Braun & Clarke, 2006). First, all transcripts were read in an active way (searching for patterns and interesting ideas). Second, meaningful units in the transcribed interviews were generated. In a third step, codes were collated into themes and sub-themes. In the fourth step, after a review of the themes'

suitability for the data set, the themes were refined. As the fifth step, a final code tree was constructed, which represented the data as a whole. In the final step, the report was produced. To ensure the reliability of the coding, a second researcher independently recoded 30% of the data during the analysis, resulting in a Cohen's kappa of 0.74, thus representing 96.6% agreement (Sim & Wright, 2005).

## 4. Results

In this section, we first discuss the results of the multilevel analyses that address teachers' affective responses at different moments during the school inspection visit (RQ 1). We then describe teachers' cognitive responses that are associated with the presence of joy, surprise, anger, sadness and fear during these different moments (RQ2).

### 4.1. Teachers' emotions during a school inspection visit

Table 4 provides an overview of the estimates of fixed effects.

In general, the highest mean scores were found for joy ($Joy_{M1}$ = 2.71; $Joy_{M2}$ = 3.12, $Joy_{M3}$ = 3.88). Respondents experienced joy to a moderate—and even great—extent during the introductory meeting (M1), the inspection meeting (M2) and the announcement of the inspection outcome (M3), while surprise was experienced marginally during these moments ($Surprise_{M1}$ = 1.95, $Surprise_{M2}$ = 2.13, $Surprise_{M3}$ = 2.37). This is in contrast to the mean scores for fear ($Fear_{M1}$ = 1.59, $Fear_{M2}$ = 1.41, $Fear_{M3}$ = 1.07), which decreases remarkably during the inspection process and was experienced only marginally during the first two moments. Anger ($Anger_{M1}$ = 1.27, $Anger_{M2}$ = 1.41, $Anger_{M3}$ = 1.39) and sadness ($Sadness_{M1}$ = 1.05, $Sadness_{M2}$ = 1.16, $Sadness_{M3}$ = 1.12) were almost non-experienced.

Regarding the between-teacher variance, Table 4 shows that the between-teacher variance is the largest for respondents' reporting of

**Table 3**
Intercepts of the schools participating in the qualitative analysis.

| School | N | Joy M1 | M2 | M3 | Surprise M1 | M2 | M3 | Anger M1 | M2 | M3 | Sadness M1 | M2 | M3 | Fear M1 | M2 | M3 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *A* | 6 | −0.437 | −0.686 | 0.001 | 0.162 | 0.314 | **0.631** | 0.280 | **1.036** | **0.659** | 0.426 | **1.524** | **0.506** | 0.247 | **0.486** | −2.796e-02 |
| *B* | 7 | 0.113 | **0.744** | 0.621 | 0.117 | 0.355 | **0.562** | 0.002 | −0.132 | 0.337 | 0.013 | −0.033 | **0.295** | **0.286** | 0.141 | −6.906e-03 |
| *C* | 14 | 0.119 | 0.364 | **0.739** | 0.210 | 0.022 | −0.079 | −0.091 | −0.250 | −0.285 | −0.036 | −0.108 | −0.097 | 0.118 | 0.107 | −2.015e-03 |
| *D* | 9 | −0.027 | −0.178 | 0.646 | −0.031 | −0.133 | −0.146 | 0.183 | **1.040** | −0.369 | 0.050 | 0.276 | −0.037 | 0.157 | **0.270** | −4.899e-03 |
| *E* | 7 | 0.362 | **0.676** | **0.863** | **0.406** | **0.492** | **0.756** | −0.054 | −0.056 | −0.287 | −0.039 | −0.117 | −0.081 | −0.016 | −0.000 | −1.164e-02 |
| *F* | 7 | −0.102 | 0.222 | 0.480 | **0.417** | 0.184 | 0.016 | −0.061 | −0.168 | −0.235 | −0.035 | −0.104 | −0.076 | −0.213 | −0.194 | −8.830e-03 |
| *G* | 14 | 0.596 | **0.684** | 0.479 | **0.511** | 0.047 | 0.274 | −0.087 | −0.182 | −0.205 | −0.038 | −0.104 | −0.093 | −0.062 | −0.100 | −1.594e-02 |
| *H* | 9 | −0.147 | −0.456 | −1.509 | −0.399 | −0.326 | −0.483 | 0.120 | **0.431** | **1.030** | 0.149 | **0.335** | **0.446** | 0.070 | **0.148** | 6,892e-02 |
| *I* | 7 | −0.551 | −0.296 | **0.701** | 0.066 | 0.148 | 0.311 | 0.115 | **0.551** | −0.231 | 0.071 | **0.354** | −0.025 | **0.285** | **0.486** | −2.769e-02 |
| *J* | 5 | −0.350 | −1.137 | −1.788 | −0.268 | −0.295 | −0.503 | 0.117 | **0.457** | 0.256 | 0.104 | **0.311** | 0.239 | −0.018 | −0.046 | −6.929e-03 |

