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How contextual factors influence teachers' pedagogical practices

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ABSTRACT

Background: Primary teachers' pedagogical practices (TPP) are strongly focused on supporting pupils' psychological needs, creating a safe learning climate, and encouraging pupils' developmental and learning processes. As a core motivation for teachers is the desire to interact constructively with children, pedagogical practices can be understood as central to teachers' work. A familiar problem in many international contexts is that TPP can come under pressure, typically as the result of interplay between personal and contextual factors. However, which contextual factors influence TPP, and how they do so, remains unclear.

Purpose: In this study, we aimed to better understand how context influences primary school teachers' pedagogical practices, within the setting of primary education in the Netherlands. We were particularly interested in which contextual factors were perceived as important and how they influenced TPP.

Methods: Data were collected through open questions in a survey among 215 primary school teachers in the northern part of the Netherlands. Focus group interviews were then held with 11 of the survey participants. The data were analysed qualitatively, using a framework approach with five stages of familiarisation: identifying themes, indexing, charting, and mapping and interpretation.

Findings: The analysis identified nine contextual factors that, according to participants, both positively and negatively affected TPP. The most frequently mentioned threats to TPP were educational accountability and standards, and organisation of work in the classroom, whilst school improvement and pupils' educational needs were regarded as the most important stimulating factors. We clustered the factors into four patterns which reflected the way that teachers appraised them: organisation of daily classroom practices, school culture, educational improvement, and contribution to pupils' development.

Conclusions: According to the teachers, the interplay between TPP and the context can cause pressure, frustration, and feelings of incompetence because there is insufficient time for achieving pedagogical goals. Our study draws attention to the complex challenges that teachers face in terms of balancing pedagogical practices and other educational tasks, and draws out implications for policy and practice.

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Introduction

As a core motivation for teachers is the desire to interact constructively with children, pedagogical practices – such as supporting pupils' psychological needs, creating a safe learning climate, and encouraging pupils' developmental and learning processes – can be understood as central to teachers' work. In the Netherlands, as elsewhere, pedagogical practices in primary schools can often come under pressure: however, such tensions tend to be overlooked (Biesta 2010; Gemmink et al. 2020) in comparison with research into teachers' increasing workloads and stress more generally (Ballet and Kelchtermans 2008; Ballet and Kelchtermans 2009; Bodenheimer and Shuster 2020). This study explores how teachers' work context influences perceived pressure regarding teachers' pedagogical practices (TPP). For example, teachers might be required to spend more time measuring pupils' learning outcomes, leaving less opportunity to prepare and conduct activities that stimulate pupils' personal development and improve interaction processes in the classroom. In line with Lazarus's (2006) appraisal theory, teachers' perceived pressure can be considered the result of interplay between the person and the context, although precisely which factors influence TPP, and how, remains unclear.

In order to situate our inquiry into TPP, it is first necessary to explain how we defined our terms. We understood the term 'practices' to mean teachers' verbal and nonverbal behaviours during interactions with their pupils (Evertson and Weinstein 2006). Further, we conceptualised teachers' *pedagogical* practices as distinct and differentiated from teachers' *didactical* practices. Generally, both pedagogical and didactical practices are assumed to be crucial to effective teaching, closely linked to each other and partly overlapping (Shulman 1987). However, conceptually, the differences, definitions and purposes of pedagogy and didactics are not always that explicit (Bromme 1991). For example, in English, the term 'pedagogical practices' is often used in a narrow sense, referring to the didactics of teaching. Specifically, we define TPP as teachers' verbal and nonverbal behaviour during teacher–pupil interactions, designed to achieve outcomes in three main domains: stimulating pupils' social, emotional and moral development; creating a safe learning climate; and supporting pupils' psychological needs for learning (Beijaard, Verloop, and Vermunt 2000; Olson 2003). It therefore follows that, in their pedagogical practices, teachers' prime focus is on aspects that are important for pupils' wellbeing, learning conditions and moral-oriented goals. We understand didactical practices, on the other hand, as referring to behaviours involved in 'models of teaching, which prescribe how the planning, executing and evaluating of lessons should be done' (Beijaard, Verloop, and Vermunt 2000, 752). Here, teachers concentrate on relevant aspects of teaching processes and transmission/qualification-oriented goals.

The quality of TPP is crucial for both pupils and teachers. In the instructional triangle (i.e. teacher, pupil and subject), the quality of teaching and learning depends on the quality of teacher–pupil interactions in the classroom (Lampert 1985; Lortie 1975). In primary education in particular, the quality of interaction relies predominantly on teachers' initiatives in building relations and facilitating optimal learning conditions. Therefore, the quality of TPP may play an especially important role for primary school pupils: creating a safe learning climate and focusing on their psychological needs are crucial for young children's development. Indeed, not meeting these psychological needs could influence pupils' wellbeing and learning processes (Deci and Ryan 2000; Jennings and Diprete 2010). It follows, then, that

primary school teachers might feel negatively affected if they perceive that their pedagogical practices are under strain in some way. Their central motivation to teach, namely, a desire to interact with children (Fokkens-Bruinsma and Canrinus 2014; OECD (Organisation for Economic Co-operation and Development) 2005) might decrease. This can influence their effectiveness, job satisfaction and personal wellbeing (Marshik, Ashton, and Algina 2017; Scheerens 2016).

