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Exploring changes in collaboration through the professionalisation of learning and support assistants: a mixed methods study

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ABSTRACT

The inclusion of all children in regular classrooms is an important aim in many European countries. For the implementation of inclusion some children rely on support via learning and support assistants. Despite the benefits assistants provide by enhancing student access and progress, assistants' support has also been criticised for contributing to more exclusive than to inclusive processes in class. A necessary precondition for enhancing inclusive processes is the assistants' extension of professional knowledge and competence. This study aims to evaluate the effects of a developed online tool for assistants' professionalisation on the collaboration with teachers and parents. Moreover success factors in assistants' work are identified. The quantitative study sample consisted of 70 assistants, teachers and parents. Focus group interviews with nine assistants and teachers were also conducted. The results of this mixed methods study showed that assistants, teachers and parents have a tendency to evaluate their collaboration more positively after assistants have made use of an online tool for professionalisation. All of them perceived the regular exchange of information to be particularly important. The results of this study also showed that clear definition of the roles and responsibilities of assistants is necessary if they are to work successfully in schools.

KEYWORDS

Multi-professional collaboration; professional development; inclusive education; mixed methods design

1. Introduction

The term 'inclusion' refers here to the belief that children and youth are to be included in all social activities, and be free to engage in intensive and self-determined social contacts and friendships, regardless of illnesses, impairments or disabilities (Little et al. 2020; Grosche 2015; United Nations 2006; Ainscow, Booth, and Dyson 2006). In order to reduce the risk of excluding children and youth with disabilities from mainstream classrooms, paraprofessionals, or so-called learning and support assistants, provide support to students, for example, by helping with student learning activities, emotional regulation and basic care (Breyer, Lederer, and Gasteiger-Klicpera 2020; Butt, 2016; Giangreco, Suter, and Doyle 2010). However, such direct support of students with disabilities does have certain

drawbacks. Despite the positive effects of assistant support, such support has also been found to impair student academic development and independence (Schindler 2019; Webster et al. 2010). In addition, close support by assistants can hamper age-appropriate peer interactions and strengthen barriers to social inclusion (Schulze 2017; Lindmeier and Ehrenberg 2017).

The successful collaboration between all pedagogical staff is a key factor in preventing such negative effects on the development and social inclusion of students with disabilities. Successful teamwork can have a positive impact on learning success and on the quality of education of all students (Paju et al. 2022; Nilholm and Göransson 2017; Biggs et al., 2016). A process of regular exchange and collaboration between assistants and teachers improves assistants' perceptions of their work (Meyer 2017). Teachers also perceive collaboration with assistants as being socially supportive and reducing their workload (Meyer, Nonte, and Willems 2017; Webster et al. 2010). Various factors contribute to successful collaboration between teachers and other school staff, with mutual appreciation, positive communication between team members, and a joint commitment to teamwork all being essential (Krammer et al. 2018; Meyer 2017; Biggs et al., 2016). It has also been found that establishing supportive collaboration in the school team requires that all members obtain the relevant skills and competences in further training (Krammer et al. 2018) and that the persons involved agree clearly on their respective roles and responsibilities in everyday school life (Paju et al. 2022; Brown and Stanton-Chapman 2017; Butt and Lowe 2012). Research has also shown that regular informational exchange concerning lessons, and children's support possibilities and needs is particularly significant for teachers and assistants (Meyer 2017; Biggs et al., 2016).

However, these requirements are often not met in practice. In Austria, for example, assistants' time schedules do not foresee time for engaging in exchange with teachers or other professionals. As a consequence, they have rather limited possibilities for exchange, reflection, or joint lesson planning with teachers (Breyer, Lederer, and Gasteiger-Klicpera 2020). Also in Germany, successful cooperation is rarely carried out because of disagreements between assistants and teachers due to unclear roles (Henn et al. 2019). As a result, the quality of collaboration between teachers and assistants depends often on the willingness of the actors involved and, in particular, on their willingness to engage in such activities outside their paid hours of work (Henn et al. 2019; Sheehey, Wells, and Ogata 2018).

The situation regarding collaboration between parents and assistants is very similar. Despite parents' strong desire for dialogue and communication, assistant time schedules allocate no time to informational exchange or collaboration with parents (Leibetseder 2017). There is thus a clear expectations gap between parents and assistants concerning how and when information is to be shared. This lack of exchange is problematic for all participants since the experience gained by parents when dealing with their children could be of great help to assistants (Leibetseder 2017). Furthermore, the relative lack of communication between assistants and parents is likely to induce disagreement concerning educational methods and may thus lead to parents' dissatisfaction with the assistants' work. Thus, the important successful cooperation between parents and assistants is increasingly difficult. All these challenges serve to raise the level of uncertainty regarding the proper role of assistants. In addition, the assistants' lack of domain-specific knowledge and of collaborative competences is also unlikely to ease the collaboration process (Sheehey, Wells, and Ogata 2018).