**Table 4**
Estimates of fixed effects.

| | Joy | | Surprise | | Anger | | Sadness | | Fear | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Parameter Estimate | SE | Parameter Estimate | SE | Parameter Estimate | SE | Parameter Estimate | SE | Parameter Estimate | SE |
| **Introductory meeting (M1)** | | | | | | | | | | |
| **Fixed effects** | | | | | | | | | | |
| Intercept | 2.707*** | 0.084 | 1.951*** | 0.094 | 1.266*** | 0.047 | 1.049*** | 0.025 | 1.590*** | 0.064 |
| **Variance estimates** | | | | | | | | | | |
| Between-school | 0.381 | | 0.385 | | 0.137 | | 0.098 | | 0.228 | |
| Between-teachers | 0.859 | | 1.046 | | 0.644 | | 0.291 | | 0.789 | |
| ICC | 0.307 | | 0.269 | | 0.175 | | 0.252 | | 0.224 | |
| **Conversation with inspector (M2)** | | | | | | | | | | |
| **Fixed effects** | | | | | | | | | | |
| Intercept | 3.124*** | 0.113 | 2.130*** | 0.092 | 1.405*** | 0.083 | 1.156*** | 0.061 | 1.408*** | 0.065 |
| **Variance estimates** | | | | | | | | | | |
| Between-school | 0.587 | | 0.347 | | 0.424 | | 0.328 | | 0.243 | |
| Between-teachers | 0.976 | | 1.118 | | 0.711 | | 0.460 | | 0.790 | |
| ICC | 0.376 | | 0.237 | | 0.374 | | 0.411 | | 0.235 | |
| **Announcement of the inspection outcome (M3)** | | | | | | | | | | |
| **Fixed effects** | | | | | | | | | | |
| Intercept | 3.879*** | 0.142 | 2.372*** | 0.114 | 1.387*** | 0.087 | 1.123*** | 0.039 | 1.074*** | 0.028 |
| **Variance estimates** | | | | | | | | | | |
| Between-school | 0.850 | | 0.509 | | 0.474 | | 0.190 | | 0.069 | |
| Between-teachers | 0.771 | | 1.270 | | 0.678 | | 0.387 | | 0.426 | |
| ICC | 0.524 | | 0.286 | | 0.411 | | 0.329 | | 0.139 | |

Note: Answer categories: (I experienced this emotion) 1 = not at all; 2 = to some extent; 3 = to a moderate extent; 4 = to a great extent; 5 = to a very great extent.
Note: (***) significant at p < .001-level.

surprise (between-teacher variance differs from $\sigma^2_{M1} = 1.05$ to $\sigma^2_{M3} = 1.27$), followed by joy ($\sigma^2_{M1} = 0.86$, $\sigma^2_{M2} = 0.98$). For most of the emotions, the between-teacher variance is the largest when respondents describe their affective responses regarding their conversation with the inspector. (For example, the between-teacher variance of joy is $\sigma^2_{M2} = 0.98$ and $\sigma^2_{M3} = 0.77$). Similar results were found for the between-teacher variances of anger and sadness with regard to respondents' conversation with the inspection team (respectively $\sigma^2_{M2} = 0.71$ and $\sigma^2_{M2} = 0.46$).

