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Teachers' and parents' beliefs about effective teaching and their assumptions on the other group's perspective

Abstract

One way teachers show professionalism in their interactions with parents is by having knowledge of and reflecting the parents' perspective on what constitutes effective teaching and learning. These assumptions guide teacher-parent communication. This article compares the beliefs about teaching – concerning teacher-oriented and learner-oriented beliefs – that are held by teachers and parents; it also compares how each group anticipates the perspective of the other group. Teachers (N = 15) and parents (N = 92) first gave their own viewpoints on what constitutes effective teaching approaches by responding to a specially adapted version of the ATI-R, a 22-item inventory assessing, on two different scales, teacher-oriented and learner-oriented beliefs about teaching. Additionally, all participants answered an open question about what they anticipate the other group (teachers or parents) thinks about issues of teaching and learning in primary schools. The answers to this question were content analyzed. Results showed systematic variations in the beliefs about teaching between parents and teachers. The discussion points out that explicit knowledge of these systematic differences is relevant for teacher-parent communication – not as a topic to be discussed directly between them, but as an underlying aspect that influences communication about teaching and learning in schools. Results are further discussed with regard to the applicability of ATI in a primary school context.

Keywords

Approaches to teaching; Perspective taking; Teacher-parent communication

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Sichtweisen von Lehrkräften und Eltern auf guten Unterricht und ihre Erwartungen an die Sichtweise der jeweils anderen Gruppe

Zusammenfassung

Lehrerprofessionalität beinhaltet Fachwissen und Reflexion über die Perspektive von Eltern zum Gegenstand Lehren und Lernen. Solche Überlegungen leiten die Kommunikation mit Eltern. In diesem Artikel werden zwei Sichtweisen auf Lehren und Lernen verglichen: (a) Die lehrenden-/inhaltsorientierte Sichtweise und (b) die lernendenorientierte Sichtweise. Für beide Sichtweisen wurde empirisch die Ausprägung bei Lehrkräften (N = 15) und Elternteilen (N = 92) erhoben. Dazu wurde eine an die Befragung von Lehrkräften und Eltern adaptierte Version des revidierten Approaches to teaching Inventory (ATI-R) verwendet. Der ATI-R misst die beiden unterschiedlichen Sichtweisen auf zwei Skalen mit einem 22 Items umfassenden Fragebogeninventar. Ergänzend wurde in der Eltern-Stichprobe die Fremdperspektive durch eine offene Frage dazu, was guten Unterricht in der Grundschule ausmacht, erhoben. Die Antworten wurden inhaltsanalytisch ausgewertet. Die Ergebnisse zeigen systematische Unterschiede in den Sichtweisen der beiden befragten Gruppen. In der Diskussion wird ausgeführt, dass Wissen über diese Unterschiede für die erfolgreiche Kommunikation mit Eltern für Lehrkräfte wichtig ist: nicht nur als unmittelbar relevantes Hintergrundwissen, sondern auch als Hintergrundannahme in jeder Interaktion mit Eltern. Zudem wird die Übertragbarkeit der Erfassung von Lehransätzen mit dem ATI-R für die Schule diskutiert.

Schlagworte

Lehrorientierungen; Perspektivenwechsel; Lehrer-Eltern-Kommunikation

1. Introduction

Teacher-parent communication (TPC) is an important part of teachers' professional lives (Gartmeier, 2017). It involves high-level knowledge and in-depth reflections of the communication partners' perspective (Bromme & Jucks, in press). Competencies that are important in TPC, such as diagnosing a parent's perspective, adjusting one's choice of words accordingly, and engaging in facework (Brummernhenrich & Jucks, 2013; Jucks & Bromme, 2011) all presume knowledge about a parent's perspective and about the differences between one's own and a parents' perspective.