Research has shown that in addition to teacher competence, the knowledge and competence of assistants with respect to inclusive education are also important in ensuring successful collaboration. This entails numerous aspects, for example, possessing the necessary skills for supporting children with disabilities, establishing a professional relationship with those supported, achieving a correct balance between proximity and distance in daily work, and possessing the pedagogical knowledge needed to support student learning and encourage interaction between all students. All these factors influence the success of inclusion activities in schools (Böing 2017).

Although specific knowledge and competences are necessary for supporting the students and for ensuring professional collaboration, in Austria or Bulgaria, as well as in many other countries, no legal qualifications are required to work as an assistant and the possibilities of in-service training are quite limited (Breyer, Lederer, and Gasteiger-Klicpera 2020). In practice, this often means that assistants perceive themselves as being insufficiently prepared or qualified for working with students with disabilities. Thus, as has already been highlighted in several international studies, there is a considerable need for the qualification and training of assistants (Breyer, Lederer, and Gasteiger-Klicpera 2020; Webster et al. 2010; Bacher et al., 2007).

Based on these findings, the objective of the Erasmus+ project 'Improving Assistance in Inclusive Educational Settings II' (IMAS II), under Grant, [2018-1-AT01-KA202-039302], (2018–2021), was to develop a web-based open access tool for the professional development of assistants. This tool, now described below, aims to strengthen assistants' knowledge about inclusive education and their competences in supporting students' learning and development. It gives an insight into important aspects of staff collaboration in school and provides strategies for professional communication within a team.

The online tool was developed from 2018 to 2020 in cooperation with universities and social service providers from Austria (University of Graz, Chance B), Slovakia (University of Trnava, TENENET), Portugal (Center for Social Studies, ARCIL), Bulgaria (Agency Vision), and Great Britain (CSIE), together with the European Association of Service providers for Persons with Disabilities (EASPD). It contains five so-called 'knowledge boxes' that address five topics: 'Cognition and Learning', 'Communication and Interaction', 'Emotions and Behaviour', 'Physical and Sensory Impairment', and 'Disabled Children's Rights in Education'. The last box, on disabled children's rights, is of a more general nature and covers content on inclusive education as well as basic information about the roles, responsibilities and tasks of assistants. One specific aspect addressed in this knowledge box is multi-professional collaboration in schools. Useful tips and practical advice on effective and successful teamwork are also provided (for more information about the concept and the contents of the five knowledge boxes, see Lederer, Breyer, and Gasteiger-Klicpera 2020; Breyer and Gasteiger-Klicpera 2020).

1.1. AIM and research questions

Since the knowledge boxes are intended to improve collaboration between teachers and assistants, the question arises as to what extent this may be achieved via the competences so acquired. To address this issue, a mixed methods study was employed to explore the quality of collaboration between assistants and teachers, as well as that between assistants and parents, following their use of the knowledge boxes. The perceived changes by

assistants, teachers and parents in their collaboration as well as changes in the support of the children after assistants have learned with the knowledge boxes are examined. Additionally, those factors perceived by teachers and assistants as being important for success were also collected. The findings are intended to help identify the relevant strengths and weaknesses in the organisation and implementation of assistance service, and thus enable us to see how the quality of support for students with disabilities may be improved.

The following research questions were addressed in the present paper:

How do teachers, parents and assistants describe their experience of collaboration?

- *How do teachers, parents and assistants perceive multi-professional collaboration following assistants' use of online knowledge boxes?*

What do teachers and assistants see as being the crucial conditions for success of assistants' work?

2. Method

The research described here was part of a larger evaluation study with respect to the effects of the five web-based knowledge boxes developed within the Erasmus+ project IMAS II.

2.1. Data collection and procedure

After the development of the knowledge boxes, assistants in five European countries engaged in study activities using the online tool. The project partners contacted several assistants, teachers and parents and provided them with a short overview of the knowledge boxes, a link to the online tool, and a short introduction to the study. From November 2020 to February 2021, 127 assistants used the knowledge boxes and implemented the skills gained in their practical work in school (at least as far as it was possible during the Covid-19 pandemic). In February 2021, a hyperlink to the online survey was sent to all participants by email.

In addition to the quantitative survey, two online focus groups were conducted. One focus group was held with experienced and trained assistants from Styria, a federal state of Austria, and the second one with Styrian teachers. In using this mixed methods design we aimed to get more detailed information on the collaboration between assistants and teachers and its success factors (Kuckartz 2014).