Notably, the results also indicated that the affective responses on the teacher level varied more than teachers' affective responses on the school level. In other words, the variation in affective responses is attributed more so to individual teachers' characteristics rather than to school membership. This supports the idea that teachers appraise school inspections differently and that their emotions occur as a result of the interpretations of the inspection rather than as a result of the inspection visit itself. A closer look at the results (as presented in Figs. 1 and 2) shows the variety in the development of teachers' affective responses in each of the schools (each line represents the mean scores for a single school unit during M1, M2 and M3, as shown in Fig. 1).

Whereas the figures above show that most schools had similar findings for surprise and fear, larger differences between schools were found for joy, anger and sadness with regard to teachers' conversation with inspectors and the announcement of the inspection outcome. Between-school variance is the largest for schools' reporting joy (between $\sigma^2_{M1} = 0.38$ and $\sigma^2_{M3} = 0.85$). Our results show that schools differ mostly in their experience of joy and surprise regarding the announcement of the inspection outcome (respectively $\sigma^2_{M3} = 0.85$ and $\sigma^2_{M3} = 0.51$). This is also the case for anger, although the between-school variances of anger and sadness are already larger with regard to teachers' conversations with the inspectors compared to the parameters for the introductory meeting (e.g. anger: $\sigma^2_{M1} = 0.14$ and $\sigma^2_{M2} = 0.48$). The between-school variance of fear decreases from the introductory meeting ($\sigma^2_{M1} = 0.23$) to the final outcome ($\sigma^2_{M3} = 0.07$).

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### 4.2. Teachers' cognitive responses in experiencing emotions

#### 4.2.1. Teachers' cognitive responses when reporting joy

Five schools (schools B, C, E, G and I) score higher than average on the experience of joy regarding the inspection visit. According to the teachers in the selected schools, the school inspectors provided a satisfactory environment during the introductory meeting. The teachers indicated they felt relieved when inspectors informed them about the inspection procedure and objectives.

Most teachers reflected on the inspectors' positive attitude and communication style during the conversations. In schools where inspectors are perceived as warm, friendly and open, teachers reported emotions of satisfaction and relief (schools B, C, E and G). When the inspectors recognised teachers' accomplishments in teaching and learning practices, teachers expressed satisfaction and pride (schools B, C and E).

> "We were very relieved and happy with the final (positive) outcome. It's a confirmation of what we fully believe in as a school. (teacher 151, school C)