Knowledge about teachers' and parents' perspectives on teaching, therefore, constitutes a relevant field of research whose findings can be implemented in teacher trainings on TPC. Frequent reasons for a formal parent-teacher conversation are students' learning difficulties and performance deficits. Conversations

on such topics are often accompanied by a critical reflection on the teaching and learning processes. However, when it comes to these processes, teachers and parents hold systematically different perspectives on what teachers are supposed to do in the classroom (cf. Armstrong, 2009). Failure to consider these possibly incongruent beliefs about effective teaching and learning and approaches to teaching in parent-teacher conversations can lead to mutual misunderstandings or even accusations regarding, for example, responsibilities for the learning process. Therefore, this article aims to shed light on teachers' and parents' beliefs about effective *approaches to teaching* and their assumptions about each other's perspective in the context of elementary school.

Compared to higher educational contexts, parental involvement, including teacher-parent contacts, has been shown to be more prominent in elementary school (Izzo, Weissberg, Kaspro, & Fendrich, 1999). Also, up to now, the framework of approaches to teaching (Trigwell, 2012; Trigwell & Prosser, 1996; Trigwell, Prosser, & Ginns, 2005) has only been applied to higher education and secondary school contexts, not elementary schools (see Beusaert, Segers, & Wiltink, 2013; and e.g., Prosser & Trigwell, 2014; Rosário, Núñez, Valle, Paiva, & Polydoro, 2013). Therefore, applying this framework in an elementary school context promises interesting insights into how the approaches to teaching contribute to TCP.

In the following, we describe perspective taking as a central competence for professionalizing teacher-parent conversations and derive from previous research possible differences between teachers' and parents' perspectives on teaching. Then, we will describe an empirical approach to assessing teachers' and parents' perspectives on teaching that adapts a widely used inventory for assessing perspectives on teaching within higher education to the elementary school learning context. We then describe our study, in which we surveyed teachers and parents on their views about effective approaches to teaching as well as their assumptions about the other group's perspective. Finally, we discuss the applicability of the instrument in elementary schools and implications for training teachers' communication skills.

2. Theoretical background

2.1 Perspective taking in teacher-parent communication

Teachers and parents hold systematically different perspectives on the individual child and on what teachers have to do in the classroom (see Armstrong, 2009; Gartmeier, Bauer, Fischer, Karsten, & Prenzel, 2011). Because of their pedagogical education, teachers are most often the experts (and conversational leaders) in communication situations dealing with educationally relevant issues and decisions (Jucks & Brummernhenrich, 2016). Therefore, TPC can be viewed as communication between an expert and a layperson (Gartmeier et al., 2011). Within this framework, perspective taking is a central competency: Teachers have to anticipate

differences in perspectives to be able to adjust their communication accordingly (Bromme & Jucks, in press).

Therefore, gaining explicit knowledge about the particular differences in teachers' and parents' perspectives on each other's expectations about how effective teaching is performed can be regarded as an important step towards training teachers to handle teacher-parent conversations constructively.

2.2 Teachers' perspective on teaching

Teachers are the pedagogical experts who are educated in state-of-the-art pedagogical principles. Their belief structures – subject of much previous research – include beliefs about the self, the environment (including their relationship to parents), content, teaching practices, and teaching approaches (Fives & Buehl, 2012). They are considered to frame problems and tasks and thereby impact on actions (Fives & Buehl, 2012). Research shows that teachers tend to take either a constructivist holistic approach to teaching, that is, student-centered teaching for learning, or a transmission approach, that is, teacher-centered instruction with the goal of knowledge transmission (e.g., Kember, 1997; Kember & Kwan, 2000; Postareff & Lindblom-Ylänne, 2008). Currently, constructivism is the dominant theory of learning. It includes the teacher being a facilitator for the students' learning process and stimulating students to adopt a deep approach to learning through, for example, cooperative, active, and autonomous learning (Beusaert et al., 2013; Hermans, Tondeur, van Braak, & Valcke, 2008; Postareff & Lindblom-Ylänne, 2008). Research has shown that a teacher's constructivist student/learning approach positively impacts student learning and achievement (e.g., Staub & Stern, 2002). Note that a long-standing debate exists on the content, dimensionality, and impact of teachers' beliefs in general and on beliefs about teaching and learning (for overviews on these see, e.g. Fives & Buehl, 2012; Lübeck, 2009). This study does not address this in detail.