Previous research has explored why teachers experience pressure (Day et al. 2007) and the many contextual factors that influence teachers' practices in general (Ballet and Kelchtermans 2008; Leithwood, Harris, and Hopkins 2008). We found two theories to be particularly helpful in the context of our study. First, Lazarus' appraisal theory (Lazarus 2006; Lazarus and Folkman 1984) gives insight into the processes that occur in the interplay between teachers' pedagogical practices and influencing factors. Second, Bronfenbrenner's (1979) ecological model can help us to understand which contextual factors derive from multiple levels, such as national educational reforms, school improvements and diverse classroom aspects. In the section below, we contextualise our study by setting out the theoretical framework that underpinned the approach that we adopted in our investigation of how context influences primary school teachers' pedagogical practices.

Background

Interplay of factors that influence TPP

According to appraisal theory (Lazarus 2006; Lazarus and Folkman 1984), stress and emotions result from the interplay between a person (teacher) and external demands (contextual factors). That is, a contextual factor (e.g. pupils' pedagogical needs in the classroom) evokes an interpretation by the teacher (e.g. 'my pedagogical practice is relevant, but it is difficult to implement, due to different needs') and then a reaction (e.g. feeling dissatisfied). The interplay between the person and the context prompts a process of primary appraisal, which produces the person's judgement of an event as stimulating (positive, controllable, challenging), threatening (negative, experiencing pressure) or irrelevant, depending on that person's beliefs about what may be important (goals) (Dinham et al. 2017; Johnson et al. 2014; Lazarus 2006).

More broadly, appraisal theory predicts that the importance of various goals is manifest in the reactions people have to influential factors (e.g. van Veen and Slegers 2009). Because pedagogical goals tend to be important to teachers' practices (Hamre et al. 2014; OECD (Organisation for Economic Co-operation and Development) 2005), we anticipate that teachers appraise situations more negatively if these goals are at stake. If, for example, a teacher has the strong belief that creating a safe learning climate is required for pupils' learning processes, but the school leader requires more attention paid, for instance, to teaching mathematical multiplication facts (external demand), the teacher is likely to appraise the situation negatively. Conversely, if the school leader asks the same teacher to take on the responsibility of presenting their successful approach to group work in a future team meeting, the teacher will probably appraise the situation positively.

Contextual factors in a multi-layered system

Contextual influences on teachers' practices in general, and TPP in particular, stems from a multi-layered system. Dutch primary school teachers might share the same national educational policy, but they encounter different, school-specific structures and cultures, and they adopt unique classroom practices, which creates diverse contextual influences. The ecological model proposed by Bronfenbrenner (1979) provides a useful framework for analysing this diversity; it assumes interplay of multiple systems (ecological) that surround the individual (e.g. teacher) and attempts to understand their varied effects on the individual's behaviour (e.g. TPP). The range of influential systems includes micro (classroom aspects), meso (school's structural and cultural factors), exo (indirect environments, such as parent's workplace, neighbourhood), macro (national government, educational policy), and chrono (environmental events, transitions, such as socio-historical events) systems. The ecological element in Bronfenbrenner's model also emphasises the complex interplay of contextual factors, such that TPP interacts with nested series of systems. Thus, factors in one system always influence those in adjacent systems. A parallel view, from the teachers' perspective, would describe systems that range from the most immediate (classroom as micro system) to the broadest (educational policy as macro system), all of which influence adjacent systems and teachers' practices. To consider more deeply how contextual factors may influence TPP in the Dutch setting of our study, we focus on the systems that interact most closely with teachers' work context: namely, the micro (classroom) and meso (school environment). Then, reflecting the ecological nature of the model, we also include the macro system, to acknowledge its direct influence on the meso system.

The macro system consists of changing cultural, social and political elements. In the Netherlands, two major reforms in Dutch educational policy have been of particular note in the recent past: data-based decision-making (Ingram, Louis, and Schroeder 2004; Dutch Education Council 2006; Schildkamp 2019) and inclusive education policies (Ministry of Education, Culture and Science 2014; Dutch Education Council 2011; UNESCO 2017). These reforms have largely set the agenda for the educational development of primary schools, and are likely to influence TPP. Data-based decision-making involves 'teachers using standardised tests and other sources to make decisions about school and classroom practice' (Ingram, Louis, and Schroeder 2004, 1258), in a systematic effort to maximise the academic achievements of all pupils. The explicit focus is on subject matter and the evaluation of pupils' learning outcomes (Hamilton et al. 2009), reflecting a cognitive aspect of learning, and it has mainly focussed on improving learning outcomes for mathematics and Dutch language courses. The application of data-based decision-making affects educational policies, quality assurance and accountability at the school level, which, in turn, influence teachers' daily practices (Blok, Ledoux, and Roeleveld 2015). However, the research cites several potential risk factors related to the application of data-based decision-making, including insufficient time, over-emphasis on test results (and under-use of teachers' professional judgement), and an accountability culture. All three risk factors could influence TPP because they stem from teachers' didactical practices to stimulate pupils' cognitive learning outcomes, rather than from their pedagogical practices. According to Ballet and Kelchtermans (2008), as teachers perceive an increased workload from the mandatory tasks of measuring and administering learning outcomes, they experience feelings of decreased professional space and autonomy.

