Teacher collaboration on the use of pupil learning outcome data: A rich environment for professional learning?

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HIGHLIGHTS

- Mainly storytelling and helping with regard to using pupil learning outcome data.
- Little interdependency between Flemish teachers.
- Limited professional learning among teachers regarding data use.

ARTICLE INFO

ABSTRACT

Collaboration on data use is expected to provide valuable opportunities for teachers to learn. Therefore, the goals of this qualitative study are to provide insight both into teachers' learning activities (storytelling, helping, sharing, joint work) with regard to collaborative use of pupil learning outcome data, as well as into teachers' professional learning (new or confirmed ideas, changed ideas of the self, consciousness, intention to change behavioural practice, turn new or confirmed ideas into practice) from these activities. We find that teachers mainly undertake storytelling and helping activities in terms of data use and that professional learning resulting from these activities is limited.

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1. Introduction

Data are becoming more and more important for teachers' day-to-day decisions (Kerr, Marsh, Ikemoto, Darilek, & Barney, 2006; Verhaeghe, Vanhoof, Valcke, & Van Petegem, 2010). In particular, pupils' cognitive and non-cognitive learning outcomes are seen as data with great potential for teachers to develop and improve their practice (Jimerson, 2014).

Data use has been described as a cyclical process, in which phases of discussing, interpreting and diagnosing data and taking actions follow each other (Verhaeghe et al., 2010). During this process, interactions among team members are considered to be essential for fruitful data use (Copland, 2003; Hubbard, Datnow, & Pruyn, 2014; Wayman, Midgley, & Stringfield, 2006). Problems that are — at times — attributed to the individual capacity of data users

might be overcome by interacting with colleagues (Hubbard et al., 2014; Wayman et al., 2006). Researchers expect that teachers' interactions with colleagues on data use provide valuable opportunities for teachers to learn, so that data use has the potential to serve as a rich environment for teachers' professional learning (Katz & Dack, 2014; Vanhoof & Schildkamp, 2014). This study aims to contribute to existing literature by providing insight into teachers' professional learning in the context of data use.

Up to now, research into data use has fallen short in two areas. First, there is insufficient evidence on the nature of teachers' interactions on the subject of pupil learning outcomes. Although researchers into data use have attempted to study various forms of collaboration, such as team work or communities (Bertrand & Marsh, 2015; Hubbard et al., 2014; Wayman et al., 2006), little is known about the learning activities undertaken by teachers during these interactions. Given the potential contribution of data use for teacher learning, more insight into teachers' learning activities with regard to discussing data, interpreting data, diagnosing data and taking actions upon data is needed. Therefore, the first goal of this study is to describe teachers' learning activities with regard to

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teachers' use of pupil learning outcomes.

Data use is a cyclical process in which interaction can vary depending on each phase (e.g. more interaction in discussing than in taking action). To address this complexity, we use the Little (1990) framework, which incorporates an individual as well as a social perspective on teachers' learning activities. We investigate four types of teacher learning activities that have the potential to enhance teachers' professional learning: daily conversations on pupil learning outcomes (storytelling), asking for help or giving advice with regard to the use of pupil learning outcomes (helping), sharing materials or strategies to use pupil learning outcomes (sharing) and making arrangements or creating work groups with regard to pupil learning outcomes (joint work) (Kwakman, 2003; Little, 1990).

Second, knowledge on teachers' professional learning by means of data use interactions is scarce. A major pitfall for teachers' professional learning from data use activities is that teachers fit data into their current thinking (Katz & Dack, 2014). Although storytelling, helping, sharing and joint work are all activities that have been found to contribute to teachers' professional learning (Bakkenes, Vermunt, & Wubbels, 2010; Meirink, Meijer, Verloop, & Bergen, 2009a; Pareja Roblin & Margalef, 2013; Zwart, Wubbels, Bergen, & Bolhuis, 2007), the extent and type of professional learning results depend on the learning activities that are undertaken. The second goal of this study is to examine whether the learning activities that teachers undertake result in (some types of) professional learning.

Teachers' professional learning is studied using the Zwart, Wubbels, Bolhuis, and Bergen (2008) framework because this framework captures professional learning at the level of cognition, attitude and behaviour. We examine seven different types of professional learning: new ideas, conceptions or beliefs; confirmed ideas, conceptions or beliefs; consciousness; turning new ideas into practice; changed ideas of the self; intention to change behavioural practice; and turning confirmed ideas into practice.