In general, emotions of joy were related to teachers' willingness to respond to inspection feedback. Though the emotions of joy (satisfaction, pride and relief) were associated with a positive inspection outcome, teachers associated emotions of satisfaction with clear and constructive feedback (schools B and D). Teachers also responded with satisfaction when negative inspection feedback was perceived as accurate.
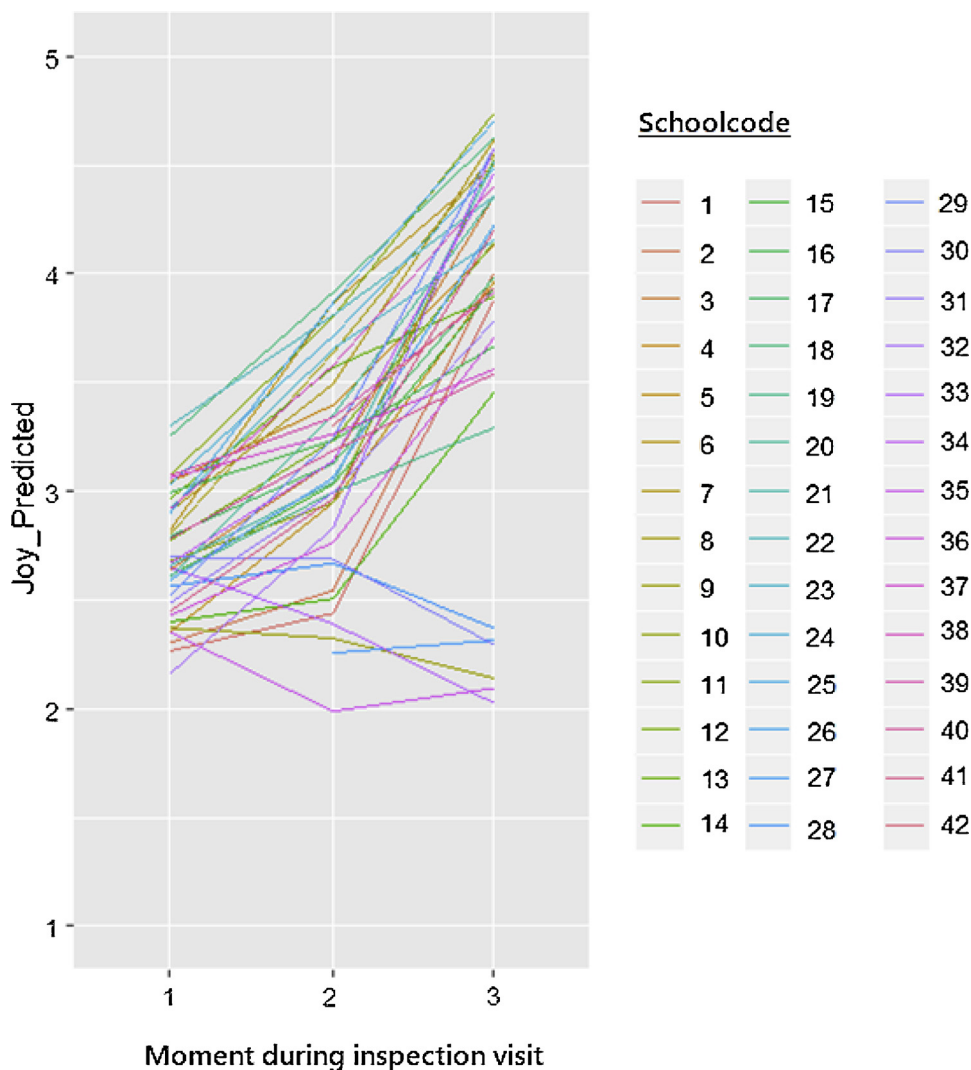
**Fig. 1.** Predicted scores for joy.

### 4.2.2. Teachers' cognitive responses when reporting surprise

In schools A, B, E, F and G, the scores related to surprise were above average. Teachers in these schools only reflected on their experience of surprise regarding the inspection outcome and not regarding the introductory meeting. Based on the few citations available, we presumed that unexpected positive inspection outcomes characterise the presence of surprise at the moment of the final outcome.

*"We've got two excellent domains, and the other ones were very good too. There was one area for improvement that has already been addressed. Wouldn't you be satisfied and surprised then?" (teacher 190, school E)*

Teachers in school A described a negative relationship between the school staff and the inspectors during the audit. Teachers reported disrespectful and rude inspector behaviour toward them. Although the inspectors became friendlier at the end of the audit, the teachers doubted the possibility of a positive outcome and were thus surprised by the unexpected positive result.

In schools B, E and G, the positive inspection outcome was in line with the teachers' expectations, but the absence of more substantial suggestions for improvement took many teachers by surprise.

### 4.2.3. Teachers' cognitive responses when experiencing anger

Against expectations, almost every school with higher self-reported anger received a positive inspection outcome (schools A, D, I and J). Only school H was characterised by a negative inspection outcome for

educational quality.

Inspectors' negative attitude and behaviour—unfriendly, brutal and overly critical behaviour towards teachers, pupils and even parents—were frequently cited as the main source of teachers' anger and frustration in schools A, H and I. The inspector's limited understanding of how the school organisation deviated from what was stated on paper due to the large class sizes (up to 28 toddlers) evoked frustration as well (school J).

In schools A, H and I, teachers attempted to defend themselves and protect their ideas, as they felt personally attacked by the inspection team. Under these circumstances, teachers pointed to the mismatch between the inspectors' negative communication style and the positive inspection outcome at the end of the process.