Inclusive education policies (UNESCO 2017) require schools to ensure that all pupils receive education appropriate for their skills, qualities and potential, especially if they need extra support. Since their implementation in the Dutch education system, teachers at mainstream schools have been assigned the task of meeting the educational needs of all pupils, including those with special educational needs, and guiding them, to avoid segregation into separate educational systems as far as possible. Although the Dutch system cannot be labelled fully inclusive because it still contains both mainstream and segregated special education, ideally, students are referred to special schools only if it is in the best interest of their own development (Dutch Education Council 2011). Inclusive education policies (macro system) have altered the requirements for school admittance (meso system) and created more heterogeneity in pupils' educational needs (micro system). In some situations, it may be challenging for teachers to meet all pupils' needs (Beltman, Mansfield, and Price 2011; Ledoux and Waslander 2020). For example, sometimes, if teachers have insufficient assistance, they may have to invest more time in providing additional support to meet the diverse didactical and pedagogical needs of their pupils. A recent, large-scale evaluation indicated that inclusive education policies had increased Dutch primary school teachers' workload (Ledoux and Waslander 2020), to the extent that teachers regard it as disruptive to their daily classroom practices.

The mesosystem – here, represented by the school as an organisation – can be described in terms of the structural and cultural factors that influence teachers' practices (Louws et al. 2017; Slegers and Leithwood 2010). Structural factors include how the school and the work in the classroom are organised, in terms of teaching schedules, class size, space and available resources. Cultural factors are the norms, values, beliefs and traditions that have built up over time and that guide the activities adopted by staff and students (Peterson and Deal 1998). Relevant cultural factors might include school leadership, organisational and professional development and collaboration, which can influence teachers' pedagogical practices both positively and negatively. First, school leadership defines organisational aspects as well as the quality of the education, especially when manifested as transformational leadership (Spillane 2006). School leadership affects various processes at the school level, by strengthening the school's educational vision, providing individual support to teachers, evoking teachers' feelings of attachment to the organisation, and motivating them to reach organisational and personal goals (Geijsel et al. 2001; Leithwood, Harris, and Hopkins 2008). Second, in terms of organisational and professional development, Dutch schools bear the responsibility for school improvements and must report on these efforts to educational boards and the Dutch Inspectorate of Education. When a school seeks to improve through educational developments, it reflects 'All the work that is done systematically to help teachers to do their best to foster student learning' (Knight and Wilcox 1998, 98). Multi-year school plans generally include points of development, priorities and draft budgets. They also cite goals at team level and for teachers' individual professional development, which, in turn, should help teachers enhance their knowledge and skills (Bartlett 2004; Day et al. 2007). Third, collaboration is an important cultural factor: Little (1990) argues that effective collaboration depends on the organisation of tasks, time and resources. When engaged in joint work, undertaken with a sense of shared responsibility for achieving the goals of teaching, individual teachers rely on one another to reach goals. The exchange of resources depends on the quality of the social relationships, which may support or impede the transfer of

knowledge which is necessary for achieving collective goals (Daly et al. 2010). A supportive working context can thus encourage and motivate teachers to ensure the quality of their practices (Day et al. 2007; Geijsel et al. 2001). To collaborate in the school and adapt to school-wide decisions, teachers also need space and autonomy to make their own choices and undertake actions (Eteläpelto et al. 2013).

Teachers work within their unique school context, which influences their pedagogical practices. Notably though whilst some studies remind that structural factors (e.g. administrative support) influence teachers' practices (Beltman, Mansfield, and Price 2011; Ledoux and Waslander 2020), recent literature also argues that it is not necessarily the objective structural factors that support or impede teachers' practices but, rather, the way teachers perceive these elements and their influence in their workplaces (Tynjälä 2012). Therefore, each teacher might perceive each contextual factor, in relation to their pedagogical goals and practices, differently.

In the micro system – i.e. the classroom – teachers continually make decisions, and TPP might be disturbed or strengthened by various elements, such as pupils' behaviour, challenges in relaying subject matter contents or changes to the curriculum. The organisation of work in the classroom and processes that facilitate pupils' learning all depend on teachers' actions (Hattie 2009). Creating an emotionally safe learning climate and supporting pupils' psychological needs are critical and continuous processes that require close involvement (Hamre et al. 2014; Jennings and Diprete 2010). For instance, teachers might regularly have conversations with a group of pupils, or with individual pupils, about their wellbeing, and devote time to practising prosocial behaviour.

Beyond classroom practices, teachers' daily work requires them to engage in group-related tasks (e.g. administration), school-related tasks (e.g. meetings) and individual professional development (e.g. training). Most teachers feel responsible, personally and professionally, for completing all these tasks. Accordingly, they would not be likely to accept changes without giving them thought and, instead, would be likely to seek to engage with school improvement projects (van der Heijden et al. 2018). From this perspective, the coherence between teachers' educational goals and the school's educational strategy tends to influence how teachers experience their pedagogical practices at school (Gemink et al. 2020; Honig and Hatch 2004). Finally, individual professional development might be a pertinent factor in the micro system because it can stimulate and motivate teachers to strengthen their pedagogical practices (Desimone 2009; Hattie 2009).

