JYX JYVÄSKYLÄN YLIOPISTO UNIVERSITY OF JYVÄSKYLÄ

This is a self-archived version of an original article. This version may differ from the original in pagination and typographic details.

Author(s): Rytivaara, Anna; Pulkkinen, Jonna; Palmu, Iines

Title: Learning about students in co-teaching teams

Year: 2023

Version: Published version

Copyright: © 2021 The Author(s). Published by Informa UK Limited, trading as Taylor & Franci

Rights: CC BY-NC-ND 4.0

Rights url: https://creativecommons.org/licenses/by-nc-nd/4.0/

Please cite the original version:

Rytivaara, A., Pulkkinen, J., & Palmu, I. (2023). Learning about students in co-teaching teams. International Journal of Inclusive Education, 27(7), 803-818. https://doi.org/10.1080/13603116.2021.1878299

International Journal of Inclusive Education

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/tied20

Learning about students in co-teaching teams

Anna Rytivaara , Jonna Pulkkinen & Iines Palmu

To cite this article: Anna Rytivaara , Jonna Pulkkinen & Iines Palmu (2021): Learning about students in co-teaching teams, International Journal of Inclusive Education, DOI: 10.1080/13603116.2021.1878299

To link to this article: https://doi.org/10.1080/13603116.2021.1878299

© 2021 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group

Published online: 31 Jan 2021.

Submit your article to this journal

Article views: 109

View related articles

View Crossmark data

Full Terms & Conditions of access and use can be found at
https://www.tandfonline.com/action/journalInformation?journalCode=tied20

INTERNATIONAL JOURNAL OF INCLUSIVE EDUCATION
https://doi.org/10.1080/13603116.2021.1878299

OPEN ACCESS Check for updates

Learning about students in co-teaching teams

Anna Rytivaara [a], Jonna Pulkkinen [b] and Iines Palmu [c]

[a]Faculty of Education and Culture, Tampere University, Tampere, Finland; [b]Finnish Institute for Educational Research, University of Jyväskylä, Jyväskylä, Finland; [c]Valteri Centre for Learning and Consulting, Mikael, Finland

ABSTRACT
Teachers are facing increasingly diverse classrooms globally. To support all students efficiently, teachers need to know their students. Drawing from the literature of teacher learning and inclusive education, we explored how teachers learn to know their students in a co-teaching context. Analysis of interviews and diaries of five co-teaching teams showed that teachers learned about their students in a co-taught classroom by *observing students* and by *obtaining knowledge* from and *co-constructing knowledge* with their co-teaching partner. Moreover, teachers' learning led to *shared responsibility for the student* and a *better understanding of student diversity*. Thus, sharing knowledge of students can lighten teachers' workload in inclusive settings and benefit both teachers and students.

ARTICLE HISTORY
Received 27 February 2020
Accepted 18 December 2020

KEYWORDS
Co-teaching; inclusive education; teacher learning; teacher knowledge; students

Introduction

Since the launch of the Salamanca Statement (UNESCO 1994), classrooms have become increasingly diverse globally. The situation is demanding for the teachers, many of whom are critical towards the practices and outcomes of inclusive education (Moberg et al.2020; Saloviita 2020). Teachers' critical attitudes might be explained by their lack of practical knowledge of meeting the individual needs of all students (Moberg et al. 2019; Gal, Schreur, and Engel-Yeger 2010). In particular, Jordan, Schwartz, and McGhie-Richmond (2009) have argued that, teachers who believe that they are responsible for each and every student, are also more effective in working with their students.

In this paper, this combination of teachers' thinking, experiences, skills and beliefs is conceptualised as teachers' practical knowledge (Connelly, Clandinin, and He 1997). It is studied within an inclusive practice, co-teaching, where teachers come to share their practical knowledge while working together, in order to meet the needs of diverse student groups (Pratt 2014; Thousand, Villa, and Nevin 2006). However, little is known about teachers sharing their knowledge of students. This lack of information is noteworthy as in co-teaching it is often the case that one teacher knows the students

CONTACT Anna Rytivaara anna.rytivaara@tuni.fi Faculty of Education and Culture, Tampere University, Kalevantie 4, Tampere FIN-30014, Finland

© 2021 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group
This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial-NoDerivatives License (http://creativecommons.org/licenses/by-nc-nd/4.0/), which permits non-commercial re-use, distribution, and reproduction in any medium, provided the original work is properly cited, and is not altered, transformed, or built upon in any way.

better than the other. Yet, to support student learning, all teachers in the classroom need knowledge and understanding of their students, not only about how they learn but also from a social, cultural and personal perspective (Shulman and Shulman 2004). At the core to success are teachers' relationships with students (Fransson and Frelin 2016; Frelin 2015; Spilt, Koomen, and Thijs 2011), and knowledge of their students (Hargreaves 2000; Shulman 1987).

Teachers' relationships with their students, and making a difference in their lives, are what drives teacher commitment (Fransson and Frelin 2016 ; Rytivaara and Frelin 2017). Teacher–student relationships are known to have effects on, for example, student behaviour and academic performance (Baker, Grant, and Morlock 2008; Liew, Chen, and Hughes 2010). However, in order to meet the diversity of students and promote student well-being it is important that teachers see students as individuals (e.g. Backman et al. 2012).

This study will take a novel path in the field of teacher learning (e.g. Opfer and Pedder 2011; Van Veen, Zwart, and Meirink 2012) by focusing on teachers' learning about students. Moreover, by focusing on the stories of five teacher teams comprising a special education teacher and a general education teacher during the initial phase of their co-teaching partnership, our study will contribute to the fields of co-teaching and inclusive education by increasing our understanding about teachers sharing their practical knowledge particularly about students (Pratt 2014; Rytivaara, Pulkkinen, and de Bruin 2019). Thus, to contribute to these gaps in the literature, the purpose of this study was to analyse co-teachers' stories about sharing and co-constructing practical knowledge of their students. We posed the following questions:

1. What kinds of features did the teachers' knowledge about students cover in a co-teaching context?
2. How did the teachers learn to know their students during the co-teaching process?
3. What were the outcomes of the teachers' learning?