*"I don't understand why [they made] so many people cry that week, including myself, just to say that we are doing well afterwards". (teacher 214, school M)*

### 4.2.4. Teachers' cognitive responses when experiencing sadness

Schools A, B, H, I and J had the highest scores for sadness. Similar to the experience of anger, teachers referred to the inspectors' negative behaviour and poor communication skills as sources of disappointment when their conversations with inspectors lacked depth and evoked unwarranted negative expectations (schools A and I).

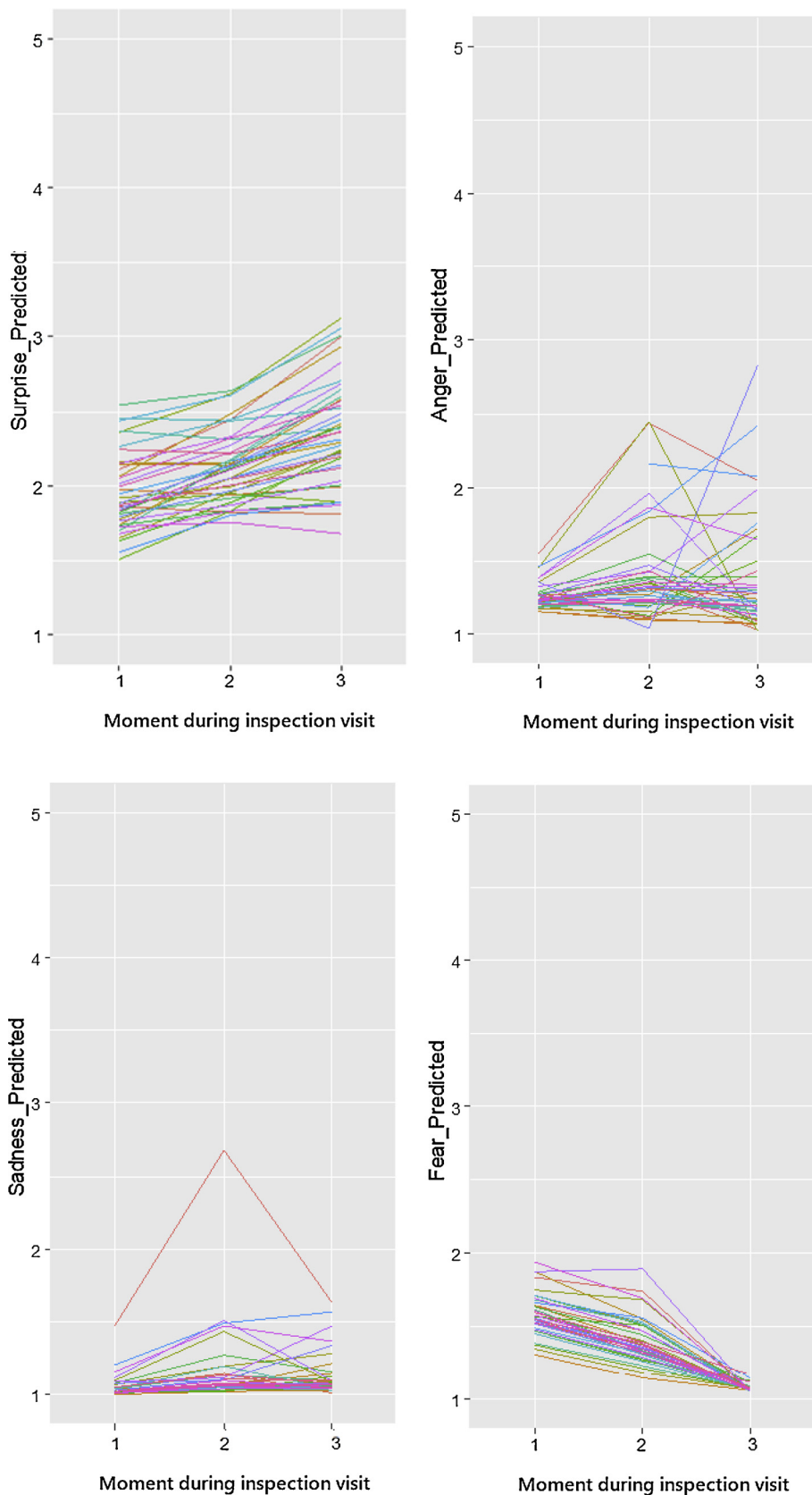Negative feedback that seems unjustified also results in

