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Determinants of teachers' feedback acceptance during a school inspection visit

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ABSTRACT

Educational stakeholders generally assume that inspection feedback directly contributes to school improvement through the mechanism of feedback acceptance. Feedback research in general distinguishes between cognitive and affective responses as significant factors for feedback acceptance, but it also focuses on cognitive responses as antecedents of emotions and emphasises the interplay between cognition, emotions, and feedback acceptance. Quantitative evidence in external school evaluation research to support this view, however, is rather scarce. This study draws on quantitative data collected from 687 teachers in 80 Flemish primary schools that had recently been inspected. Using path analysis, we investigated the existence and strength of relationships between teachers' cognitive and affective responses and teachers' feedback acceptance. The analysis revealed that anger and feedback acceptance are predominantly explained by the perceived fairness of the evaluation process and outcome but that they are also explained by the perceived relevance of the provided feedback.

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School inspection; external evaluation; inspection feedback; emotions; cognitive responses

Introduction

In Europe, the use of school inspections to assess and hold schools accountable for goals related to student achievement and educational quality is well established. Some educational stakeholders also consider an inspection as a tool for improvement of quality and improvement of students' learning and achievement (Ehren et al., 2013). To stimulate school improvement, inspectors assess schools in accordance with a set of preconceived standards and give feedback on the schools' strengths and weaknesses during the school visits and in inspection reports (Ehren, 2016). Schools are supposed to accept this feedback and eliminate their shortcomings (Coe, 2002). Overall results of research on whether school inspections contribute to school development purposes, however, are far from conclusive (Husfeldt, 2011).

Although theories on schools as learning organisations and school improvement support the role of performance feedback in effecting change (Hattie & Timperley, 2007), feedback is only expected to represent an improvement tool for schools when it is understood, accepted, and eventually used by actors in schools. This is in line with the feedback process model of Ilgen et al. (1979), which suggests that the core mechanism

of the feedback process is acceptance of feedback. Even when feedback is highly beneficial for an organisation, it can be useless if the organisation's stakeholders do not accept it (Ilgen et al., 1979). From this viewpoint, teachers' feedback acceptance is required for them to support school improvement plans, to understand the benefits of innovations, and to feel secure in their role as implementers of particular actions (Leithwood, 2000). Nevertheless, feedback recipients do not always accept feedback. Research relates feedback acceptance to two concepts, namely, feedback recipients' cognitive and affective responses (Ilgen et al., 1979; Sander, 2013).

Cognitive responses to feedback are defined as the recipient's perceptions (or thoughts) regarding source credibility (expertise and trustworthiness), feedback fairness (distributive and procedural justice), and features of feedback (feedback sign, constructiveness, clarity, and relevance; e.g., Brinko, 1993; Ilgen et al., 1979).

Of these cognitive responses, school inspectors' credibility has received the most research attention. Although most researchers assume a positive relationship between a positive inspector attitude and school development (e.g., Chapman, 2002; MacBeath, 2006; Weiner, 2002), few studies support this hypothesis (Lowe, 1998; Office for Standards in Education [Ofsted], 2007). Penninckx et al. (2016) concluded that inspection quality is the strongest predictor of conceptual and instrumental inspection effects but did not further specify which component (the quality of the inspector's behaviour, the inspection's psychometric quality, and/or the transparency of the inspection) is the strongest determining predictor. In addition, Behnke and Steins (2017) showed that feedback quality is one of the key factors influencing the effect of inspections on principals. They did, however, not specify which feedback characteristics contribute to perceptions of high-quality feedback, nor did they take into account teacher reactions to feedback. These examples stress the need for a comprehensive view of the role that teachers' cognitive responses to the inspection process play in the acceptance of inspection feedback.

A second mechanism that can explain teachers' feedback acceptance is their emotional responses to inspection feedback. Non-educational research suggests that emotions such as anger can negatively influence the way in which individuals are able to receive and process feedback (e.g., Brett & Atwater, 2001). Nevertheless, to date, there has been little research investigating the role of teachers' affective responses in the acceptance of school inspection feedback. A recent qualitative study focused on the role of cognitive responses as antecedents of teachers' emotions during school inspection visits (Quintelier et al., 2018). Data indicated that teachers associate their experiences of frustration, annoyance, and disappointment with school inspectors' negative attitudes and poor communication skills. A positive attitude among school inspectors was found to be crucial in teachers' experiences of joy. In addition, the study indicated that teachers' affective responses vary more at the individual teacher level than at the school level. These results support the view of appraisal theorists, who also focus on cognitive responses as antecedents of emotional reactions and emphasise the interplay between emotions and cognition. In line with appraisal theorists (e.g., Frijda, 1993; Lazarus, 1991; Roseman & Smith, 2001), Sander (2013) determined that evaluations (appraisals) of situations and events, rather than the events themselves, elicit emotions. Differences in these evaluations occur due to individuals' cognitive responses, which depend on individuals' beliefs and past experiences. Relatively little is known, however, about the extent to which emotions mediate the relationship between cognitive responses (perceptions) and inspection

feedback acceptance. In the present study, we therefore examined the extent to which teachers' cognitive responses regarding inspection feedback are related to feedback acceptance and the extent to which this feedback acceptance is mediated by teachers' affective responses.