To measure the two types of approaches to teaching, the Approaches to Teaching Inventory (ATI-R; Trigwell, Prosser, & Ginns, 2005; German translation by Lübeck, 2009) questionnaire that contains different scales for an *information transmission/teacher focused (ITTF)* approach and a *conceptual change/student focused (CCSF)* approach to teaching. Although it was originally developed in the context of higher education, it has successfully been adapted within other school contexts: Beusaert et al. (2013) adapted the concept of higher education approaches to teaching to secondary education and confirmed the association between teaching and learning approaches as perceived by students. Rosário et al. (2013) also used the concept of approaches to teaching to investigate the impact of contextual and teacher variables in schools. However, to our knowledge, this concept has not yet been adapted to the context of elementary school.

2.3 Parents' perspective on teaching

Turning to the parents, their perspective on teaching clearly differs from teachers'. Many parents still imagine classrooms in which students sit in neat rows of desks facing the front of the room, where the teacher gives lectures to the students (Armstrong, 2009). Such parents advocate for the traditional teaching practices with which they were familiar (Shumow, 1997; Peixoto, 2011) instead of more progressive teaching and learning methods such as constructivist teaching and self-determined learning (Haney, Lumpe, & Czerniak, 2003). This idea that parents might hold more teacher-centered beliefs about teaching is supported by Ng and Rao (2008, cited in Fives & Buehl, 2012) who found that teachers feel pressured by parents to teach the full curriculum and to ensure that students achieve a high level of competence. This mirrors the parents' clear expectations that their children need to be prepared for further education on a content curriculum level. Further research indicates that parents' attitudes toward effective teaching might change over their children's span of scholarly education (Shumow, 1997). However, these findings are mixed. On the one hand, parents seem to accept constructivist teaching approaches in pre- and early school but then favor more traditional content-centered approaches for later schooling. On the other hand, they have gained a better understanding and acceptance of more "innovative" teaching approaches as a result of their own experiences at school (see Shumow, 1997 for an overview).

Those various strands in previous research indicate clearly that there are differences between teachers' and parents' perspectives on teaching. However, there is a lack of research providing a direct comparison of both perspectives. Therefore, in the following, we describe how we applied the concept of approaches to teaching derived from higher education research to compare teachers' and parents' perspectives.

2.4 Rationale & hypotheses

The present study aims to compare teachers' and parents' perspectives on teaching by adapting the concept of approaches to teaching to the elementary school context. We assumed that due to their extensive pedagogical training and the currently dominant theory of student-oriented teaching for constructivist learning, teachers would show a lower teacher focus and a higher student focus than parents. For the parents, their own school experiences of more traditional teaching methods and more direct instruction as well as their view about teachers as the ones in charge of teaching with the students' activity during teaching, that is, the process of active learning, not being as present, will guide their assessment of effective teaching. We therefore state the following hypotheses:

- (1.a) Parents will show higher values on the ATI-R teacher focus (ITTF) scale than teachers.

(1.b) Parents will show lower values on the ATI-R student focus (CCSF) scale than teachers.

To further assess how teachers' and parents' assumptions about each other's views on effective teaching differed, we performed a content analysis of answers to an open-ended question addressing this. For this, we hypothesize the following:

(2.a) Teachers will assign more teacher-focused aspects to the parents' perspective than parents will accredit to the teachers.

(2.b) Parents will in turn ascribe more student-focused views about good teaching to the teachers than teachers will assign to the parents.