Purpose of study

Based on our application of the theoretical framework, as discussed above, we predicted that various contextual factors in different systems would influence teachers' practices in general, as would the interplay within and among each system. To gain insights into the positive and negative influences on TPP in particular, we were interested in contextual factors within the systems (Bronfenbrenner 1979). Thus, our first research question asked: *Which contextual factors (in the macro, meso and micro systems) influence TPP?* Furthermore, we expected that TPP might be affected differently, in various situations, by distinct combinations of contextual factors and the way they were appraised by

teachers (Lazarus and Folkman 1984). We were also interested in these underlying processes. Therefore, we also pursued a second research question: *How do contextual factors influence TPP?*

Methods

Ethical considerations

In this study, the principles, criteria and commitments set out in the Netherlands Code of Conduct for Academic Practice (VSNU, 2014) were followed. The teachers received a priori written and oral information about the research aims and procedures. We also provided them with information about the voluntariness and anonymity of their participation. Informed consent was gained from every participant.

Participants

Participants in our survey comprised 215 teachers from primary schools in the northern part of the Netherlands, which consists of both urban and rural areas. In the Netherlands, primary education is compulsory for children from the age of 5–12 years (4-year-old children can also be included). We used convenience sampling (response rate: 74%) and cluster sampling (36%). The majority of the respondents were women (79%), and 54% of the sample had more than 10 years' teaching experience, whereas 25% had less than 5 years. The most well-represented qualification (79%) was a professional Bachelor's degree, and another 20% held a professional Master's degree too. We determined from the survey responses that the participants varied in the pressure they experienced on their pedagogical practices: specifically, 35% of the reported experiencing high pressure on their pedagogical practices, 40% reported experiencing moderate pressure and 25% reported experiencing no or low pressure.

Our focus group interview participants comprised a sample of 11 of the survey respondents from different schools. In this regard, we ensured that the focus group interview participants were representative, in the sense that we included adequate representations of the three groups we had distinguished (i.e. high, moderate and low/no pressure), so that a range of views would be represented. The general characteristics of the focus group teachers differed marginally from the characteristics of teachers in the survey as a whole: specifically, all focus group participants were women, and the average teaching experience was slightly higher.

Data collection

We used a qualitative methodological approach to capture perceptions of TPP (King, N., and C. Horrocks 2010) as a way of exploring the bases for teachers' practices (e.g. Coburn 2004). Over a 4-month period (November 2015 – February 2016), we collected two types of data: responses to open questions in the survey (N = 215) and interview data from focus group interviews (N = 11). In this survey, we investigated TPP by inviting participants to complete a questionnaire focusing on perceptions of TPP in the classroom (Gemmink et al. 2020). One of the open questions asked respondents to describe which contextual

factors affected their pedagogical practices positively (stimulating factors). Another question asked similarly for negative influences (threatening factors). In the focus group interviews, we investigated processes regarding TPP influenced by contextual factors. As explained above, those who participated in the focus group interviews were survey respondents who, collectively, ensured representation of the three groups we had distinguished and were willing to discuss the focal subjects. The focus group interviews were held at a University of Applied Sciences, where the first author works as a teacher educator. The interviews were conducted in Dutch and involved two sessions of approximately 1 hour each, with in total 11 participants (first session 6 participants and second session 5 participants). The conversations were recorded using a dictaphone and fully transcribed verbatim.

Based on the responses to the open questions, we developed an interview protocol that consisted of an introduction and three blocks of sub-questions, each pertaining to the main research question. These questions (translated) included: 'Exactly which pedagogical practices are under pressure?', 'What causes pressure?', 'What stimulates your pedagogical practices, and what hinders or threatens them?' and 'How does this influence your daily pedagogical practices?'. We purposefully formulated the questions broadly, to avoid steering the participants' discussion. However, we started the interview with a discussion of the research definition of TPP. We also shared the relevant aggregate survey findings with them (i.e. as above, the percentage of teachers who had reported experiencing high, moderate and low/no pressure on their pedagogical practices), as a preface to questions including 'Do you recognize these results?', 'Do you perceive/experience tensions in your pedagogical practices?', 'How does this pressure become visible in practice?' and 'How do you deal with it?'. When necessary, interviewers also used prompts and probes.

Data analysis

The data analysis process followed the framework suggested by Ritchie and Spencer (1994), who distinguish five stages: familiarisation, identifying a thematic framework, indexing, charting and mapping, and interpretation. Table 1 provides a description of how our practices and coding corresponded to these stages. The research questions and theoretical framework guided the analysis and helped us to categorise the contextual factors, find associations between them, and seek explanations of their influences on TPP. The open questions from the survey provided the data to address our first research question. The first author and a second coder completed stages 1 to 3: they became familiar with the data, identified the themes of the contextual factors and produced a codebook containing keywords per theme. A specific code was assigned if a participant's response featured a keyword. In order to increase coding reliability, the two researchers discussed difficult cases and coded the answers until they achieved at least 90% agreement. Finally, we counted the positive and negative influences separately. Thus, we could rank the threatening factors and the stimulating factors according to the percentages of how often a factor was mentioned (out of the total number of threatening or stimulating influences). For example, on a total of 192 negative influences, the factor 'inclusive education' was mentioned as a threatening factor 19 times (10%).