Based on these considerations, the aims of this study were twofold. First, the findings of previous studies suggest a link between teachers' cognitive responses and their acceptance of inspection feedback. To date, however, quantitative evidence to support this view is rather scarce. Given that feedback has a strong influence on teachers and the improvement of their teaching practice (Organisation for Economic Co-operation and Development [OECD], 2013), we examined how inspection feedback can enhance teachers' feedback acceptance. Second, we aimed to extend previous research by incorporating cognitive and affective responses to feedback within the feedback process model. Although most of the research to date has provided no direct evidence for affective responses as possible mediators of the relationship between cognitive responses and feedback acceptance, the importance of both cognitive and affective factors in the feedback process has been acknowledged by multiple scholars (e.g., Brett & Atwater, 2001; Ilgen et al., 1979). Since researchers have uncovered evidence of teachers' emotions as precursors of students' learning and achievement (Linnenbrink-Garcia & Pekrun, 2011; Schutz & Pekrun, 2007), identification of factors influencing these emotions could expand the current understanding of how school inspections can drive school improvement.

Previous research is discussed in the next section. We build on this literature review to develop a research model for our study (see Figure 1) and to formulate the research questions. Given our aim of studying the relationships between cognitive responses, affective responses, and feedback acceptance, we begin by discussing our conceptualisation of these concepts.

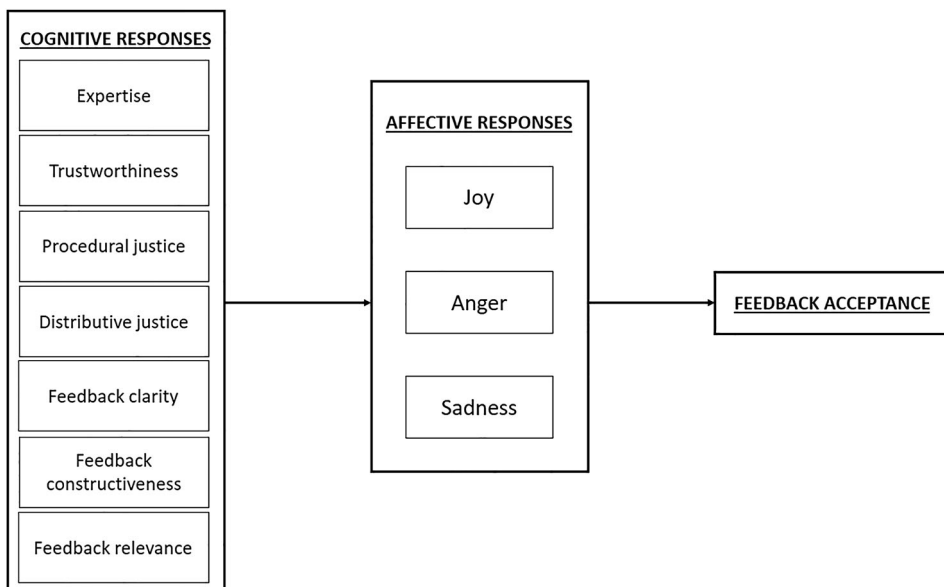


Figure 1. Research model with potential influencing factors for teachers' acceptance of feedback.

Conceptual framework

Cognitive responses

As previously stated, three main groups of recipients' cognitive responses (thoughts) to feedback have been widely discussed as significant factors influencing feedback acceptance in organisational psychology: (a) source credibility (source's expertise and trustworthiness), (b) perceived violations of procedural and distributive justice (organisational justice), and (c) feedback characteristics (feedback sign, constructiveness, clarity, relevance; e.g., Brett & Atwater 2001; Greller & Herold 1975; Ilgen et al., 1979; Leung et al., 2001). A definition and overview of each variable, alongside evidence from other educational and non-educational contexts, is included in Table 1.

The current study focused on determining the extent to which the different cognitive responses (expertise, trustworthiness, procedural justice, distributive justice, feedback constructiveness, feedback clarity, and feedback relevance) contribute independently to the prediction of teachers' affective responses and their feedback acceptance.

Affective responses

Conceptualisation and classification of teachers' emotions

In line with appraisal theorists (e.g., Frijda, 1993; Lazarus, 1991; Roseman & Smith, 2001), Sander (2013) suggests that evaluations (appraisals) of situations and events, rather than the events themselves, elicit emotions (*affective responses*). Differences in these evaluations occur due to individuals' cognitive responses, which depend on individuals' beliefs and past experiences. For example, according to most appraisal theorists, happiness/joy involves the attainment of a goal, while anger usually involves negative behaviour towards the person (or the object) that is deemed responsible for the unpleasant outcome (blaming). When a situation is evaluated as an irrevocable loss, emotions of sadness are more likely to occur (e.g., Scherer, 2005).