3. Methods and procedure

3.1 Participants

A total of 96 parents (parental units) and 16 elementary school teachers from two elementary schools (Grades 1 to 4, children's approximate age: 5 to 10 years; overall response rate: 47 %) completed a paper-and-pencil questionnaire. The response rate in the teacher group was slightly lower than in the parent group (41 % versus 49 %, respectively). Teachers were approached personally in their faculty room after their principal's permission was obtained. Teachers were informed about the aim of the study, which was to compare teachers' and parents' beliefs about teaching, and the survey was presented directly after this. Due to missing values (more than one missing value for at least one of the ATI-R subscales), four parental and one teacher questionnaire had to be excluded from the analyses.

The remaining 15 teachers had an average of 13.70 years teaching experience ($SD = 9.42$). All were female. They were aged from 25 to over 50 years with one-third indicating an age above 50. All but two teachers reported being responsible for a single class. One of the other two indicated that she was not a class teacher but a subject teacher; the second one did not answer this question. Regarding their teaching subjects, 80 % of teachers taught German; 73 %, math; 47 %, *Sachunterricht* (a combination of history, geography, and natural science); 20 % each taught English, religion, or arts; 13 %, sports; and 7 %, music.

Of the 92 remaining parents, 83 % were female and most (83 %) were older than 35 years, 5 % indicated an age between 25 to 30, 11 % between 30 and 35, and one person did not specify either age or gender. Regarding their highest educational achievement, 45 % reported a university entrance qualification (*Abitur* or *Fachabitur*); 29 % had a basic or intermediate school leaving certificate; 20 % had a university degree; and 7 % did not answer this question. Furthermore, 14 parents (15 %) reported having children up to the age of 7 years, 75 (82 %) had older children, and three (3 %) gave no information on their children.

A comparison of gender proportions revealed no significant difference between teachers and parents, $\chi^2(1, N = 104) = 2.50, p > .05$.

3.2 Design and materials

Teachers were shortly introduced to the study's goal (comparing teachers' and parents' perspectives on teaching) in the staff room before the questionnaire was delivered. Teachers handed out the parents' questionnaires to the children, who took them home in an envelope that often contains materials for parents. The parents of future 1st-grade classes recruited in one of the schools were handed the questionnaires by the headmaster during a parent-teacher conference. Two weeks later, the filled-in questionnaires were re-collected from schools.

Along with an accompanying letter, participants received the Approaches to Teaching Inventory (ATI-R; Trigwell et al., 2005, German translation by Lübeck, 2009) and were also asked to answer an open-ended question and give some demographic information.

3.3 Dependent measures

3.3.1 Materials

The ATI-R was originally developed from phenomenographic research in the context of higher education. It measures intentions and strategies associated with an information transmission *teacher focus* (ITTF, e.g., "In this subject, students should focus on studying what the lecturer provides them with") and a conceptual change *student focus* (CCSF; e.g., "I see teaching as helping students develop new ways of thinking in this subject") approach to teaching. Each scale contains 11 items resulting in a total of 22 items. Compared to other frameworks on teachers' instructional beliefs, for example, Peterson, Fennema, Carpenter, and Loeff (1989), the ATI-R is not limited to a certain subject or topic and operationalizes the approaches on two scales instead of using one bipolar continuum. This makes it possible to identify the degree to which participants agree with both approaches. Our experiences with ATI-R as a survey are quite positive, e.g. the instrument is sensitive to differences in groups and participants value the ATI-R items (Päuler-Kuppinger & Jucks, 2017; Päuler & Jucks, 2013).

In this study, we adapted the wording of ATI-R items in order to fit the context of elementary school classes. Rewording only addressed the perspectives of our participants, e.g. we rephrased the item "In this subject, students should focus their study on what the lecturer provides them with" into "In class, students should focus their study on what I provide them with" for school teachers. For the parents, the first-person version was replaced by "the teacher." Participants rated the items on the typical ATI-R 5-point scales ranging from 1 (*almost never*) to 5 (*almost always*). Internal consistencies were satisfactory with Cronbach's α for ITTF scale of .75 (in both groups) and for CCSF scale $\alpha = .76$ in the parent group and $\alpha = .80$ in the teacher group.