Sharing and learning in co-teaching

Co-teaching is a relational practice in which two or more teachers plan and teach lessons and assess the students together (Thousand, Villa, and Nevin 2006). Successful co-teaching partnership is based on trust and careful pre-planning as teachers need to negotiate common goals and responsibilities together (Baeten and Simons 2014; Gallo-Fox and Scantlebury 2015; Pratt 2014; Shin, Lee, and McKenna 2016). In the process, teachers come to reflect on and share their personal and professional practical knowledge, both being key elements also in teacher learning (e.g. Postholm 2012).

Working in a classroom with a colleague provides teachers with opportunities to observe students individually and in their interpersonal relationships, as well as to see their colleagues work and share their daily experiences (Takala and Uusitalo-Malmivaara 2012). In their study of teacher learning, Oliver et al. (2017) describe three modes of sharing, all of which co-teachers are often involved in: directly experienced sharing such as co-teaching, sharing through discussing an experience, and indirect sharing via reification of (the shared) knowledge. These opportunities to share classroom practice

together and discuss students, for example, makes co-planning and co-teaching a fruitful context for both experienced and inexperienced teachers to learn together and from each other (e.g. Nilsson and van Driel 2010; van Velzen et al. 2012). In particular, when teachers share practical knowledge with each other, they may learn new perspectives from each other or form totally new perspectives together (Rytivaara and Kershner 2012). For the purposes of this paper, we define teacher learning as a process which involves a change in teachers' practical knowledge (Korthagen 2017). We approach teachers' learning about students as a continuum from surface-level to deep-level learning (Marton and Booth 1997), where learning is conceptualised in six different forms. When teacher learning is conceptualised as knowledge reproduction, teachers are able to increase their knowledge of their students, memorise and reproduce information about them, and apply this knowledge in their work. When learning is approached as seeking meaning, teachers learn to understand their students better, learn to see them in a different way and change as a person. The process during which a teacher learns to see students in a different way and changes as a person is very similar to Mezirow's (2009, 103) definition of transformative learning as 'a rational, metacognitive process of reassessing reasons that support problematic meaning perspectives or frames of reference, including those representing such contextual cultural factors as ideology, religion, politics, class, race, gender and others'. However, teacher learning also involves social and collective aspects that are missing in the above conceptualisations and are present in learning about students in co-teaching contexts.

For example, paraphrasing Putnam and Borko (2000), teacher learning is situated in specific contexts such as classrooms, and occurs in and through the relationships between teachers and students. Darling-Hammond and Richardson (2009), in turn, describe effective teacher learning as a continuous process of active learning, practice and collaborative reflection with colleagues. It is surprising, given the above views, that co-teaching has received limited attention from the perspective of teacher learning. However, co-teaching, at best, can give rise to a supportive community in which teachers are free to reflect critically on their assumptions and expectations regarding their students, thereby resulting in transformative learning (Mezirow 2009; also Shulman and Shulman 2004). Co-teaching also raises teachers' awareness of the possibility of other meaning perspectives that support transformative learning (Mezirow 2009).

Perspectives on knowledge of students in teachers' work

Teachers' relationships with students draw on teachers' situational, individual-level knowledge about students (Fransson and Frelin 2016). Good teacher–student relationships are essential not only for successful instruction and learning but also for students' engagement in school (Quin 2016). Teachers' relationships with students are unique, and developing a trusting relationship takes time and effort. Teacher–student relationship can be understood as a process in which the teacher learns about, for example, a student's specific learning and socio-emotional needs and how to meet them (Cooper and Scott 2017). Likewise, daily interactions between teachers and students during the school day can affect how teachers perceive students (Baker, Grant, and Morlock 2008). For example, because teachers see students act and react in different situations, they have

their own perspectives on, for example, what triggers a student's challenging behaviour in class (Spilt and Koomen 2009). This learning-about-the-student process is also affected by teachers' previous practical knowledge (Moberg et al. 2019) and, possibly, openness to learning something new (Van Eekelen, Vermunt, and Boshuizen 2006; Vermunt and Endedijk 2011).

Sharing responsibility and information about individual students can increase teachers' knowledge about students and their learning or support needs, and strengthen teachers' professional self-esteem and, ultimately, well-being (Murawski and Hughes 2009; Spilt, Koomen, and Thijs 2011; Takala and Uusitalo-Malmivaara 2012). Moreover, teacher collaboration enables students' skills and prior knowledge to be investigated more widely, and thus provides teachers with a broader perspective in evaluating them as different teachers may have different understandings and opinions about students and their learning (Sointu et al. 2012).

Teacher–student relationships have been studied from many viewpoints, such as its association with student behaviour, engagement and overall student well-being (Quin 2016; Roorda et al. 2011). Research from the student standpoint has shown that children start developing social attachments to their teachers from early on their school path (Quin 2016). However, students can experience these relationships in many ways (Honkasilta, Vehkakoski, and Vehmas 2016). Thus, for students, co-teaching can be a fresh opportunity to develop two unique teacher–student relationships through various learning situations and social interactions (Takala and Uusitalo-Malmivaara 2012).

Methods

The context of this study

'Education for all' and early intervention are the main principles of the Finnish education system (e.g. Graham and Jahnukainen 2011; Halinen and Järvinen 2008). While the goals of basic education are the same for all students, teachers are duty bound to consider students' individual needs, adapt teaching when necessary, and support students individually (Halinen and Järvinen 2008). Thus, knowledge of students is an essential part of teachers' work. This study was conducted in Finnish comprehensive schools which comprise primary schools (Grades 1–6) and lower secondary schools (Grades 7–9). Almost every comprehensive school has at least one special education teacher who works in the domain of part-time special education, which is a form of early intervention. To receive part-time special education, a student does not need to be officially referred; instead, the provision of part-time special education is based on teachers' observations and recommendations (Jahnukainen 2011). Teachers in Finland have considerable autonomy (Sabel et al. 2011), which means that they can also decide how they arrange their teaching. Special education teachers' work can include individual teaching, small group teaching, or co-teaching (Takala, Pirttimaa, and Törmänen 2009).