While most researchers of emotions (e.g., Sander, 2013; Sutton & Wheatley, 2003) distinguish between positive (happiness and joy) and negative emotions (fear, anger, and sadness), recent studies in the educational setting (Bahia et al., 2013; Chen, 2016) have explicitly referred to the emotion classification of Parrott (2001). Parrott divided six primary emotions – that is, love, joy, surprise, anger, sadness, and fear – into secondary and tertiary emotions. These divisions contain additional emotions within each primary emotion group. Parrott identified over 100 emotions and provided a comprehensive overview of human emotions in which he also identified connections between varying emotions. This classification of emotions is used to analyse the emotions of teachers in this study.

Emotions in inspection research

While extensive research has been conducted on the emotions induced by inspection (see Penninckx & Vanhoof, 2015, for a review), three concerns must be considered in interpreting and using the results.

First, as Penninckx and Vanhoof (2015) concluded, in each of the reviewed studies, there is an emphasis on the negative emotional effects of a school inspection (anxiety and anger), while only a minority of studies mention emotions of satisfaction, relief,

Table 1. Conceptual framework of the current study: cognitive responses to feedback.

Concept	Definition	Exemplary overview of findings from earlier research
<i>Source credibility</i>		
Expertise (knowledge)	Expertise refers to the degree to which an inspector is perceived as capable of making accurate assertions.	When a feedback source is perceived as knowledgeable in an area or topic, individuals are more likely to accept his or her feedback. In the school inspection context, teachers are often reluctant to accept feedback from an inspector with a different academic background (Dean, 1995; Quintelier et al., 2018).
Trustworthiness	Trustworthiness represents the degree to which a teacher trusts an inspector's intentions and motives, free from biasing factors, at the time of feedback (adapted from Steelman & Rutkowski, 2004).	When inspectors are perceived as professional, collegial, and nonthreatening, teachers are more likely to accept negative inspection feedback (e.g., Erdem & Yaprak, 2013; Kelchtermans, 2007; McNamara & O'Hara, 2006). A positive relationship between school inspectors and teachers is assumed to increase feedback acceptance as a precursor to further improvement (Ehren & Visscher, 2008; Kogan & Maden 1999).
<i>Organisational justice</i>		
Procedural justice	Procedural justice relates to the perceived fairness of the inspection process in which information was gathered to determine the outcomes (adapted from Colquitt, 2001).	Efforts to increase transparency strengthen schools' satisfaction with inspections (Wilcox & Gray, 1996). Although evidence remains rather limited, teachers are more likely to accept inspection feedback that is provided by inspectors who set clear expectations regarding educational quality and who are willing to engage in a professional dialogue (Gustafsson et al., 2015; Thomas et al., 2000).
Distributive justice	Distributive justice is defined as the perceived fairness of the inspection outcome.	The validity and reliability of the inspection report are fundamental cornerstones for teachers, as they tend to reject negative feedback more easily when they consider it unfair (Kelchtermans, 2007). When teachers are aware of window dressing activities in schools with positive inspection outcomes, they report feelings of injustice and are less willing to accept negative inspection outcomes (Quintelier et al., 2018).
<i>Characteristics of feedback content</i>		
Feedback constructiveness	Feedback constructiveness refers to the extent to which inspection feedback is perceived as elaborate and constructive.	Constructive criticism, feedback that includes feed forward (e.g., improvement suggestions for remedying poor performance), occasions reactions that are less negative than the reactions engendered by destructive criticism (Ehren & Visscher, 2008; Hattie & Timperley, 2007). Despite teachers' preference for constructive, practical feedback, many inspectorates are not allowed to give improvement suggestions to schools and teachers (Penninckx et al., 2016).
Feedback clarity	Feedback clarity refers to attempts to explicate feedback, allowing teachers to construct their own understanding of it.	Research emphasises the importance of understandable feedback (Crommelinck & Anseel, 2013). Although evidence in inspection research remains rather limited, vague descriptions of problematic shortcomings can leave feedback recipients poorly informed about the current situation and can promote feedback rejection (Audia & Locke, 2003).

(Continued)

Table 1. Continued.

Concept	Definition	Exemplary overview of findings from earlier research
Feedback relevance	Feedback relevance represents teachers' perceptions of information significance.	Teachers accept inspection feedback more easily and are more likely to change their behaviour when the feedback content is relevant to them and consistent with their goals and expectations (Dobbelaer et al., 2017; Ehren & Visscher, 2008).

euphoria, and pride among teachers (McCrone et al., 2007; Ofsted, 2007). This raises the questions of whether school inspections elicit emotions of joy and happiness and whether the research community has neglected to report these emotions (Penninckx & Vanhoof, 2015). As an answer to the low visibility of positive emotions in inspection research, a recent study (Quintelier et al., 2019) examined the presence of teachers' emotions regarding inspection visits and found that teachers reported joy, followed by surprise, as their most frequently experienced emotion regarding the inspection outcome. Anger and sadness were seldom observed (Quintelier et al., 2019).