3.3.2 Category system for open-ended question

After filling in the ATI-R, participants were asked to answer one open question tapping the perceived factors and indicators of effective teaching. This asked them to report their perspective on the other group's view about good teaching: "From your perspective as a teacher/parent, what do parents/teachers think works well when teaching and learning in elementary school?"

The open answers were coded by two raters applying a combined inductive and deductive approach to content analysis (Mayring, 2010). First, aspects were separated using syntactic and semantic markers (Chi, 1997; interrater reliability: $\alpha = .94$, Krippendorff, 2004). One rater went through all the data and identified indicators for the two teaching orientations as well as any additional categories that emerged. In total, seven categories were identified and further discussed with the second rater. Of the seven categories for the mentioned factors and indicators for effective teaching and learning, two could be aligned to the previously surveyed approaches to teaching:

- *Teacher focus/teacher activity* (TF) referred to Kember's (1997) teacher-/content-oriented conception of teaching and included all aspects concerned with basic knowledge transmission and the teacher's competencies with regard to this main function of transmitting knowledge in a rather teacher-centered, frontal way. Aspects that focused on the learning outcomes, such as examination marks were also coded in this category (Kember & Kwan, 2000).
- *Student focus/student activity* (SF) referred to Kember's (1997) student-/learning-oriented conception of teaching and contained those aspects that reflected an activation of students; corresponding didactic methods; and a focus on the (individual) student, their needs, and learning processes (e.g., expansion of competencies, self-dependence). Aspects that focused on a positive atmosphere in the class were also coded in this category.

The other five categories included parent activities/parent characteristics, teacher-parent cooperation, family's surrounding conditions, school's surrounding conditions, and a residual category for all aspects that could not be coded in any of the other categories. The two raters then independently coded one third of the data (Krippendorff's α between .97 and 1.00). Because interrater reliability proved to be very good, one rater rated the rest of the data.

4. Results

Preliminary analyses revealed that parents' data of the ITTF subscale and the number of mentioned aspects within the open answers were non-normal. Therefore, we applied nonparametric alternatives to analysis of variance (Mann-Whitney U test, Kruskal-Wallis test) and checked results for differences to the parametric analyses.

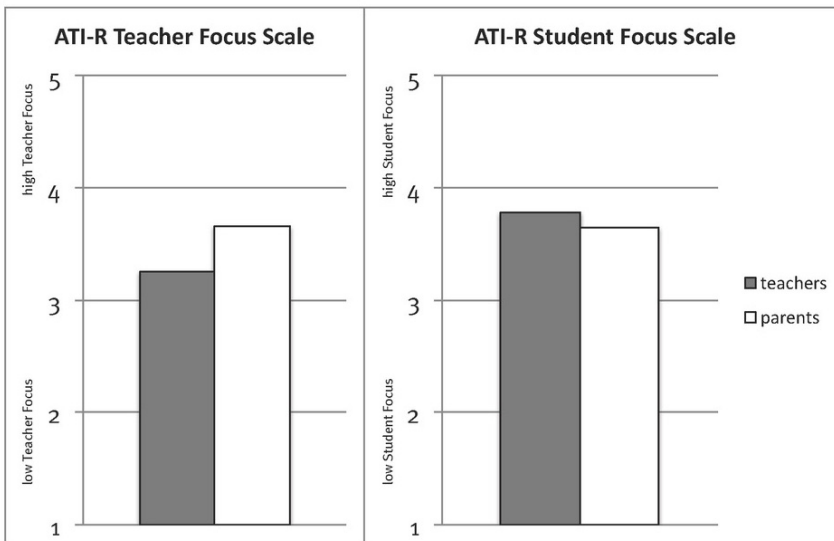
Because results did not differ in direction and significance, we report the parametric statistics for the sake of comparability and clarity.