Participants and data

The present data were collected in connection with a professional development project, which formed part of a nationwide initiative funded by the Finnish National Agency for

Education in 2010–2012. In this project, teachers experimented with intensive co-teaching for nine weeks. Of the 24 teams from the participating schools who volunteered we selected 12 teams based on the teams' co-teaching plans for the nine-week period. The data for this paper comprise ten primary school teachers' stories drawn from thematic team interviews (Appendix 1) and individual diaries (Appendix 2). The participants ranged from early-career to near-retirement teachers.

Each co-teaching team comprised a general education (GE) teacher and a special education (SE) teacher (Table 1). This is the most commonly used combination in co-teaching (Saloviita and Takala 2010), and the teams were thus considered a suitable sample for this study. The teams were interviewed twice: once during school visits in autumn 2010 and once later in spring 2011. The latter interviews were recorded and transcribed verbatim. In the recorded interviews, teachers were asked about their teaching background and co-taught classes, the early phases of the team's co-teaching program, the implementation of co-teaching, and the advantages and challenges of co-teaching. The questions were formed based on discussions between the researchers and the teachers during the school visits.

The teams worked in classrooms containing approximately twenty students, some of whom had learning disabilities or difficulties (e.g. difficulties in reading). In most cases, the special education teacher had previously given the students with disabilities or difficulties part-time special education separately from the rest of the class, historically the usual practice in Finland (Takala, Pirttimaa, and Törmänen 2009). The students were from grades 1–6. In Finnish schools, teachers usually teach the same group of students for several years (e.g. grades 1–2 or 3–6). Thus, only the first-grade teachers in the project had new students; in addition, the special education teacher in Team 4 was new to the school. Teachers' prior knowledge of the students is described in Table 1.

Teacher stories have proved important in studying teachers' practical knowledge and hence their professional learning (Kelchtermans 2009, 2016). We understand teacher stories as narrated experiences (Clandinin and Connelly 1996; Polkinghorne 1995). We approached the team interviews as collaboratively constructed stories, based on the teachers' experiences, narrated to a specific audience in a specific context and time (Clandinin and Rosiek 2007; Cortazzi and Jin 2006). Through these co-constructed stories, we were able to explore the teachers' professional knowledge as 'narratively composed, embodied in a person, and expressed in practice' (Clandinin and Connelly 2000, 124).

Table 1. Description of co-teaching teams.

	Teachers	Grade	Prior knowledge of students	Number of co-taught lessons weekly
Team 1	Virpi (GE) and Sara (SE)	1. grade	Sara knew the students from pre-school	Autumn term 4–5, spring term 2
Team 2	Katja (GE) and Raija (SE)	1. grade	Raija knew the students from pre-school	Minimum 11
Team 3	Riikka (GE) and Jenni (SE)	2. grade	Both knew the students	5
Team 4	Helena (GE) and Elsa (SE)	2. grade	Helena knew the students	3
Team 5	Kaisu (GE) and Ismo (SE)	6. grade	Both knew the students	2–3

Analysis

Two researchers analysed the interviews and diaries (Riessman 2008; Merriam 2009). Following the research questions (RQ), the researchers first picked out the segments in which the teachers reflected on their knowledge about their students in the co-teaching context, and how they had gained this knowledge. They then coded the selected data and identified four categories to respond to the research questions: *the content of the teachers' knowledge about their students* (the issues teachers talked about when talking about students) (RQ1); *the focus of the teachers' observations* (what teachers paid attention to when observing students) (RQ1); *the means used to learn about students* (how teachers gained information about students) (RQ2); and *the outcomes of their learning* (the meanings teachers attributed to their shared knowledge about students) (RQ3). The first two categories, *the content of knowledge about students* and *the focus of teachers' observations* were merged into *features of teachers' knowledge about their students* which answers to the first research question. The remaining two main categories, *the means used to learn about students* and *the outcomes of their learning*, were analysed further. Three means of *learning about students* were identified: observing students (teachers describing the observation opportunities and situations during co-teaching), obtaining knowledge about students (discussing students when one teacher had information about a student that the other teacher had not), and co-constructing knowledge about students (discussing experiences from the same lessons, with an aim of mutual understanding). Moreover, two categories of *outcomes of learning* were identified: s*hared responsibility for students*, and *a more holistic view of students*.

The researchers used analyst triangulation to verify the analysis (Patton 2015). Thus, one researcher first analysed half of the data while the other one analysed the other half. Then, they compared their decisions and discussed the analysis until they reached an agreement on the selection, categorisation and interpretation of all the data.

Findings

Through their stories about how they talked about students with their co-teaching partners, teachers demonstrated the closeness of their collegial relationship. One teacher (Helena), referring to the knowledge landscape shared with her co-teacher in which 'we know each other, we know these students and we substantially know the parents', described her co-teacher as 'a parallel human being'. These collegial partnerships provided a context for their learning about students.

Features of teachers' knowledge about their students

The teachers' knowledge of their students was extensive. In addition to individual students' 'existing skills' and 'learning', teachers knew and talked about students' 'personal characteristics', 'background' and 'peer relationships'. The teachers considered at least a part of this knowledge to be contextual, as it enabled them to know 'the whole situation'. In other words, their knowledge of their students extended beyond any specific learning skills (e.g. academic skills) to include understanding of the students and their behaviour in the various circumstances and environments the students were living in. Moreover,

the teachers' knowledge about their students was not only knowledge about individuals but also of students as groups with their own characteristics and skills, each group having 'its own way to function'. In sum, much of the teachers' knowledge of their students was highly relational.