Table 1. Stages of the data analysis process.

Stage ¹	Description of stage ¹	Our practices and coding
1. Familiarisation	Becoming familiar with the data and gaining overview.	We immersed ourselves in the data by reading and re-reading the responses, dividing them into what teachers considered to be threatening and stimulating factors, and being alert for recurrent themes and code words.
2. Identifying a thematic framework	Identifying key issues, concepts, and themes and constructing a framework by drawing on research aims and themes arising from the data.	We identified themes for contextual factors in existing literature and linked them to the systems. We looked for clear examples to illustrate the contextual factors (see Table 2).
3. Indexing	Applying the thematic framework systematically to the data.	We formulated keywords for each contextual factor from stage 2. We coded the data using these keywords and assigned a new code if a response did not fit. To address the first research question, we quantified the data (see Table 2).
4. Charting	Rearranging the data according to the themes and constructing main 'charts' that consist of headings and subheadings from the research questions and developed framework.	To address the second research question, based on the combinations of contextual factors previously identified, we identified patterns in the data from the focus group interviews (see Table 3).
5. Mapping and interpretation	Analysing the range and nature of key themes within the charts, mapping and interpreting the data as a whole and searching for patterns and explanations.	We assigned significant quotations to the patterns. To obtain insights into the appraisal processes, we coded external demands, beliefs and consequences of pressure on TPP and thus provided explanation of how contextual factors influence teachers' pedagogical practices.

Note on Table 1: ¹Stages and description are based on Ritchie and Spencer (1994).

The coding of the transcripts from the focus group interview data involved two coders, who undertook stages 4 and 5 and discussed their findings at the end of each stage. From the transcripts, we selected text extracts that contained descriptions of processes that made what teachers considered to be pressure on TPP visible. We then coded the fragments in accordance with the contextual factors that we had uncovered in the survey data. While analysing the transcripts, we noticed that certain patterns frequently occurred, i.e. specific combinations of contextual factors and how teachers appraised them. For example, 'inclusive education' in the macro system was elaborated in the meso system as the 'school's organisational aspects' and became manifest for teachers through an increase in 'pupils' educational needs' in the classroom. Thus, the patterns combined contextual factors that emerged from the analysis. Subsequently, we labelled the text fragments according to the patterns and linked them with significant quotations. Finally, using Lazarus's (2006) appraisal theory, we analysed the quotations by coding external demands, teachers' beliefs (pedagogical goals) and the consequences for TPP, in order to gain insight into the relationship between TPP and contextual factors. To enhance credibility in these stages, three researchers were involved in the analysis. Descriptions of the patterns and illustrative fragments were discussed.

Findings

In the subsections below, we present the main findings from our data analysis. In the first subsection, we show how our analysis helped us to respond to our first research question: *Which contextual factors (in the macro, meso and micro systems) influence TPP?* In

the second subsection, we explain how our analysis allowed us to gain insights into the second research question: *How do contextual factors influence TPP?* Where relevant, translated, anonymised quotations from the open questions and focus group interview data have been included to illustrate and illuminate the findings.

Contextual factors that influence teachers' pedagogical practices

According to our first research question, we aimed to determine which contextual factors (from macro, meso and micro systems) influenced teachers' pedagogical practices, both positively and negatively. Through our analysis of the responses, we coded a total of 192 negative influences and 181 positive influences, and identified nine themes of contextual factors that affect TPP. Table 2 presents these contextual factors, along with examples, as cited by the respondents (divided into 'stimulating' or 'threatening'), and in percentages to indicate how often a factor was mentioned. We

Table 2. Nine contextual factors with examples and percentages.

	Contextual factor	Examples of aspects considered to be threatening (-) and stimulating (+) by the teachers	Percentages ¹
Macro system	1. Educational accountability and standards	- Administrative tasks, compulsory tests, prominent role of Inspectorate of Education, performance pressure, obligatory registration/testing/formats /paperwork + Changing framework of the Inspectorate of Education	28%*
	2. Inclusive education	- Top-down implementation of inclusive education, adapting education to pupils' special educational needs + Increase of inclusivity	1% 10% 1%
Meso system	3. School improvement	- Many developments/innovations at the same time (e.g. 21st century skills, IT), slow educational development + Collective development of new teaching methods, opportunities of IT, changing role of teachers (more coaching)	7% 35%
	4. Social-professional relationships	- Limited social network, negative school culture + Stimulating social network, support from colleagues, (feelings of) sharing with colleagues	2% 11%
	5. School's organisational aspects	- Classes with too many pupils, combination classes, small staff, lack of resources (IT, additional supportive staff) + Facilities at school	16% 1%
Micro system	6. Organization of work in classroom	- High psychological task demands, heavy workload, many (new) tasks + Enjoying classroom work	19% 2%
	7. Pupils' educational needs	- Many different educational needs/extra support needed, feelings of not giving pupils the treatment they need, difficult behaviour + Involvement in pupil's development, pupils' enthusiasm, motivating and challenging pupils' development	10% 20%
	8. Individual professional development	- n/a + Positive developmental opportunities for teachers, challenging work, study/courses, new insights	0% 13%
	9. Professional space and autonomy	- Differences in vision between teacher and school or between colleagues (different values), no shared vision + Opportunities to increase professional space and autonomy, more possibilities to act according to my own values and vision, feelings of independence and confidence	6% 14%
	(Other)	- Influences of the media + Collective agreement	2% 2%