It is important to keep in mind that during the evaluation phase 2020/2021 many people were strongly affected by the Covid-19 pandemic. For this reason, the focus groups were conducted solely in Austria and no focus group interview with parents and teachers from other countries was possible. As many schools in Europe were closed, we also had clear differences in the response rates across the different countries.

2.2. Sample

The sample consisted of five groups. We collected quantitative data (via online questionnaires) from assistants, teachers and parents and qualitative data (via interviews) with assistants and teachers.

2.2.1. Quantitative data

The online questionnaire was answered by 48 assistants (41 women, and by 7 persons who did not state their gender). Of these, 15 were from Bulgaria, 10 from Austria, 17 from Portugal and 6 from Slovakia. The assistants were on average 43 years old ($M = 43.02$; $SD = 11.70$). The youngest assistant was 23 years old and the oldest 63 years old. 54.2% of the respondents had been working as an assistant for more than four years.

The online questionnaire for teachers working with trained assistants was completed by 9 participants. 8 were from Portugal and 1 from Austria. The teachers were between 32 and 52 years old ($M = 45.89$; $SD = 6.51$). 8 persons were female and 1 person was male.

The online questionnaire for parents of children supported by an assistant in school was answered by 13 people (6 from Portugal and 7 from Bulgaria). 8 respondents were female and one was male (4 did not answer this question). The parents were between 33 and 48 years old ($M = 42.22$; $SD = 5.99$). From those parents surveyed, data were also collected on the children supported. Two of the children were female, 11 were male, and they were, on average, 8 years old ($M = 7.77$; $SD = 4.44$). The children receiving support by an assistant for between 0 and 14 years ($M = 3.85$; $SD = 4.18$).

2.2.2. Qualitative data

All three assistants interviewed were female and between 37 and 47 years old ($M = 43.33$; $SD = 5.51$). Two of the interviewees worked in elementary schools and one in a middle school. They had been working in this field from 1 1/2 years to 5 years ($M = 3.17$; $SD = 1.76$) and supporting one to three children at school.

All of the four interviewed teachers were female. Three teachers were teaching at a middle school and one teacher at an elementary school.

2.3. Development and description of the instruments

Quantitative instruments: The three questionnaires for assistants, teachers, and parents assessed the degree of collaboration, the factors regarded as important for inclusion, and how the significance of these factors changed after assistants had made use of the knowledge boxes.

2.3.1. Questionnaires for assistants and teachers

'Collaboration between assistants and teachers': The quality of the collaboration with teachers and other professions was examined by using the respective scale from the 'Questionnaire on Teamwork' (Kauffeld 2004). Here, 15 out of 24 items were used (the items relating to collaboration between teachers were not included in the questionnaire). For example, one of the 15 items was: 'Everyone on our team feels responsible for the overall result'. A six-point Likert scale (0 = strongly disagree; 5 = strongly agree) was used as response format. The Cronbach's alpha of the assistants' version was .93 and that of the teachers' version was .95.

2.3.2. *'Perceived changes in collaboration between assistants and teachers'*

The perceived changes in collaboration between assistants were measured by the same 15 items of the 'Questionnaire on Teamwork' (Kauffeld 2004). The response options were changed to a five-point Likert scale from 'negative change' (0–1) to 'no change' (2) to 'positive change' (3–4). The Cronbach's alpha of the assistants' version was .90 and that of the teachers' version was .91.

2.3.3. *Questionnaire for parents*

2.3.3.1. *'Roles of learning and support assistants'*. A short scale of six items was developed in order to explore how parents perceived the role of assistants in inclusive classrooms. One of the items was 'The role of the assistant in the process of inclusion at school is to support your child to develop his/her personality, talents and creativity'. The response format employed a six-point Likert scale from '0 = strongly disagree to 5 = strongly agree'. The scale consisted of six items and had a Cronbach's alpha of .70.

2.3.3.2. *'Balance in the relationship with learning and support assistants'*. To explore the quality of the relationship between parents and assistants a semantic differential with six pairs of opposites was provided. Participants could choose, on the basis of a six-point Likert scale, between two opposites, for example: '0 = open relationship to 5 = closed relationship', '0 = confidential to 5 = distrustful', '0 = constructive to 5 = destructive', etc. The values 0 and 5 were seen as strong expressions of one dimension in the relationship. The Cronbach's alpha of the six items was .88.

2.3.3.3. *'Perceived change in the collaboration of parents and assistants'*. This short scale also contained two items. For example, for changes with respect to the following item: 'Informative conversations between you as a parent and assistants', response options ranged from 'negative change' (0–1) to 'no change' (2) to 'positive change' (3–4). As the scales consisted only of two items, the Spearman-Brown coefficient was calculated, resulting in .82.