Three means of learning

Teachers described three means to learn about their students in a co-taught classroom: observing students, obtaining knowledge about them and co-constructing this knowledge together with their co-teacher. In the first of these, the different co-teaching strategies provided teachers with 'opportunities to observe them [students]'. For example, the co-teachers could negotiate their roles, with one teaching in the front of the classroom and the other observing 'from the back seat' or if the students were working in small groups, as instructed by the main teacher, the other could circulate among the students and observe their working 'as a fly on their shoulder', or work with an individual student or spend a few minutes from time to time 'to make written observations' about the students working. All the teachers regularly took turns as the main teacher, 'to avoid the idea that [the general education teacher is] always teaching', and thus both the SE teacher and the GE teacher had equal possibilities to observe and learn about the students. Hence, all the teachers reported that co-teaching provided them with opportunities to focus on students' 'behaviour and coping', 'ways of acting' and 'working skills' while the other teacher was teaching. The GE teachers, especially, who were normally solely responsible for the class, noticed that 'when teaching alone, this part [paying attention to individual students] is left totally undone', whereas they found observing students a way of 'expanding' [their knowledge], as 'enlightening'. Thus, the knowledge gained by monitoring students' behaviour and their actions in the classroom was conceptualised as something that was rendered visible.

The second means of learning was obtaining information directly from a colleague. In the teams of Elsa and Helena, and Sara and Virpi, where Helena and Sara already knew the students because they had taught them the previous year, Elsa and Virpi acquired knowledge of the students during teachers' joint sessions outside the classroom in the early phases of their co-teaching. The teachers narrated these discussions as rather one-way moments, where one teacher shared her thoughts and observations or practical knowledge of students while the other teacher merely listened without offering any comments or interpretations. For example, the teachers described how they 'went through what kinds of students there are in this class' (Virpi) and 'used a lot of time in [their] co-planning session to gain familiarity with the students in the class' (Elsa). Here, the teachers emphasised how they discussed each student in the class, although 'what kinds of' also indicates they might have categorised students in various ways. Nevertheless, the teachers in both teams considered it self-evident that the one with more knowledge would share it with her co-teacher. As a SE teacher (Sara) put it, 'I had knowledge of the students' skills and so I then, of course, shared it'. Thus, knowledge about students was conceptualised as something that could be transferred and obtained as it is, without much interpretation.

The third means by which teachers learned about their students was by co-constructing knowledge of them. That is, the two co-teachers shared their practical knowledge of

students, their 'impressions', 'experiences' and 'observations', and then discussed and compared these with each other. The teachers felt that their individual views on students were limited and that by reflecting on them together it was possible to come up with a shared understanding of a student that was somewhat different from either of the teachers' original views. Co-constructing knowledge in this way appeared to be an everyday activity for the teachers and took place 'alongside' their work, 'afterwards' [after lessons] or as 'quiet hallway talks'.

> Two pairs of eyes see differently. Like, we can see it the same way or our observations might differ. Those observations, too, are valuable. We can put them together and contemplate them. (Jenni)

It is noteworthy that Jenni's use of 'it' above leaves it unclear whether she is referring to a situation or a student.[1] Either way, she is referring to observations as contextual and interpretive, and co-construction as a process where teachers 'ponder' different possible outcomings or interpretations. Moreover, the data the teachers used in the process of co-constructing knowledge was not gained during co-taught lessons alone: the teachers also emphasised the importance of shared perspectives on issues concerning students in general.

> I'm physically in the classroom three days a week or taking students from there; then for two days I'm not working with these students. But even then, we do talk about how it's going and about certain students. (Sara)

As Sara's description illustrates, co-constructing knowledge about students was based on teachers already knowing students at least on some level, as the teachers were able to share information even from lessons and situations where the other teacher was not present. However, Sara emphasises how they only talked about 'certain students' outside their co-taught lessons. An easy interpretation could be that because Sara is a SE teacher, she would naturally focus her professional support on certain students in the classroom; however, without more detailed data other interpretations are also possible. In sum, knowledge of students in this section was conceptualised as relational and constructed together with a colleague; something that a single person may only have limited or no access to.

Outcomes of teachers' learning

The teachers reported two outcomes of sharing their professional learning about their students: it promoted *shared responsibility for students* and *better understanding of student diversity*. First, the teachers emphasised that shared knowledge of students was not merely a co-teaching issue but had a wider significance in teacher–student relationships: shared knowledge of students meant 'shared responsibility' (Sara) for the students in general, irrespective of the situation, and not only in co-taught classes. To be more specific, the teachers reported that 'the burden is tangibly lighter when there is someone to discuss the students with' (Katja).

The second outcome of teachers sharing knowledge about students concerned teachers' interpretations of students. The teachers reported that shared knowledge resulted in a better understanding of student diversity. On the one hand, teachers had learned that

sharing their unique knowledge about a student could result in a more 'holistic understanding of the student' (Riikka) and 'a wider perspective on the child's issues' (Raija). For example, a GE teacher learned to see her class as a group of individuals, whereas before co-teaching she had been teaching the class as 'a mass' rather than paying attention to students as individuals. On the other hand, the teachers emphasised the importance of multiple perspectives when seeking to validate their interpretations of a student. The teachers reported that discussing their interpretations together left less room for misunderstandings and misinterpretations and thus made student evaluation 'more water-proof and just' and 'strengthened students' legal rights'. Moreover, rather than representing the subjective opinion of a single teacher, sharing knowledge of students with a colleague gave teachers confidence as 'you know for sure what you are talking about' (Helena).

Discussion

This study explored teachers' learning with respect to their practical knowledge about their students. We found teachers' learning to be embedded in their co-teaching practices. Two of the three means of learning that we identified, observing and obtaining information, can be conceptualised as knowledge reproduction, and the third, the co-construction of knowledge, as seeking meaning (Marton and Booth 1997). Our study also showed that teachers narrated the outcomes of their learning as meaningful not only for teachers but also for students.

This study contributes to the fields of teacher learning (Bakkenes, Vermunt, and Wubbels 2010; Hoekstra et al. 2009) and to the rather slim body of research on co-teaching as a context for experienced teachers' professional learning by providing a detailed picture of the means of learning about students as well as the meanings teachers attribute to sharing their knowledge of students.

The study elaborated understanding of teachers' practical knowledge by identifying three conceptualisations of knowledge of students. Two conceptualisations, knowledge as observable and knowledge as transferrable just as it is, can be implemented in one-teacher classrooms. However, the third conceptualisation, knowledge as co-constructed between two colleagues, requires that a teacher has somebody with whom to discuss a student, preferably somebody who also knows and/or works with that student. These conceptualisations raise questions about the limitations of the knowledge any one teacher can acquire about students and highlights the meaning of teachers' collaboration in schools. In particular, when instruction is supposed to address all students' individual needs, keeping in mind the various constructions may increase the accuracy of the assessment of those needs. Moreover, while confirming the previous research about different people having different views on students (Sointu et al. 2012), our findings emphasise the role of discussing those views to achieve a joint understanding of the students.