Note on Table 2: ¹Percentages in terms of how often a factor was mentioned in the total of threatening influences (192) or stimulating influences (181). * For example: 28% = 54 citations in a total of 192 threatening influences.

also created a residual category ('other'). In the macro system, we identified two contextual factors: educational accountability and standards, and inclusive education. The meso system produced three factors: school improvement, social–professional relationships and school's organisational aspects. Finally, four contextual factors in the micro-system were distinguished: organisation of work in classroom, pupils' educational needs, individual professional development, and professional space and autonomy.

The analysis indicated that the theme of educational accountability and standards was mentioned as a threatening contextual factor for 28% of the cited negative influences. This was a notably larger proportion in comparison with the proportions of teachers citing any other contextual factor as threatening. The factor related to organisation of work in the classroom took second place, with 19% of the citations. This was followed by schools' organisational aspects, which was cited as a threatening factor for 16%, and inclusive education and pupils' educational needs, which were each cited as threatening factors for 10%. In terms of contextual factors perceived as stimulating, school improvement was mentioned by the largest proportion of 35%. This was followed by pupils' educational needs (20%), then professional space and autonomy (14%), and then individual professional development (13%).

It is important to note that all the contextual factors, with the exception of individual professional development, were regarded as having both stimulating and threatening aspects, to a greater or lesser degree. In particular, the factors school improvement (7% threatening, 35% stimulating), pupils' educational needs (10% threatening, 20% stimulating), and professional space and autonomy (6% threatening, 14% stimulating), reflected this duality. This aptly illustrates, for example, how the challenge of meeting all pupils' educational needs may cause both frustration *and* satisfaction gained from contributing to pupils' development.

Combinations of factors and teachers' appraisal

In order to address our second research question, we analysed the focus group transcripts. Through this analysis, we detected four patterns consisting of combinations of the factors we had identified. Each pattern encompassed macro, meso, and micro-contextual

Table 3. Charting contextual factors into patterns.

Pattern	Macro system	Meso system	Micro system
I. Organisation of daily classroom practices	Educational accountability and standards	School's organisational aspects	Organization of work in classroom
II. School culture	-	Social–professional relationships	Professional space and autonomy
III. Educational improvement	-	School improvement	Professional space and autonomy Teachers' individual professional development
IV. Contribution to pupils' development	Inclusive education	School's organisational aspects	Pupils' educational needs

factors, within and across levels. In Table 3, the four patterns are presented: organisation of daily classroom practices, school culture, educational improvement and contribution to pupils' development.

The organisation of daily classroom practices pattern featured three factors: educational accountability and standards (macro), the school's organisational aspects (meso) and the organisation of work in the classroom (micro). For example, teachers described how data-based decision-making reforms increased their accountability and standards, but they did not receive any additional resources from the schools' organisational aspects, so they experienced work overload in the classroom and could not realise their pedagogical goals. This pattern, thus, was marked by practical dilemmas, as one interviewee noted:

I lose energy when I have to fill out forms to evaluate pupils' learning outcomes, instead of talking with children, or with parents and colleagues, about the children's developments. Education is about interaction, not about administration.

This pattern also featured a mismatch between the external demand for paperwork and teachers' personal beliefs that spending time on social interactions is more critical to education. It suggests that this mismatch can generate pressure, which in turn may cause the teacher to feel a loss of momentum. In the organisation of daily classroom practice patterns, teachers were experiencing elements of organising classroom processes as non-functional and forcing themselves to pursue other priorities, to the disadvantage of their pedagogical practices.

The school culture pattern comprised social-professional relationships (meso) and professional space and autonomy (micro), both of which can have positive or negative influences. In terms of positive directions, the analysis suggested that social-professional relationships empowered teachers' professional space and autonomy, and thus TPP was strengthened. However, it was also the case that negative social-professional relationships and limited professional space and autonomy resulted in greater pressure on TPP. Based on this interpretation, it may be the case that, if teachers do not perceive shared goals with their colleagues, and professional dialogue is difficult, the sense of decreased professional space and autonomy in the classroom can result in pressure. For example, as one teacher observed:

Educational goals set out at higher levels are guiding principles for my practices instead of my own observations of the pupils. I get the feeling that I am losing ownership.

In this instance, the external demand was to use a certain teaching method, whereas the teacher's own professional ideal was to use their own first-hand experiences of their pupils in guiding her practices. The pressure, combined with the way this method was implemented top-down, may cause the teacher to feel disconnected, without a sense of autonomy. Another teacher noted a similar issue, though with a more solution-oriented view:

It depends on the choices you make yourself, a conscious choice! Stand up for the aspects that are important to you in your classroom.