Second, stress and anxiety are the most frequently reported emotional side effects of a school inspection. Research evidence has shown that the main sources of the high levels of teacher and headteacher stress include the notification period (Brimblecombe et al., 1995), classroom observation (e.g., MacBeath, 2006; Varnava & Koutsoulis, 2006; Wilcox & Gray, 1996), and (consequences of) a negative inspection outcome (e.g., Gärtner et al., 2009; Hopkins et al., 2016). Researchers' approach to measuring teachers' stress levels and how they are reported as emotional effects may result in a limited and oversimplified view of the experienced emotions. After all, findings from previous research have indicated that the experience of stress is often associated with negative emotions, such as depression, anxiety, and anger (Folkman, 2008; Lazarus, 2001). Therefore, this approach neglects the underlying affective responses that teachers experience to specific situations and events (Lazarus, 2001).

Third, while several authors have demonstrated the influence of the inspector's credibility and the inspection outcome on teachers' emotions (e.g., McNamara & O'Hara, 2006; Thomas et al., 2000), there is currently limited evidence revealing the extent to which these affective responses to feedback influence teachers' feedback acceptance. These examples stress the need for more detailed investigations of teachers' emotions and of the interplay between emotions and cognition in school inspection contexts.

Feedback acceptance

According to the feedback process model of Ilgen et al. (1979), an individual's reaction to feedback depends mostly on feedback acceptance. In this study, we define feedback acceptance as "perceptions about the accuracy of the inspection feedback received" (based on Anseel & Lievens, 2009). When the feedback is deemed an accurate representation of the individual's performance, they will be more likely to reply to the feedback (Anseel & Lievens, 2006; Ilgen et al., 1979).

Most inspectorates rely on positive relationships between inspectors and schools (e.g., through joint observations of lessons in schools, personal invitations to respond to the

inspection report, and feedback conferences with the school staff) to increase schools' acceptance of standards and feedback (Ehren et al., 2013). Considerable ambiguity remains, however, with regard to the assumption that feedback acceptance leads to school improvement. Previous research in the field of school inspection has reported that the extent to which inspection feedback is accepted influences the extent to which schools and teachers act upon it (Chapman, 2002; Gustafsson & Myrberg, 2011; McCrone et al., 2007), although feedback acceptance alone does not necessarily lead to quality improvement (Ehren et al., 2015). The transfer of inspection feedback to actions that enhance school improvement depends largely on the conditions and the culture of the different accountability systems (Ehren et al., 2015). Altrichter and Kemethofer (2015) found evidence that the acceptance of feedback fostered the improvement of self-evaluation practices in schools in Austria and Sweden but not in England. These examples illustrate that it is essential to assess the implications of school inspections across diverse contexts.

The current study

The results of our literature review suggest that both cognitive and affective responses to feedback seem to be essential for altering teachers' attitudes, perceptions, and behaviour. In addition to theory development, understanding how individuals receive and react to feedback can not only enhance its acceptance but also contribute to quality improvement in schools.

The main purpose of this study was to identify determinants of the acceptance of school inspection feedback at the teacher level. On the basis of a previous educational study (Quintelier et al., 2019), we included three primary categories of teachers' affective responses – joy, anger, and sadness – as possible predictors of teachers' feedback acceptance. In turn, we studied how these affective responses were influenced by different cognitive responses: inspectors' expertise, inspectors' trustworthiness, procedural justice, distributive justice, feedback constructiveness, feedback clarity, and feedback relevance. Thus, we hypothesised that teachers' affective responses mediate the relationship between teachers' cognitive responses and feedback acceptance. An overview of our research model is provided in Figure 1.

The following research questions (RQ) were posed:

- (1) How are teachers' affective responses related to their cognitive responses in the context of a school inspection?
- (2) Do affective responses mediate the relationship between teachers' cognitive responses and their feedback acceptance?

Methods

This article reports on a survey of teachers' perceptions regarding the above-mentioned aspects. Using path analysis, we tested the existence and strength of the relationships presented in the theoretical framework. Since this study was conducted in the Flemish primary education sector, we first provide an overview of the Flemish school inspection procedure.

Research context

In Flanders, every school is inspected once every 6 years; this constitutes the sole accountability measure for schools. Unlike the education system in many other countries, the Flemish education system has no central exams or national student tests (OECD, 2013). The Flemish inspection system is generally perceived as a relatively low-stakes inspection context (van Bruggen, 2010). An inspection generates a judgement on the school, which determines whether 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, resulting in the initiation of the withdrawal procedure of a school's recognition unless the school devises an improvement plan and obtains assistance from an external agency. To support quality improvement, suggestions for improvement are also addressed (Vlaams Ministerie van Onderwijs en Vorming, 2016).

Sample

The study sample included every Flemish primary school that was inspected between January and November 2018. Every school leader of these 247 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 positions in these schools. Data from a total of 80 schools were retained in this study, encompassing 687 teachers. With regard to the inspection outcomes, only schools who received a favourable opinion were willing to participate. This is the case with the vast majority of Flemish schools as only 6% of the inspected primary schools received a negative inspection outcome in 2018 (Onderwijsinspectie, 2019).