The use of various co-teaching strategies (Thousand, Villa, and Nevin 2006) enhanced teachers' learning about their students by providing teachers with opportunities to observe individual students and work more closely with them. It is noteworthy that the teachers' views on their students varied even when they were teaching the same students in the same lessons. However, learning does not occur automatically but requires that teachers pay attention to students, observe them consciously and reflect on what they

see. Thus, while previous findings on co-teaching have emphasised the role of reflection on teachers' practical knowledge of classroom management and instructional styles (Baeten and Simons 2014; Shin, Lee, and McKenna 2016; Rytivaara, Pulkkinen, and de Bruin 2019), our findings suggest further that teachers would benefit from sharing and reflecting on their practical knowledge about students, too. This yields a positive circle of learning where the individual and collaborative levels of teacher learning (e.g. Darling-Hammond and Richardson 2009).

In particular, co-teaching as a context of teachers' learning is collaborative in two ways: first, in the fact that the observations are made possible by co-teaching, and second, that teachers share their thoughts and practical knowledge. The co-constructed knowledge, in turn, becomes the possession of individual teachers who can use it by themselves. However, co-teaching to become a learning environment is dependent on teachers being willing to share their knowledge about students and embrace new perspectives brought to the classroom by another teacher. It is quite possible that some co-teachers enter a classroom solely to deliver instruction irrespective of whom they are teaching or co-teaching with, unwilling to share their knowledge or even using their knowledge as a tool to overrule the other co-teacher (Gurgur and Uzuner 2011; Pesonen et al. 2020; Shin, Lee, and McKenna 2016). Building trust and scheduling sufficiently time for co-planning play major role in turning a co-teaching partnership into a tool of professional learning.

Individual differences and individualised instruction are often emphasised in the cases of students with, for example, challenging behaviour or academic problems (Sointu et al. 2017). Moreover, co-teaching is often conceptualised as a partnership between a special education teacher and a general education teacher (Scruggs, Mastropieri, and McDuffie 2007). Thus, it was interesting that both the general education and special education teachers in this study emphasised the importance of knowing their students and that they all told similar stories about their learning, with respect to its content, its means of acquisition and the meanings attributed to it. This finding is in line with previous research that teachers value trusting relationships with their students and find them meaningful in their work (Fransson and Frelin 2016). Yet, to promote more individualised instruction and inclusive education, teachers need opportunities and time to share their practical knowledge with their colleagues and thereby increase their understanding of student diversity (see Moberg et al. 2019).

This study showed that co-teaching supported teachers in recognising student diversity; both between and within students. This more holistic understanding of students (Shulman and Shulman 2004), where the focus is not restricted to students' academic skills but extends to other factors, is a step towards inclusive education where teachers take responsibility for all students regardless of their individual needs (see Jordan, Schwartz, and McGhie-Richmond 2009). Moreover, co-teaching appeared to help teachers to deal with that diversity and increased the shared responsibility for the students, which could further promote teachers' experienced well-being (Takala and Uusitalo-Malmivaara 2012).

This study has its limitations. The data were collected nearly a decade ago; yet more recent interviews would have resulted in very similar teacher stories. Another limitation is that our data did not give us access to the moments when the teachers originally discussed and shared knowledge about their students. Thus, further research, possibly with

video data, on co-teachers' everyday interaction and communication is needed to provide a more detailed picture of, for example, how teachers categorise students (Norwich 2007; Rytivaara and Vehkakoski 2015) and what details about students they share.

To conclude, learning about students is a continual process as teachers regularly encounter new students and form new teacher–student relationships. Sharing this knowledge about students could lighten teachers' workload in inclusive settings and provide a tool for fairer student evaluations. Thus, co-teaching, as well as being a context for teachers' professional learning, can benefit both teachers and students.

Note

1. In spoken Finnish 'it' is commonly used in reference to a person.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This work was supported by Opetushallitus [the Finnish National Agency for Education].

Notes on contributors

Anna Rytivaara, PhD, works as a data protection specialist at the Tampere University, Finland. Her research interests include co-teaching, teacher learning, teacher knowledge and teacher narratives.

Jonna Pulkkinen is a postdoctoral researcher at the Finnish Institute for Educational Research, University of Jyväskylä, Finland. Her research interests include inclusive education, education policy and educational change.

Iines Palmu, M.Ed, is a doctoral student at University of Jyväskylä, Finland. Her research interests include cascading problems in learning and behaviour, motivation, teachers' professional development and co-teaching. She works as consulting teacher at Valteri National Centre for Learning and Consulting.

ORCID

Anna Rytivaara http://orcid.org/0000-0003-4764-4412
Jonna Pulkkinen http://orcid.org/0000-0002-6482-8566
Iines Palmu http://orcid.org/0000-0002-6599-8743

References

Backman, Y., E. Alerby, U. Bergmark, Å Gardelli, K. Hertting, C. Kostenius, and K. Öhrling. 2012. "Learning Within and Beyond the Classroom: Compulsory School Students Voicing Their Positive Experiences of School." *Scandinavian Journal of Educational Research* 56 (5): 555–570. doi:10.1080/00313831.2011.621138.

Baeten, M., and M. Simons. 2014. "Student Teachers' Team Teaching: Models, Effects, and Conditions for Implementation." *Teaching and Teacher Education* 41: 92–110. doi:10.1016/j.tate.2014.03.010.

Baker, J. A., S. Grant, and L. Morlock. 2008. "The Teacher-Student Relationship as a Developmental Context for Children with Internalizing or Externalizing Behavior Problems." *School Psychology Quarterly* 23 (1): 3–15. doi:10.1037/1045-3830.23.1.3.