This signals that the teacher sensed external demands that threatened something of significance and meaning: pedagogical practices. Taken together, this pattern suggested that the required methods and content knowledge conflicted with teachers' personal educational vision that enabled them to give meaning to their own practices.

The third pattern, educational improvement, had three factors: school improvement, professional space and autonomy, and teachers' individual professional development, which interacted across the meso system and micro system. This pattern was reflective of the view that educational improvement mostly enhanced TPP; as one teacher commented:

Next year, our school will work with a different educational approach, really focused on personalized learning ... That makes me happy, you really have time for personality development and can customize learning processes to pupils' psychological needs.

Educational improvement was also linked to didactical and organisational subjects, where teachers' input to the decision-making processes often was perceived as limited, prompting feelings of decreased autonomy, and hindrance to the pedagogical goals they had set for pupils. This sense is reflected, for example, in the following quotation:

At the moment, we are trying out five new teaching methods for Dutch language and grammar. This is threatening my pedagogical practices, because as I can't pay attention to social interaction processes in the classroom.

Teachers also noted the many other (non-pedagogical) obligations imposed on them (external demand) that required their time and attention, and could distract them from their pedagogical practices, which they considered important (personal belief). This obligation, it was felt, limited professional space and autonomy too. Thus, it can be seen that the mismatch between working on obligations, on the one hand, and maintaining personal beliefs about what is important (pedagogical goals), on the other, could cause pressure (threatening), leaving teachers feeling as if they were not paying sufficient attention to their pupils. However, it must also be recognised that some developments were perceived as strengthening to TPP: for example, courses to enhance particular pedagogical practices or individual schooling that could motivate teachers to pay more attention to their pedagogical goals.

Finally, the contribution to pupils' development pattern consisted of inclusive education (macro), school's organisational aspects (meso) and pupils' educational needs (micro). Teachers described processes regarding inclusive education policies that increased the heterogeneity of pupils' educational needs, which challenged them to meet all those different educational needs, implying growing pressure on TPP. The school's organisational aspects, such as a lack of supportive staff or resources, seemed to mediate this process. In the interviews, teachers shared their classroom experiences of challenges in providing inclusive education, including the following story:

I find it difficult with all those differences among children and the additional tasks they bring with them. You are asked to prepare, record and evaluate your daily practices ... finding time to interact with all the children in my classroom seems like a mission impossible.

This teacher recognised the dilemma of needing to address widely varying educational needs (external demand) while seeking to invest in social interactions with pupils in the classroom (personal belief). This interplay caused pressure and frustration, and led to feelings of incompetence. The dilemma illustrated in this pattern highlights some of the possible consequences experienced by teachers when they feel there is insufficient time and/or other resources for their pedagogical practices.

Discussion

This study offers a contribution to the wider field of research on teachers' experiences and their professional practices by exploring the influence of contextual factors on their pedagogical practices. More specifically, our study aimed to provide insight into which particular contextual factors influenced TPP, and the ways in which they affected TPP, according to our sample of teachers in the Netherlands. In this section, we discuss our findings more broadly and seek to contextualise our study and its implications with reference to relevant literature.

Influences of contextual factors on TPP in a multi-layered system

As presented above, our analysis yielded nine contextual factors across macro, meso and micro systems and suggested that teachers perceived positive and negative influences on their pedagogical practices. Our finding that the most frequently mentioned threat to TPP was educational accountability and standards resonates with Ballet and Kelchtermans (2009) study, among others. Furthermore, as observed elsewhere (e.g. Jackson and Temperley 2007), school improvement was identified as an important factor that could stimulate TPP. Interestingly, teachers can appraise the same contextual influences as both threatening and stimulating (Dinham et al. 2017; Lazarus 2006; Lazarus and Folkman 1984). Such so-called 'dual roles' might arise because the factors' influences differ, depending on individual variability in perceptions and reactions (Smith and Lazarus 1990).

Findings arising from our second research question into *how* contextual factors influence TPP reflect the complex interplay of factors in teachers' work contexts. More specifically, factors in the micro system originate from factors in meso and macro systems (Bronfenbrenner 1979) and help to provide a meaningful description of how TPP is influenced. In our study, four patterns arose that combined factors from different systems. The organisation of daily classroom practices pattern predominantly consisted of structural factors in the context, which seemed to distract or compete with TPP. This chimes with the pattern Ballet and Kelchtermans (2009) found: they also noted the effects of organisational working conditions and the school's structural aspects. Further, the school culture pattern both enhanced and competed with TPP. Teachers referred positively to social-professional relationships though they differed in the space and autonomy they experienced. As Hanson signified back in 1978, teachers want to guide their own practices and participate in decision-making processes. It is noteworthy that one factor we had expected here – the importance of school leadership – was rarely mentioned by the teachers. A possible explanation for this might be that distributed leadership has currency in Dutch primary schools (Amels et al. 2020), with apparently positive influences on teachers' decision-making processes. Thirdly, the educational improvement pattern suggested mainly stimulating influences that could be linked both to a school's collective – and teachers' individual – professional development. Lastly, when it came to contribution to pupils' development patterns, these processes were predominantly perceived as threatening. In terms of pupils' educational needs, inclusive education reform was seen to have generated more diversity in classrooms, with teachers feeling challenged to meet pupils' diverse needs. In some respects, the school's organisational aspects seemed to be a mediating factor: if contextual resources

(e.g. teaching assistants) were available, they could support teachers' efforts, enable them to contribute to pupils' educational needs and perhaps lessen the pressure on TPP. This finding has resonance with Ballet and Kelchtermans 2009, though further research is needed to fully understand this influence.