Of those who participated in the survey, 33.0% of the respondents were from pre-schools, and 61.4% worked in primary schools. A total of 5.6% worked as preschool and primary teachers. The mean age of the respondents was 40 years old, and the age range spanned from 21 to 61 years of age. The mean of respondents' teaching experience at their current school was 14.3 years (experience range: 1–39 years of experience), while the respondents' mean overall teaching experience was 17.7 years. In this sample, 84.8% of the respondents were employed full-time as teachers; 15.24% of the respondents were employed part-time. Further, 87.5% of those who participated in the study were women, whereas only 12.5% were men. These figures indicate a relatively representative sample of the target population (Vlaamse Overheid, 2018).

The participants signed an informed consent form that stated the purpose and method of the study and the participants' rights. The study was approved by the ethics committee of the University of Antwerp.

Instruments

We collected data using self-report questionnaires. All items were in Dutch. Although some of the scales were adapted from existing instruments, the new context urged us to examine the psychometric qualities for this study.

To ensure the content validity of the questionnaire, we examined the extent to which the theoretical framework regarding individuals' feedback acceptance in organisational psychology and school inspection research was sufficiently elaborated upon in the survey (Cohen et al., 2011; Taherdoost, 2016). Therefore, a pilot version of the questionnaire was handed to four content experts (educational researchers in the organisational psychology and school inspection research). The feedback of the experts was implemented in a new questionnaire. This preliminary version of the questionnaire was then discussed with three teachers working at a recently inspected primary school (this school was excluded from further participation) to examine the difficulty level of the questionnaire and to understand whether the cognitive processes that the respondents were going through were in line with what the questionnaire intended to measure, indicating high content validity. The feedback gained from these discussions led to adaptations to the final questionnaire.

We tested the construct validity of the scales by conducting a confirmatory factor analysis (CFA) using software package lavaan in R (Rosseel, 2012). The fit indices that were taken into account to evaluate the validity of the instrument were the comparative fit index (CFI), the Tucker–Lewis index (TLI), and the root-mean-square error of approximation (RMSEA). Hu and Bentler (1999) cut-off values were used as indications of a strong 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 standardised root-mean-square residual (SRMR) values between 0.10 and 0.08 or below. We imputed missing data using the full information maximum likelihood method (FIML), as this technique performs well compared to other techniques for handling missing data (Enders & Bandalos, 2001). The models were refined based on modification indices. We used the factor scores created through CFA in the subsequent analyses (see the data analysis section). An overview of the scales, the item examples, and Cronbach's alpha is presented in Table 2.

Cognitive responses

School inspector credibility was measured using a 10-item bipolar scale, and each item was provided with a 7-step continuum for response: expertise and trustworthiness. This approach is consistent with earlier studies' use of bipolar scales to measure source credibility (e.g., McCroskey & Teven, 1999). CFA revealed that, after the error-covariance between two items for expertise and between two items for trust was incorporated, the fit of the instrument was adequate (CFI = 0.968; TLI = 0.956; RMSEA = 0.078).

We measured organisational justice using a 7-point Likert scale (1 = *entirely disagree* to 7 = *entirely agree*). CFA indicated a good fit (CFI = 0.990; TLI = 0.986; RMSEA = 0.053).

We measured the characteristics of school inspection feedback using a 9-item bipolar scale (7-step continuum for response): feedback constructiveness (3 items), feedback clarity (3 items), and feedback relevance (3 items). CFA revealed a satisfactory fit (CFI = 0.996; TLI = 0.953; RMSEA = 0.066).

Teachers' affective responses

Teachers' affective responses to inspection feedback were measured using a scale where respondents were asked to describe the presence and intensity of emotions with regard to the inspection feedback they had received at the end of the inspection visit. On the basis of previous school inspection research and in line with Parrott's classification (2001), we

Table 2. Psychometric characteristics of the different scales.

	Number of items	Min	Max	<i>M</i>	<i>SD</i>	Cronbach's alpha
School inspector credibility						
Expertise	5	2.40	7.00	6.31	0.71	0.88
<i>In general, the inspector was unintelligent-intelligent</i>						
Trustworthiness	5	1.40	7.00	6.10	0.96	0.87
<i>In general, the inspector was unreliable-reliable</i>						
Organisational justice						
Procedural justice	4	2.00	7.00	6.23	0.77	0.87
<i>I believe that the inspection process at our school progressed fairly</i>						
Distributive justice	4	1.00	7.00	6.11	1.00	0.89
<i>The final inspection outcome reflects the school's efforts</i>						
Feedback characteristics						
Feedback constructiveness	3	1.00	7.00	5.69	1.08	0.89
<i>In general, the inspection feedback was reprimanding-constructive</i>						
Feedback clarity	3	1.33	7.00	5.19	1.18	0.70
<i>In general, the inspection feedback was vague-clear</i>						
Feedback relevance	3	2.33	7.00	5.80	0.92	0.78
<i>In general, the inspection feedback was irrelevant to me-relevant to me</i>						
Teachers' affective responses						
Joy	3	1.00	5.00	4.05	1.02	0.88
Anger	3	1.00	5.00	1.19	0.53	0.80
Sadness	3	1.00	4.67	1.07	0.33	0.74
Teachers' acceptance of inspection feedback						
Feedback acceptance	4	1.00	7.00	5.98	0.91	0.78
<i>I generally find the feedback from the inspection accurate</i>						