Bakkenes, I., J. D. Vermunt, and T. Wubbels. 2010. "Teacher Learning in the Context of Educational Innovation: Learning Activities and Learning Outcomes of Experienced Teachers." *Learning and Instruction* 20 (6): 533–548. doi:10.1016/j.learninstruc.2009.09.001.

Clandinin, D. J., and F. M. Connelly. 1996. "Teachers' Professional Knowledge Landscapes: Teacher Stories. Stories of Teachers. School Stories. Stories of Schools." *Educational Researcher* 25 (3): 24–30. doi:10.2307/1176665.

Clandinin, D. J., and M. F. Connelly. 2000. *Narrative Inquiry: Experience and Story in Qualitative Research. The Jossey-Bass Education Series*. San Francisco, CA: Jossey-Bass.

Clandinin, D. J., and J. Rosiek. 2007. "Mapping a Landscape of Narrative Inquiry: Borderland Spaces and Tensions." In *Handbook of Narrative Inquiry*, edited by D. J. Clandinin, 35–75. Thousand Oaks, CA: Sage.

Connelly, F. M., D. J. Clandinin, and M. F. He. 1997. "Teachers' Personal Practical Knowledge on the Professional Knowledge Landscape." *Teaching and Teacher Education* 13 (7): 665–674. doi:10.1016/S0742-051X(97)00014-0.

Cooper, J. T., and T. M. Scott. 2017. "The Keys to Managing Instruction and Behavior: Considering High Probability Practices." *Teacher Education and Special Education* 40 (2): 102–113. doi:10.1177/0888406417700825.

Cortazzi, M., and L. Jin. 2006. "Asking Questions, Sharing Stories and Identity Construction: Sociocultural Issues in Narrative Research." In *Narrative Research on Learning: Comparative and International Perspectives*, edited by S. Trahar, 27–46. Oxford: Symposium Books.

Darling-Hammond, L., and N. Richardson. 2009. "Teacher Learning: What Matter?" *Educational Leadership* 66 (5): 46–53.

Fransson, G., and A. Frelin. 2016. "Highly Committed Teachers: What Makes Them Tick? A Study of Sustained Commitment." *Teachers and Teaching* 22 (8): 896–912. doi:10.1080/13540602.2016.1201469.

Frelin, A. 2015. "Relational Underpinnings and Professionality – A Case Study of a Teacher's Practices Involving Students with Experiences of School Failure." *School Psychology International* 36 (6): 589–604. doi:10.1177/0143034315607412.

Gal, E., N. Schreur, and B. Engel-Yeger. 2010. "Inclusion of Children with Disabilities: Teachers' Attitudes and Requirements for Environmental Accommodations." *International Journal of Special Education* 25 (2): 89–99.

Gallo-Fox, J., and K. Scantlebury. 2015. "'It Isn't Necessarily Sunshine and Daisies Every Time': Coplanning Opportunities and Challenges When Student Teaching." *Asia-Pacific Journal of Teacher Education* 43 (4): 324–337. doi:10.1080/1359866X.2015.1060294.

Graham, L. J., and M. Jahnukainen. 2011. "Wherefore Art Thou, Inclusion? Analysing the Development of Inclusive Education in New South Wales, Alberta and Finland." *Journal of Education Policy* 26 (2): 263–288. doi:10.1080/02680939.2010.493230.

Gurgur, H., and Y. Uzuner. 2011. "Examining the Implementation of Two Co-teaching Models: Team Teaching and Station Teaching." *International Journal of Inclusive Education* 15 (6): 589–610. doi:10.1080/13603110903265032.

Halinen, I., and R. Järvinen. 2008. "Towards Inclusive Education: The Case of Finland." *Prospects* 38 (1): 77–97. doi:10.1007/s11125-008-9061-2.

Hargreaves, A. 2000. "Mixed Emotions: Teachers' Perceptions of Their Interactions with Students." *Teaching and Teacher Education* 16 (8): 811–826. doi:10.1016/S0742-051X(00)00028-7.

Hoekstra, A., F. Korthagen, M. Brekelmans, D. Beijaard, and J. Imants. 2009. "Experienced Teachers' Informal Workplace Learning and Perceptions of Workplace Conditions." *Journal of Workplace Learning* 21 (4): 276–298. doi:10.1108/13665620910954193.

Honkasilta, J., T. Vehkakoski, and S. Vehmas. 2016. "'The Teacher Almost Made Me Cry.' Narrative Analysis of Teachers' Reactive Classroom Management Strategies as Reported by

Students Diagnosed with ADHD." *Teaching and Teacher Education* 55: 100–109. doi:10.1016/j.tate.2015.12.009.

Jahnukainen, M. 2011. "Different Strategies, Different Outcomes? The History and Trends of the Inclusive and Special Education in Alberta (Canada) and in Finland." *Scandinavian Journal of Educational Research* 55 (5): 489–502. doi:10.1080/00313831.2010.537689.

Jordan, A., E. Schwartz, and D. McGhie-Richmond. 2009. "Preparing Teacher For Inclusive Classrooms." *Teaching and Teacher Education* 25: 535–542. doi:10.1016/j.tate.2009.02.010.

Kelchtermans, G. 2009. "Career Stories as Gateway to Understanding Teacher Development." In *Teachers' Career Trajectories and Work Lives*, edited by B. Martin, U. Brinkkjær, H. Plauborg, and S. Rolls, 29–47. Dordrecht: Springer.

Kelchtermans, G. 2016. "The Motional Dimension on Teachers' Work Lives: A Narrative-Biographical Perspective." In *Methodological Advances in Research on Emotion and Education*, edited by M. Zembylas and P. A. Schutz, 31–42. New York: Springer.

Korthagen, F. 2017. "Inconvenient Truths About Teacher Learning: Towards Professional Development 3.0." *Teachers and Teaching* 23 (4): 387–405. doi:10.1080/13540602.2016.1211523.

Liew, J., Q. Chen, and J. N. Hughes. 2010. "Child Effortful Control, Teacher–Student Relationships, and Achievement in Academically At-Risk Children: Additive and Interactive Effects." *Early Childhood Research Quarterly* 25 (1): 51–64. doi:10.1016/j.ecresq.2009.07.005.