The data from the content analyses did not constitute continuous variables, but proportions calculated from the number of aspects assigned to particular categories divided by the total number of aspects mentioned by the participant. Therefore, these data were analyzed with Dirichlet regression modeling for compositional data (Gueorguieva, Rosenheck, & Zeltermann, 2008; Hijazi & Jernigan, 2009). The regression model consisted of the proportions of coded categories ($n = 7$) for the complete answers as criterion. Group (teacher vs. parent) and the ATI scale values were included as predictors.

4.1 Results from ATI-R

Teachers' answers to the ATI-R ranged from a minimum scale value of 2.10 to a maximum of 4.10 for the Teacher Focus scale ($SD = 0.59$) and from 2.82 to 4.78 for the Student Focus scale ($SD = 0.54$). Parents ranged between 2.27 and 4.82 for the Teacher Focus scale ($SD = 0.54$) and 2.18 and 4.73 for the Student Focus scale ($SD = 0.52$). Mean values of both scales for the two groups are presented in Figure 1. Parents showed a higher Teacher Focus than teachers, $F(1, 105) = 7.08$, $p = .009$, $\eta_p^2 = .06$ ($U = 431.00$, $z = -2.33$, $p = .020$) which is in line with hypothesis 1.a. The difference on the Student Focus scale did not reach statistical significance, $F(1, 105) = 0.80$, $p > .05$. Hypothesis 1.b therefore could not be confirmed. The correlations between the two ATI scales for the two groups were $r = .31$, $p = .003$ for parents and $r = -.08$, $p > .05$ for teachers.

Figure 1: Mean values of the ATI-R scales for teachers and parents



4.2 Open question: Factors and indicators of effective teaching

In total, teachers and parents mentioned 336 aspects addressing factors and indicators of effective teaching (additionally, 20 aspects were coded with *rest*). Teachers mentioned an average of 3.73 ($SD = 2.71$) and up to 11 aspects; parents, an average of $M = 3.26$ ($SD = 2.78$) and up to 13 aspects. No statistically significant difference between the two groups was found for the number of aspects mentioned, $F(1, 107) = 0.38, p > .05$ ($U = 610.50, z = -0.72, p > .05$). Table 1 reports total and relative numbers of aspects within the coded categories.

Only parents mentioned the categories *parent activity/characteristics* and *family surrounding conditions*. For both groups, one-half of the mentioned aspects fell into the *student focus/student activity* category. Regression analyses of the proportions of the content categories showed that teachers proportionally mentioned more aspects of *teacher focus/teacher activity* as being important for parents than parents mentioned them to be important for teachers, $b^* = -0.82, z = -2.48, p = .013$. This is in line with hypothesis 2.a. Also, the higher the ATI-R Teacher Focus scale value was, the higher the proportion of *teacher focus/teacher activity* aspects within the open answers, $b^* = 0.30, z = 2.53, p = .011$. No significant association was found for the ATI-R Student Focus scale values, $b^* = -0.12, z = -1.22, p > .05$. Hypothesis 2.b therefore could not be confirmed. No significant effects of group or ATI-R scale values were found on the other categories, all absolute values of $b^* < \pm 0.17$, all absolute values of $z < \pm 0.54, p > .05$.

Table 1: Total and relative numbers of aspects within the coded categories

Dependent Variable	Teachers (n = 15)		Parents (n = 92)	
	M (SD)	Number of aspects (proportion)	M (SD)	Number of aspects (proportion)
Number Cat. TF	1.35 (1.15)	19 (34 %)	1.12 (1.16)	83 (28 %)
Number Cat. SF	2.00 (2.39)	28 (50 %)	1.97 (1.70)	146 (49 %)
Number Cat. PA	-	0 (0 %)	0.24 (0.66)	18 (6 %)
Number Cat. TP	0.21 (0.58)	3 (5 %)	0.13 (0.45)	10 (3 %)
Number Cat. FS	-	0 (0 %)	0.05 (0.47)	4 (1 %)
Number Cat. SS	0.14 (0.36)	2 (4 %)	0.31 (1.11)	23 (8 %)
Number Cat. Res	0.29 (0.61)	4 (7 %)	0.22 (0.69)	16 (5 %)

Note. TF = Teacher Focus/Teacher Activity. SF = Student Focus/Student Activity. PA = Parent Activity/Characteristics. TP = Teacher-Parent Cooperation. FS = Family Surrounding Conditions. SS = School Surrounding Conditions. Res = Rest.