used a 3-item scale to measure the primary emotion categories joy (satisfaction, relief, and pride), anger (anger, frustration, and annoyance), and sadness (hurt, humiliation, and dejection; see Quintelier et al., 2019). Respondents were asked to rate the extent to which they had felt each of the above-mentioned emotions on 5-point scales (1 = *not at all* to 5 = *to a very great extent*). CFA revealed that the fit of the instrument was adequate (CFI = 0.977; TLI = 0.965; RMSEA = 0.069).

Feedback acceptance

We measured the teachers' acceptance of inspection feedback using a 4-item scale adapted and translated from Tonidandel et al. (2002). Responses were made on a 7-point Likert scale (1 = *entirely disagree* to 7 = *entirely agree*). CFA revealed that the fit of the instrument was satisfactory (CFI = 0.996; TLI = 0.986; RMSEA = 0.053).

Data analysis

First, we calculated the descriptive statistics and correlations for all variables. In order to further discover the data, we calculated intraclass correlations (ICC) as well as the variances between and within schools. ICC of the scales ranged from 0.11 to 0.46. To answer our research questions, we analysed the data by means of structural equation modelling (SEM), using software package lavaan in R (Rosseel, 2012). This technique allowed for modelling the direct and indirect relationships between the constructs in this study. On the basis of our theoretical framework, we built a path model with the three affective

responses as mediators between teachers' cognitive responses and teachers' feedback acceptance, as demonstrated in our research model (see [Figure 1](#)).

Given the fact that we were analysing teachers within schools, the nested structure of the data was taken into account by the MLR estimator. This estimator considers the non-independence of observations and also possible non-normality of the data (Stapleton et al., 2016). Modification indices were examined to further optimise the model if the initial model did not fit the data.

Results

Descriptive results

The descriptive statistics of all the variables in the theoretical model are listed in [Table 2](#). The averages of 6.31 for expertise and 6.10 for trustworthiness imply that teachers largely responded positively to the inspector's credibility in the context of a school inspection. Further, the results for procedural justice ($M = 6.23$) indicate that teachers deemed the inspection process fair and transparent. In addition, the average of 6.11 for distributive justice suggests that the teachers responded positively to the questions related to the perceived fairness of the final inspection outcome. The teachers responded with moderate positivity regarding the extent to which they perceived the feedback as constructive ($M = 5.69$), clear ($M = 5.19$), and relevant ($M = 5.80$). The standard deviations illustrate that the differences between teachers were relatively high (SD between 0.92 and 1.18). With regard to teachers' affective responses, we found that the mean score of joy ($M = 4.05$) was higher than the mean scores for anger and sadness ($M = 1.19$ and $M = 1.07$, respectively). Finally, the participating teachers exhibited, on average, a moderately strong response to feedback acceptance ($M = 5.98$). Analysis at item level reveals that teachers generally agreed with the findings of the inspectors ($M = 5.95$) and found the inspection feedback accurate ($M = 5.70$).

Explanatory results

We tested our theoretical model ([Figure 1](#)) by means of SEM. Given that all three fit indices for the initial model suggested a less than adequate fit ($CFI = 0.96$; $TLI = 0.68$; $RMSEA = 0.24$; $SRMR = 0.12$), we can conclude that this model did not fit the data. Examination of the modification indices suggested that the model could be improved by adding paths to the model. The next phase in the specification of our model comprised the inclusion of a direct path from distributive justice to feedback acceptance. This resulted in better, yet still insufficient, fit indices. After we included a direct path from feedback relevance to feedback acceptance in the model, the model, as depicted in [Figure 2](#), exhibited satisfactory fit statistics ($CFI = 0.99$; $TLI = 0.97$; $RMSEA = 0.02$; $SRMR = 0.00$). The standardised regression weights and significance levels of our model are depicted in [Figure 2](#).

Teachers' cognitive responses as antecedents of affective responses

Regarding teachers' cognitive responses, the path model shows that perceptions of the inspectors' trustworthiness, distributive justice, and feedback relevance are strongly associated with joy, anger, and sadness. Interestingly, the path model revealed no

statistically significant relationships between perceptions of the inspectors' expertise, procedural justice, feedback constructiveness, and teachers' emotions.