Marton, F., and S. Booth. 1997. *Learning and Awareness. Educational Psychology Series*. Mahwah: Lawrence Erlbaum Associates.

Merriam, S. B. 2009. *Qualitative Research: A Guide to Design and Implementation. The Jossey-Bass Higher and Adult Education Series*. San Francisco, CA: Jossey-Bass.

Mezirow, J. 2009. "An Overview on Transformative Learning." In *Contemporary Theories of Learning. Learning Theorists … in Their Own Words*, edited by Knud Illeris, 90–105. London and New York: Routledge.

Moberg, S., E. Muta, K. Korenaga, M. Kuorelahti, and H. Savolainen. 2020. "Struggling for Inclusive Education in Japan and Finland: Teachers' Attitudes Towards Inclusive Education." *European Journal of Special Needs Education* 35 (1): 100–114. doi:10.1080/08856257.2019.1615800.

Murawski, W. W., and C. E. Hughes. 2009. "Response to Intervention, Collaboration, and Co-teaching: A Logical Combination for Successful Systemic Change." *Preventing School Failure* 53 (4): 267–277.

Nilsson, P., and J. van Driel. 2010. "Teaching Together and Learning Together-Primary Science Student Teachers' and Their Mentors' Joint Teaching and Learning in the Primary Classroom." *Teaching and Teacher Education* 26 (6): 1309–1318. doi:10.1016/j.tate.2010.03.009.

Norwich, B. 2007. "Categories of Special Educational Needs." In *The SAGE Handbook of Special Education*, edited by Lani Florian, 55–66. London: Sage.

Oliver, M., K. Avramides, W. Clark, J. Hunter, R. Luckin, C. Hansen, and B. Wasson. 2017. "Sharing Teacher Knowledge at Scale: Teacher Inquiry, Learning Design and the Representation of Teachers' Practice." *Teacher Development* 22 (4): 587–606. doi:10.1080/13664530.2017.1381642.

Opfer, V. D., and D. Pedder. 2011. "Conceptualizing Teacher Professional Learning." *Review of Educational Research* 81 (3): 376–407. doi:10.3102/0034654311413609.

Patton, M. Q. 2015. *Qualitative Evaluation and Research Methods*. Thousand Oaks, CA: Sage.

Pesonen, H. V., A. Rytivaara, I. Palmu, and A. Wallin. 2020. "Teachers' Stories on Sense of Belonging in Co-Teaching Relationship." *Scandinavian Journal of Educational Research*. doi:10.1080/00313831.2019.1705902

Polkinghorne, D. E. 1995. "Narrative Configuration in Qualitative Analysis." In *Life History and Narrative*, edited by J. Amos Hatch and Richard Wisniewski, 5–23. London: Falmer Press.

Postholm, M. B. 2012. "Teachers' Professional Development: A Theoretical Review." *Educational Research* 54 (4): 405–429. doi:10.1080/00131881.2012.734725.

Pratt, S. 2014. "Achieving Symbiosis: Working Through Challenges Found in Co-teaching to Achieve Effective Co-teaching Relationships." *Teaching and Teacher Education* 41: 1–12. doi:10.1016/j.tate.2014.02.006.

Putnam, R. T., and H. Borko. 2000. "What Do New Views of Knowledge and Thinking Have to Say About Research on Teacher Learning?" *Educational Researcher* 29 (1): 4–15. doi:10.3102/0013189X029001004.

Quin, D. 2016. "Longitudinal and Contextual Associations Between Teacher–Student Relationships and Student Engagement: A Systematic Review." *Review of Educational Research* 87 (2): 345–387. doi:10.3102/0034654316669434.

Riessman, C. K. 2008. *Narrative Methods for the Human Sciences*. Thousand Oaks, CA: Sage.

Roorda, D. L., H. M. Y. Koomen, J. L. Spilt, and F. J. Oort. 2011. "The Influence of Affective Teacher–Student Relationships on Students' School Engagement and Achievement: A Meta-Analytic Approach." *Review of Educational Research* 81 (4): 493–529. doi:10.3102/0034654311421793.

Rytivaara, A., and A. Frelin. 2017. "Committed to Trouble: Learning from Teachers' Stories of Challenging Yet Rewarding Teacher-Student Relationships." *Teaching and Teacher Education* 68: 12–20. doi:10.1016/j.tate.2017.08.004.

Rytivaara, A., and R. Kershner. 2012. "Co-Teaching as a Context for Teachers' Professional Learning and Joint Knowledge Construction." *Teaching and Teacher Education* 28 (7): 999–1008.

Rytivaara, A., J. Pulkkinen, and C. L. de Bruin. 2019. "Committing, Engaging and Negotiating: Teachers' Stories About Creating Shared Spaces for Co-teaching." *Teaching and Teacher Education* 83: 225–235. doi:10.1016/j.tate.2019.04.013.

Rytivaara, A., and T. Vehkakoski. 2015. "What is Individual in Individualised Instruction? Five Storylines of Meeting Individual Needs at School." *International Journal of Educational Research* 73: 12–22.

Sabel, C., A. Saxenian, R. Miettinen, P. H. Kristensen, and J. Hautamäki. 2011. *Individualized Service Provision in the New Welfare State: Lessons from Special Education in Finland. Sitra Studies 62*. Helsinki: SITRA.

Saloviita, T. 2020. "Attitudes of Teachers Towards Inclusive Education in Finland." *Scandinavian Journal of Educational Research* 64: 1–13. doi:10.1080/00313831.2018.1541819.

Saloviita, T., and M. Takala. 2010. "Frequency of Co-teaching in Different Teacher Categories." *European Journal of Special Needs Education* 25 (4): 389–396. doi:10.1080/08856257.2010.513546.

Scruggs, T. E., M. A. Mastropieri, and K. A. McDuffie. 2007. "Co-teaching in Inclusive Classrooms: A Metasynthesis of Qualitative Research." *Exceptional Children* 73 (4): 392–416.

Shin, M., H. Lee, and J. W. McKenna. 2016. "Special Education and General Education Preservice Teachers' Co-teaching Experiences: A Comparative Synthesis of Qualitative Research." *International Journal of Inclusive Education* 20 (1): 91–107.