5. Discussion

Two results contribute to our understanding of perspectives on teaching held by teachers and parents in elementary school settings: (a) Parents show a higher teacher focus than teachers and, (b) teachers assume this when they are asked to take the parents' perspective. This indicates first, that systematic differences between parents and teachers exist and that the ATI-R is able to identify them. Second, the fact that teachers are aware of these differences is a valuable basis for teacher education: This is consistent with our expectations and a topic that might be addressed directly in TPC.

Presumably, parents activate their own experiences of being an elementary school student and expect teaching to be much more teacher focused than it actually is. These differences in perspectives on teaching represent a background information that teachers need to address when communicating with parents. Knowledge about these different perspectives on and beliefs about teaching and the teacher's role can help teachers to understand criticism correctly and address the parents' informational needs adequately.

In this regard, it is important to take the results of our study as a hint regarding this substantial difference. Because teachers share most of their interactions with only some of the parents, it can be assumed that "parents who participate in decision-making roles are not necessarily representative of all parents" (Shumow, 1997, p. 205). Hence, it is important to gain some reliable information on differences in perspectives from time to time. These data might even serve as an opportunity to engage in TPC.

The fact that only our hypotheses on the teacher focus could be confirmed, whereas results on the student focus did not become significant, indicates that the teacher focus, the traditional and instructional approach to teaching, is the approach that polarizes more. Presumably, the teacher-focused approach to teaching is less complex and easier to grasp, therefore a personal opinion about this approach might be easier to form than for the student-focused approach. This would be in line with previous studies that concluded that the student-focused approach to teaching can be regarded as a more complete approach, including aspects of the teacher focused approach (Postareff & Lindblom-ylänne, 2008; Trigwell, Prosser, & Ginns, 2005).

Up until now, the ATI has only been applied within higher education and secondary school contexts. Generally, our results indicate that an application in a primary school context is possible. Only a few participants commented on the survey that they felt the items did not fit their experience. Interestingly however, the correlation between scales show a medium-sized and positive correlation for the two scales within the parent group. This contradicts previous studies that report negative correlations (also mostly medium-sized) between the two scales (see Lübeck, 2009 for an overview). The positive direction of the correlation might indicate that when parents answered the items, they made fewer distinctions between

a teacher-focused and a student-focused approach to teaching, but instead indicated their perception of teachers' activities (either learning- or content-focused) per se. Thereby, the ATI might not have mirrored differential perspectives on teaching but rather on the teacher. However, the correlation of .31 is medium-sized, showing that parents clearly differentiated between assuming teachers have a teacher-focused or student-focused approach to teaching. Therefore, parents somehow still differentiate the approaches or activities, respectively. Interpreted slightly differently, the positive correlation could also indicate that the student-focused approach might indeed include the teacher-focused approach. Thereby, the two approaches would not contradict each other, and effective teachers would not show only one approach but would integrate both approaches according to different teaching phases and matters of appropriateness for the students' learning. Further research is needed to illuminate how parents perceive the items of the ATI, what parents' beliefs are about effective teaching, as well as what the relationship is between the two approaches. For the teacher group, no significant correlation between the two ATI scales was found. This, however, is probably due to the small sample size, and further research needs to examine possible differences of scale characteristics according to various educational contexts. Using surveys to measure approaches to teaching can be regarded as a fruitful approach in doing so.

Acknowledgements

We thank Celeste Brenneka for language editing and Lena Erhardt for help with data collection as part of her master thesis. Furthermore, we are thankful to Dr. Martin Gartmeier who serves as Guest editor of this special issue, the editors of JERO as well as the anonymous reviewers that helped us in improving our paper.

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