**Fig. 2.** Predicted scores for surprise, anger, sadness, and fear.

disappointment. In school H, teachers had cleaned the classrooms in advance of the inspection visit, which resulted in a remark about the absence of didactic material in the classroom. In addition, the absence

of further guidelines or strategies on the school level to deal with the shortcomings intensified teachers' disappointment (school J).

*"Their improvement comments are justified, but the steps to a successful*

*improvement process are not crystal clear". (teacher 180, school J)*

Despite a positive outcome on educational quality, the negative outcome for school B's habitability, safety and hygiene resulted in disappointed teaching staff. Teachers referred to the school board's negligence as the main cause for these deficits.

*"We exceed expectations in various areas. Due to the negligence of the chairman of the school board, we receive unfavourable advice. This is really disappointing". (teacher 146, school B)*

### 4.2.5. Teachers' cognitive responses when experiencing fear

The highest scores for fear were found in schools A, B, D, H and I. Regarding the introductory meeting, teachers referred to nervousness, an affective aspect of fear. Teachers stated that the actual start of the visit (schools B and I) and the unknown aspects of the new inspection approach caused high levels of fear (schools A and B). This was also the case for non-experienced teachers who had their first inspection visit (school A).

Additionally, teachers related fear to feelings of uncertainty about their teaching competences, especially with regard to the classroom observation (schools B, H and I). The thought of not being able to answer the inspectors' questions during the conversations with inspectors also induced fear (school D). One teacher revealed her fear of disappointing colleagues during the inspection conversations:

*"I was involved in school policy conversations and for that I was very nervous, I did not want to disappoint anyone". (teacher 149, school B)*

## 5. Conclusion and discussion

In this study, we examined the intensity and key moments of teachers' emotions with regard to the introductory meeting, teachers' conversation with the inspectors and the final inspection outcome, reporting findings from multilevel models. By analysing open-ended questions, the study contributes to a better understanding of the quantitative differences in teachers' emotions and of how teachers' emotions are associated with teachers' cognitive responses to the inspection visit.

Regarding the first research question, we found that teachers reported joy, followed by surprise, as their most frequently experienced emotion with regard to all three moments during an inspection visit. This is in contrast to the experience of fear, which was marginally reported for the introductory meeting and the inspection meeting. In contrast to the evidence collected in earlier school inspection research, anger and sadness were almost non-existent (see also Penninckx & Vanhoof, 2015). These findings add more insight to the discussion on the dominant presence of negative emotions in inspection research (Penninckx & Vanhoof, 2015).

The strong focus on development and the relatively low-stakes context that characterizes the Flemish inspection approach, compared to the high-stakes context in which most studies have been conducted, may explain these positive results (Van Bruggen, 2010). This viewpoint underscores the potential role that school inspectors can play as facilitators of effective pedagogical practices rather than their main purpose of holding schools and teachers accountable for student improvement. This study also demonstrates that teachers' experience of joy and surprise appear to be no less important than the experience of anger, sadness or fear in inspection research. To capture the full range of emotions that teachers experience with regard to school inspections, future research on emotional side effects of school inspections should examine a more extensive set of emotions than staying focused on teacher anxiety and stress.

Data also indicated that the affective responses on the teacher level varied more than teachers' affective responses on the school level. These results echo the claim of appraisal theorists (e.g. Frijda, 1993;

Lazarus, 1991) who support the idea that different perceptions of events cause different appraisals and thus different emotions in individual people. The qualitative analysis of the open questions illustrated the potential benefits of this mixed method study and indicated indeed that teachers' cognitive responses towards the different moments of the school inspection visit explain these differences largely.