Shulman, L. S. 1987. "Knowledge and Teaching: Foundations of the New Reform." *Harvard Educational Review* 57 (1): 1–23.

Shulman, L. S., and J. H. Shulman. 2004. "How and What Teachers Learn: A Shifting Perspective." *Journal of Curriculum Studies* 36 (2): 257–271. doi:10.1080/0022027032000148298.

Sointu, E. T., H. Savolainen, K. Lappalainen, and M. H. Epstein. 2012. "Cross Informant Agreement of Behavioral and Emotional Strengths Between Finnish Students and Teachers." *Scandinavian Journal of Educational Research* 56 (6): 625–636. doi:10.1080/00313831.2011.621135.

Sointu, E. T., H. Savolainen, K. Lappalainen, and M. C. Lambert. 2017. "Longitudinal Associations of Student–Teacher Relationships and Behavioural and Emotional Strengths on Academic Achievement." *Educational Psychology* 37 (4): 457–467.

Spilt, J. L., and H. M. Y. Koomen. 2009. "Widening the View on Teacher–Child Relationships: Teachers' Narratives Concerning Disruptive Versus Nondisruptive Children." *School Psychology Review* 38 (1): 86–101. doi:10.1080/02796015.2009.12087851.

Spilt, J. L., H. M. Y. Koomen, and J. T. Thijs. 2011. "Teacher Wellbeing: The Importance of Teacher–Student Relationships." *Educational Psychology Review* 23 (4): 457–477. doi:10.1007/s10648-011-9170-y.

Takala, M., R. Pirttimaa, and M. Törmänen. 2009. "Inclusive Special Education: The Role of Special Education Teachers in Finland." *British Journal of Special Education* 36 (3): 162–173.

Takala, M., and L. Uusitalo-Malmivaara. 2012. "A One-Year Study of the Development of Co-teaching in Four Finnish Schools." *European Journal of Special Needs Education* 27 (3): 373–390. doi:10.1080/08856257.2012.691233.

Thousand, J., R. Villa, and A. Nevin. 2006. "The Many Faces of Collaborative Planning and Teaching." *Theory Into Practice* 45 (3): 239–248. doi:10.1207/s15430421tip4503_6.

UNESCO. 1994. *Salamanca Statement and Framework for Action for Special Needs Education*. Paris: UNESCO.

Van Eekelen, I. M., J. D. Vermunt, and H. P. A. Boshuizen. 2006. "Exploring Teachers' Will to Learn." *Teaching and Teacher Education* 22 (4): 408–423. doi:10.1016/j.tate.2005.12.001.

Van Veen, K., R. Zwart, and J. Meirink. 2012. "What Makes Teacher Professional Development Effective? A Literature Review." In *Teacher Learning That Matters. International Perspectives*, edited by M. Kooy and K. van Veen, 23–41. New York: Routledge.

van Velzen, C., M. Volman, M. Brekelmans, and S. White. 2012. "Guided Work-Based Learning: Sharing Practical Teaching Knowledge with Student Teachers." *Teaching and Teacher Education* 28 (2): 229–239. doi:10.1016/j.tate.2011.09.011.

Vermunt, J. D., and M. D. Endedijk. 2011. "Patterns in Teacher Learning in Different Phases of the Professional Career." *Learning and Individual Differences* 21 (3): 294–302.

Appendix 1

Questions for team interviews

Interview questions for school visits in autumn 2010

Instruction for the interviewer: All questions are to be addressed to the whole team.

How (on what grounds) did you choose your pair/team?

How is it different to collaborate with another teacher compared to collaboration with a school assistant?

Is there something that has surprised or challenged you?

What kind of role does the school principal have, for example, in the work arrangement of the special education teacher or in planning the schedule?

What kind of solutions have you used in your co-taught classes: what kinds of roles do you have/take and how do you share the responsibility within your team?

How quickly does the knowledge about students develop if you do not have prior knowledge of them?

Does the knowledge about students develop more quickly when there are two teachers in the classroom?

What have you learnt from the other teacher?

Interview questions for recorded interviews in spring 2011

Instruction for the interviewer: All questions are to be addressed to the whole team.

Tell something about your background and your work history.

Tell something about this school.

Creation of the team

How did your co-teaching begin? (On what grounds did you choose your pair/team?)

How did you prepare for co-teaching?

Retrospectively, what kinds of things were essential in preparing to co-teach? What would you do differently? Are there topics you feel that you should have talked about in beforehand?

What is your dream co-worker like?

Expectations for co-teaching

Why did you begin to co-teach? Did you have earlier experiences in co-teaching?

Classroom management and educational methods

How has co-teaching influenced the working atmosphere among the students and classroom management? What kinds of methods have you used in problematic/challenging situations?

Do you have joint principles, as a team, regarding classroom rules, and do you, as individual teachers, use similar classroom management methods?

What kinds of teaching methods have you used in your co-taught classes? Why have you chosen these very methods?

Co-planning

How do you plan your co-teaching?

Has the planning changed since you began co-teaching?

What has it been like to plan teaching together?

Interaction between teachers: roles and experiences

How do you co-teach in practice?

How do you share the responsibilities for various tasks and activities?

How do you feel about your collaboration?

Do you think that co-teaching has been useful?

Has co-teaching had influence on students? If yes, what kind of influence?

What kinds of methods/activities have you used in evaluating your work?

Support for schooling of students with special educational needs

How does co-teaching support the students with special educational needs?

Appendix 2

The instructions for teachers for writing the diary

Write at least once a week and at least 1–2 pages. You can write, in the form of your choice, about the events, team work and your feelings during the week. The idea of the diary is that you will describe the work of your co-teaching team each week.

In your diary, you can reflect on, for example:

– Your own role
– Feelings concerning team work. What kinds of things do you consider/find as nice or as difficult?
– Activities in and out of classroom (teaching, planning, and other things)
– In which issue you succeeded and in which there is a need for improvement?
– The meaning of co-teaching for students.

You can also reflect on other themes. You can choose whether you would like to write about many different topics or if you preferred to focus on, for example, some certain event or describing the co-teaching project you have carried out.