In order to expand the current knowledge base on teachers' learning activities regarding the use of pupil learning outcomes and teachers' professional learning, the following research questions are central to this study:

1. Which learning activities do teachers undertake with regard to the use of pupil learning outcomes: storytelling, helping, sharing and/or joint work?
2. Which types of professional learning do teachers report as a result of storytelling, helping, sharing and joint work activities with regard to pupil learning outcomes?

2. Context of the study

This study took place in Flanders, which has a specific context to study data use in. Compared to other recurring countries in literature, the Flemish government takes a rather school improvement oriented perspective with regard to data use. Whilst standards are defined at the end of the second and sixth grade of secondary education, schools are autonomous in how these standards are reached (the curriculum) (De Volder, 2012; Penninckx, Vanhoof, & Van Petegem, 2011). In addition, central exams are absent and no public databases or rankings of schools are available (De Volder, 2012; OECD., 2013). Schools themselves are responsible for getting insight into whether or not they reach the Flemish standards at the end of secondary education (De Volder, 2012). Thus, governmental expectations towards data use are rather implicit and the responsibility for using data and support for data use lies with individual schools and teachers.

The absence of standardized testing in Flanders has implications for the conceptualization of data in this study. Schools and teachers primarily rely on their own data sources in order to get insight into pupil learning outcomes. Given the wide range of potential data sources (e.g. tests, assignments, observations or portfolios) and potential differences between teachers and schools in the data sources that are used, a broad conceptualization of data is needed within the Flemish context. Therefore, learning outcome data in this study comprise both cognitive (i.e. linguistic and arithmetic skills) and non-cognitive outcomes (i.e. attitudes, art and physical education), which can be both qualitative (i.e. observations) and quantitative (i.e. class tests).

3. Conceptual framework

To situate teachers' learning activities and their professional learning in their broader context, we first frame teachers' use of pupil learning outcomes within the context of workplace learning. Subsequently, we describe potential learning activities of teachers in regard to the use of pupil learning outcomes and our conceptualization of teachers' professional learning outcomes.

3.1. Teachers' workplace learning

Teachers' workplace learning is a comprehensive concept, which has been described from various points of view (Bakkenes et al., 2010; Hoekstra, Brekelmans, Beijaard, & Korthagen, 2009; Levine & Marcus, 2010; Meirink et al., 2009a). Recurrent elements are that teachers' workplace learning is situated within daily practice (Kwakman, 2003; Pareja Roblin & Margalef, 2013) and that teachers act as constructors of new knowledge, beliefs or behaviour (Meirink et al., 2009a).

Research incorporates two major foci in investigating teachers' workplace learning. First, the concept can be approached as a process variable. In these studies, teacher learning is examined as (a sequence of) learning activities that teachers undertake in the workplace (Kwakman, 2003; Little, 1990; Zwart et al., 2008). Although this approach provides insights into 'what teachers do' in order to learn, learning results ('what teachers actually learn') are not necessarily brought to the surface. Therefore, the second approach to teachers' workplace learning is to conceptualize it as an outcome variable. Several studies have investigated cognitive and/or behavioural learning results of teachers in workplace settings (Bakkenes et al., 2010; Hoekstra et al., 2009; Levine & Marcus, 2010; Meirink et al., 2009a; Zwart et al., 2008).

Our study will distinguish between process characteristics (learning activities that take place) and the results of learning processes (teachers' professional learning), in order to cover the concept of workplace learning profoundly.

3.2. Learning activities

Given that workplace learning is situated in daily practice, one cannot expect that learning activities will be merely individual or social (Kwakman, 2003). We use the Little (1990) framework because it incorporates both the individual and the social perspective on learning activities. Little (1990) categorizes learning activities depending on the (increasing) level of interdependence between teachers: storytelling, helping, sharing and joint work.

The integration of an individual and a social perspective on learning activities in the Little (1990) framework is particularly useful for this study since social interaction can vary depending on the data use phase (discussing, interpreting, diagnosing, taking action). Whereas discussing data can comprise a wide array of different social interactions, taking (instructional) action upon data