We found that positive perceptions of the inspectors' trustworthiness are negatively related to teachers' experiences of anger ($\beta = -.365, p < .05$) and sadness ($\beta = -.477, p < .05$). In other words, the more teachers trust school inspectors' motives, the less anger and sadness will be reported. Teachers' justice perceptions regarding the inspection outcome (distributive justice) are positively associated with teachers' experiences of joy ($\beta = .446, p < .0001$) and negatively related to teachers' experiences of anger ($\beta = -.299, p < .001$) and sadness ($\beta = -.199, p < .05$). With regard to the feedback characteristics, we found that feedback clarity and feedback relevance are statistically significantly related to teachers' experiences of joy, anger, and sadness. Perceptions of clear feedback are, to a lesser extent, associated with teachers experiencing higher levels of joy ($\beta = .174, p < .05$). Finally, the path model underscores the importance of feedback relevance in teachers' experiences of anger ($\beta = .296, p < .05$) and sadness ($\beta = .395, p < .05$).

Teachers' affective responses as mediators of the relationship between cognitive responses and feedback acceptance

Among the paths from teachers' affective responses to teachers' feedback acceptance, only the path from anger to feedback acceptance is statistically significant ($\beta = -.174, p < .01$). The relationship between teachers' cognitive responses (inspectors' trustworthiness, distributive justice, and feedback relevance) and feedback acceptance is mediated by teachers' experience of anger, albeit to a very small extent. In other words, when teachers have negative perceptions regarding an inspector's trustworthiness and distributive justice, they are more likely to report anger and are less likely to accept the feedback. This is also the case for inspection feedback that is perceived as relevant. There are no statistically significant relationships between joy and feedback acceptance or between sadness and feedback acceptance.

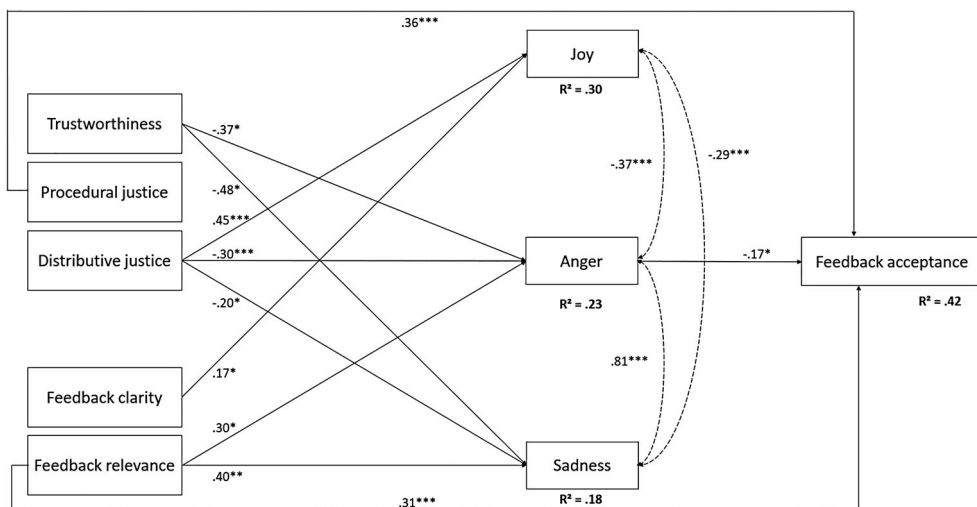


Figure 2. Path model with standardised parameter estimates.

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

Direct influences of teachers' cognitive responses on feedback acceptance

Evidence was found to substantiate the importance of teachers' positive perceptions regarding organisational justice and their relationship with feedback acceptance. Perceptions of procedural justice are directly associated with teachers' acceptance of school inspection feedback (respectively, $\beta = .357$, $p < .001$). Teachers who believe that the inspection process represented a fair and transparent evaluation report higher scores on feedback acceptance. With regard to feedback relevance, we found that teachers who perceived their inspection feedback as relevant tended to accept the inspection feedback more readily (direct effect $\beta = .306$, $p < .01$; total effect $\beta = .259$).

We uncovered no direct significant relationships between the remaining cognitive responses and teachers' acceptance of feedback. The total amount of explained variance for teachers' feedback acceptance was 44%. The explained variance for the affective responses joy, anger, and sadness was 31%, 23%, and 18%, respectively.

Conclusion and discussion

Although educational stakeholders generally assume that inspection feedback contributes to school improvement through the mechanism of feedback acceptance, feedback research in general suggests that recipients' cognitive and affective responses are essential in the feedback acceptance process. Many studies in inspection research, however, failed to consider the relationship between feedback acceptance and teachers' cognitive and affective responses. To contribute to the bridging of this research gap, we investigated not only the interplay between teachers' cognitive and affective responses but also whether emotions mediate the relationship between cognitive responses and feedback acceptance. We conducted a survey study on 687 teachers from 80 primary schools that had been inspected 8 weeks before the survey.

Our descriptive results indicate that the majority of Flemish teachers take a positive stance towards school inspectors and the inspection process, and that the Flemish educational context is characterised by high acceptance ratings of the inspection feedback received. This is reflected not only in the high mean scores for teachers' perceptions of the inspectors' credibility and organisational justice but also in the high mean scores for teachers' experiences of joy. In contrast to earlier findings (see Penninckx & Vanhoof, 2015), findings revealed that teachers reported less anger and sadness.