According to the qualitative analysis, a positive inspection outcome does not ensure teachers' experiencing of solely positive emotions, such as joy. The attitude, behaviour and communication style of school inspectors is crucial in teachers' affective responses towards a school inspection visit. Although McNamara and O'Hara (2006) had previously reported that inspectors' respect and friendliness towards teachers serve as anxiety-relieving factors and are known to promote the acceptance of inspection feedback (Quintelier et al., 2018), they were not yet determined as joy-exciting stimuli during an inspection visit. In line with Dean's (1995) study, a positive perception of the inspectors during the introductory meeting reduces fear (relieves the 'fear of the unknown'). This initial contact with inspectors is of the utmost importance for teachers, as the inspectors can provide details about their objectives, scope and evaluation criteria in the beginning of the audit phase. This transparency fosters a sense of trust and understanding between teachers and inspectors (Ehren, 2016).

On a more negative note, although our quantitative data analysis revealed almost no experience of anger and sadness, teachers do largely associate their experience of frustration, annoyance and disappointment with school inspectors' negative attitude and poor communication skills during interactions with colleagues, pupils and parents. This is in line with the results of other studies, which also reported increased stress and anxiety among the school staff as a result of the inspectors' attitude (see Penninckx & Vanhoof, 2015). Additionally, teachers demand more support to implement inspection feedback, as the lack of support is also a cause of frustration. This finding relates to the question regarding whether teachers' emotions and cognitive responses have an impact on their acceptance and use of inspection feedback. Previous research has considered the role of emotions and cognition for learning, motivation and feedback acceptance (e.g. Brett & Atwater, 2001). In the school inspection context, this interplay has remained largely unexplored and may need further investigation to prove. Also, instead of exploring what factors influence teachers' affective and cognitive responses, it may be interesting to explore how these responses impact on teachers' classroom behaviour too.

Some limitations should be considered when interpreting the present results and in designing future research. First, although self-reporting is a primary method to assess emotions, the use of self-report questionnaires to examine teachers' emotions enhances the possibility of eliciting socially desirable responses (Pekrun, 2016). To decrease teachers' tendency to give socially desirable answers, we emphasised the confidentially and anonymity of the responses. Next, to decrease response drop out, we composed a survey that was short and easy to fill out. Although studies examining situationally induced emotions have used single items to measure emotions (Gross & Levenson, 1993), single item measures are more likely to contain error variance and may not accurately capture a respondent's emotion because the individual may interpret the item differently at that moment (Harmon-Jones, Bastian, & Harmon-Jones, 2016). When time is available, a multiple-item questionnaire should be used if possible. Nonresponse remains a problem for open-ended questions, as this only attracts respondents who are motivated to respond. It should be noted that more data were missing for the open-ended responses than for the quantitative measures. Therefore, conclusions and generalisations have to be drawn carefully. Also, although the moment of measurement was kept as short as possible, the retrospective character of the study has his limitations. Since recall-based ratings of emotions are filtered through memory, the issue of memory distortion has to be acknowledged. Although studies indicate that retrospective ratings of emotions contain accurate information about momentary emotions (Barrett, 1997), future

researchers need to study teachers emotions and the flow of these emotions during the inspection visit itself. Emotions measures (physiological recording devices and video records) obtained concurrently with emotion experience maximize validity and accuracy. Finally, the empirical evidence provided in this study is restricted to schools that have received a favourable opinion. In order to get a more comprehensive understanding of the nature of teachers emotions and associated perceptions, future research will need to come up with strategies for attracting schools with an unfavourable inspection outcome.

The findings of this study can contribute to the public and political debate on education reform, more specifically on new accountability measures. With a focus on school improvement, the relationship between teachers' emotions and cognitive responses regarding school inspection visits as well as their influence on teachers' acceptance and use of inspection feedback deserves further analysis. As emotions are an underlying reality in teachers' lives (Hargreaves, 2000), learning how to increase teachers' positive affective responses and diminish the negative ones during a school inspection visit can have far-reaching implications: it can not only motivate teachers to improve their classroom practices, but can also create a healthier and more productive evaluation climate in schools.

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