Limitations and future research

We conducted a relatively small-scale study in one area of the Netherlands. As with all research, it is important to bear in mind the limitations of the study's scope and approach when interpreting the findings. Some limitations originate from the instruments we used, and the way we used them to gather our data. First, we used a questionnaire survey to assess TPP and contextual factors on one occasion, with a specific and relatively small sample: this was followed up with focus group interviews with a few participants. The intention of our study was clearly not to infer generalisation: rather, our investigation aimed to provide insights drawn from a detailed analysis of rich data. It would be interesting for future, larger scale research to monitor teachers' TPP and related factors on multiple occasions (e.g. using logs or diaries). Second, some responses to the survey questions were ambiguous. For example, most respondents referred to professional space and autonomy (PSA) as a protective factor, described by phrases such as 'increasing PSA' and 'independence'. The written descriptions of contextual factors also were sometimes reversed, which made it challenging to interpret the direction. However, these factors emerged again in the interviews, during which we continued asking questions to gain more insights, which provided support for our interpretations. Third, the item asking which factors had positive influences sometimes prompted descriptions of resources and coping strategies, such as 'getting energy from working with pupils' or 'seeing growth in pupils' development'. Although coping strategies and resources are interesting topics in relation to resolving the pressure teachers experience, they may involve potential biases regarding the stimulating influence of contextual factors. To clarify this distinction, the strategies and resources teachers use to cope offer interesting questions for further research (Lazarus and Folkman 1984; Montgomery and Rupp 2005).

In the focus group interviews, we focused on the context and did not explicitly ask for teachers' personal and professional characteristics, although teachers' beliefs were constantly apparent in the analysis of the interview data. It was evident that working on pedagogical goals constituted the core of primary school teachers' work. Personal and professional characteristics are, of course, integral to teachers' professional identities (Beijaard, Meijer, and Verloop 2004; Olsen 2010; van Veen and Slegers 2009) and will influence the tensions teachers experience regarding their practices. We need additional studies that also involve in-depth exploration of teachers' personal and professional concerns and values in order to comprehend the full range of processes that occur in teachers' daily classroom practices.

Further implications

Our small-scale study draws attention to the ways in which teachers' experiences of pressure on their pedagogical practices are context-dependent and influenced by an interplay of factors in multiple systems. It has revealed patterns of primary appraisal and

its constitutive factors that occurred in the teachers' work contexts. These findings have implications for the school as an organisation and, more specifically, for the cultural factors of collegiality and collaboration. In the school culture pattern, teachers referred to social–professional relationships as a stimulating condition for collegiality and collaboration. According to Little (1990), collaboration in schools starts with shared goals, which contribute to a sense of bonding and results in mutual commitments to achieve joint goals. Furthermore, social network theory reminds us that social relationships can be the key to accessing various resources. At the school level, the structure of social relationships may support or constrain the achievement of pedagogical goals and help decrease pressure (Daly et al. 2010). Our study also highlights implications related to educational accountability and standards. As we mentioned above, teachers sometimes feel that they are required to carry out many organisational tasks that are not always perceived as an improvement for the quality of education. With regard to data-based decision-making, Schildkamp (2019) makes clear that data can play a crucial role in making informed decisions, but also emphasises that data-based decision-making is a complex process that should not happen in isolation. Data use is influenced by actors at different levels, by diverse factors in the macro and meso system, and by the teachers themselves in the microsystem. According to Priestley et al. (2015), teachers should engage with school improvement because doing so enables them to become agents of change; this might decrease the pressure they experience.

Conclusions

Balancing pedagogical practices and other educational tasks seems to be a complex challenge for primary school teachers. In order to decrease the tensions involved and support teachers' pedagogical practices, policy-makers and school boards should pay more attention to the unintended threatening influences that reforms may have on TPP. Rickinson et al. (2017) distinguish two areas with regard to the use of evidence in policy and practice: what evidence is used and how evidence is used. These findings underline the importance of continued efforts to understand and represent evidence-use more effectively within educational practices. In addition, school leaders should be aware of the dynamic character of contextual influences on TPP: that is, be mindful that the way teachers perceive their work context and how this influences their pedagogical practices can differ from time to time and across teachers (Bryk et al. 2010). Because TPP constitute the core of teachers' work and are crucial for the quality of classroom interaction, more awareness of contextual influences on pedagogical practices can ultimately enhance both pupils' and teachers' wellbeing (Hamre et al. 2014; Marshik, Ashton, and Algina 2017).

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