Notably, although teachers are satisfied with the inspection outcome, this does not mean they are more likely to accept the inspection feedback, as indicated by the finding that teachers' emotions of joy are not directly related to feedback acceptance. This is also the case for sadness. Only teachers' anger seems directly related to feedback acceptance, and this is only to a very small extent.

Regarding the first research question, we found that the more positive a teacher perceives an inspector's trustworthiness and distributive justice, the less they will report emotions of anger and sadness. From this finding, we could infer that trustworthiness and distributive justice are antecedents of teachers' emotions regarding a school inspection. The importance of organisational justice is also demonstrated in its direct relationship with feedback acceptance. Regardless of the emotions experienced, teachers who report higher levels of procedural justice are more likely to perceive the inspection feedback as accurate than teachers who report lower levels of justice. This is in line with the research of

Leung et al. (2001), who found that feedback acceptance increased when recipients perceived feedback as correct. The importance of both organisational justice and trustworthiness regarding feedback acceptance in the current study was discussed earlier by Colquitt and Rodell (2011), who uncovered a connection between the two variables that helps to explain our results. Their results indicate that employees associate their supervisors' adherence to justice with higher levels of trustworthiness. From this perspective, in addition to the ability of inspectors to provide fair feedback, it must be emphasised that the inspection process and the inspector's decision making and related behaviours should also be as transparent as possible and should ideally generate perceptions of trustworthiness. In this sense, the significant relationship between feedback clarity and higher levels of joy that is reflected in our data can also be associated with the need for clear expectations and transparency that has been highlighted in previous research (Gustafsson et al., 2015). Inspection feedback can allow inspectors to maintain communication with teaching staff and inform them about the official expectations and norms (Gärtner et al., 2014).

Our findings confirm that feedback relevance is a critical success factor for feedback acceptance too (Ehren & Visscher, 2008). Our results demonstrate that inspection feedback that is perceived to be relevant will likely lead to higher levels of feedback acceptance among teachers but will also engender higher levels of anger and sadness. The importance of feedback relevance as an antecedent for anger and sadness can be explained by appraisal theory, which assumes that affective responses occur only when an event is experienced as being relevant (Roseman & Smith, 2001; Smith & Lazarus, 1990). As observed, not all cognitive responses are associated with the experience of emotions of joy, anger, and sadness. This indicates that some cognitive responses are irrelevant to some emotions or that some cognitive responses are only associated with emotions in very specific situations (Scherer, 2005).

Of course, our study is not without its limitations. First, from an international perspective, the Flemish inspection system, which is characterised by little to no personal consequences, is a relatively low-stakes accountability system for Flemish teachers (OECD, 2013; van Bruggen, 2010); findings associated with the Flemish inspection system can therefore not be uncritically generalised to other educational systems. In systems where schools and teachers see inspectors as being primarily concerned with accountability rather than development, other antecedents and outcomes may be found. Future research should therefore compare and integrate findings from low-stakes and high-stakes educational evaluation environments (Altrichter & Kemethofer, 2015; Ehren et al., 2015). Second, we relied on self-reported data gathered on a single survey questionnaire, making the data susceptible to method bias (Cohen et al., 2011). The use of a cross-sectional design precludes causal inferences because this design does not take into account the fact that the connection between cause and effect takes place in time. The relationships in our path model must therefore be interpreted as relationships rather than causal links. Longitudinal research of emotions could enhance the understanding of how stable teachers' emotions and perceptions are and the extent to which teachers can regulate or adjust these emotions and perceptions over time. Triangulating data across different and complementary methods in future research will maximise validity and reliability. Lastly, only the relationships between cognitive responses, affective responses, and feedback acceptance were taken into account in this study. Feedback acceptance is no synonym for actual school improvement. Factors related to teachers' personality and the school environment constitute topics for further research (Ilgen et al., 1979).

Our results have important practical implications for policymakers and school inspectors. In order to enhance feedback acceptance, school inspectors should deliver feedback from a perspective of improvement and professional development rather than one of accountability.

As feedback acceptance depends largely on teachers' perceptions of organisational justice and perceptions of trustworthiness, new and established school inspectors should be trained to adhere to justice principles. Previous research has indicated that an inspection can exert a greater developmental effect on a school if teachers consider the inspection process and outcome high in quality (positive perceptions of the inspector's behaviour, psychometric quality, and transparency). Transparency of the inspection process and transparency of the criteria used for determining the inspection judgement are therefore indispensable (Penninckx et al., 2016). In addition, for inspection feedback to have an impact on decision making, it must be presented clearly and perceived as relevant. Inspection feedback should include information about teachers' responsibilities, required skills, and goals. We also advocate the use of "feed-forward" strategies, such as reflection discussions with teachers and school management, a feature of the current Flemish inspection system. These development-oriented dialogues, where teachers reflect on success factors and potential actions and targets for improvement under the guidance of the inspection team, can foster teacher ownership and can provide the desire and capacity in schools to learn and improve together.

Disclosure statement

No potential conflict of interest was reported by the authors.

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