2.3.3.4. *Qualitative instruments*. Semi-structured interview guidelines were used for the two focus groups with assistants and teachers. The topics covered in assistant interviews concerned:

- experiences in studying and engaging with the knowledge boxes,
- collaboration with school staff and respective changes as a result of making use of the knowledge boxes,
- practical relevance of the knowledge box content regarding child inclusion and collaboration with other professionals and
- success factors for learning and support assistants

Teacher interviews covered:

- assessment of the knowledge boxes (what content is important/not important with respect to inclusive education),
- experiences with collaboration and
- success factors for learning and support assistants

2.3.3.5. Pilot study of the quantitative questionnaires. Within the IMAS II project, the online questionnaires were developed in five languages (Bulgarian, English, German, Portuguese, Slovak). For content validation, three assistants per country ($n = 15$) piloted the questionnaires and provided detailed feedback. This allowed us to overcome differences and distortions arising from the translation. Based on the feedback, items were adapted, ambiguities clarified and sources of misunderstanding removed.

2.3.3.6. Pilot study of the qualitative guidelines. The semi-structured guidelines for the two focus group interviews were developed in German. The guidelines were piloted with one assistant and one teacher in Austria. Minor adjustments were then made based on the results.

2.4. Data analysis

The three online questionnaires (for assistants, teachers and parents) were analysed by using the statistic software SPSS 25. After data cleaning, Kolmogorov-Smirnov tests were carried out. As the results showed that the data were not normally distributed, nonparametric procedures were used for statistical calculations. Descriptive statistics and Spearman correlations were then calculated in order to answer the research questions (see Table 1).

Due to the Covid-19 pandemic both group interviews were conducted via an online conference tool. The discussions were audiotaped and transcribed. The research team analysed the data using Kuckartz's qualitative content analysis (Kuckartz 2016). In doing so, the main categories and subcategories were determined deductively on the basis of the theory, previous research and requirements pertaining to the respective area of practice. Additionally, further categories and subcategories were developed inductively.

3. Results

3.1. Collaboration between learning and support assistants and teachers

The results of the quantitative data showed that 95.3% of the surveyed assistants worked with teachers on a daily basis (2.3% weekly and 2.3% monthly) ($M = .07$; $SD = .34$; range 0–3). Furthermore, assistants felt that collaboration with teachers was of rather good quality ($M = 4.12$; $SD = .91$; range 0–5). The teachers reported that collaboration with assistants was predominantly of good quality ($M = 4.41$; $SD = .88$; range 0–5). From the teachers' perspective, 88.9% of the assistants worked with them daily (11.1% monthly) ($M = .22$; $SD = .67$; range 0–3).

Since studies have shown that the exchange frequency with team members is of significant importance in the perception of collaboration quality, Spearman correlations were calculated. The analysis showed no significant correlation between the frequency of collaboration and the perceived collaboration quality, neither for teachers ($r = -.57$; $p = .36$) nor for assistants ($r = -.23$; $p = .24$).

Table 1. Results of the Spearman correlations (* $p < .05$).

	experience in quality of collaboration with teachers (assistants' questionnaire)	experience in quality of collaboration with assistants (teachers' questionnaire)	balance regarding the quality of the relationship with assistants (parents' questionnaire)
frequency of collaboration with teachers (assistants' questionnaire)	-.23	-	-
frequency of collaboration with assistants (teachers' questionnaire)	-	-.57	-
perceived change in the quality of collaboration between teachers and assistants	.32*	.07	-
assistants' role for the children (parents' questionnaire)	-	-	.28

In contrast to the positive assessment of collaboration quality based on quantitative data, the interviewed assistants mentioned various challenges regarding the collaboration with teachers. One challenge was the limited time for exchange, another was the uncertainty concerning roles, thus making successful collaboration difficult: *'Exactly, it's so unclear what I'm actually allowed to do. Would I actually have to wait for an instruction or something? Or am I really allowed to decide that for myself? It's all so unclear, the whole job, and it's so unclear how it works really well'*. Regular informational exchange with the teacher during working hours concerning the supported child or the lessons was mentioned as being quite positive, although one assistant reported that the teacher did not want to cooperate with her.

In the focus group interviews with teachers, the latter described their experience with assistants as being primarily positive. Three of the four teachers interviewed mentioned that they were grateful for assistant support in the classroom. They appreciated the different viewpoint that assistants had on class situations and on students.

From the teachers' perspective the lack of clarity concerning the assistants' tasks and roles is often problematic. The legal regulations covering assistance services in Austria state that assistants may support students with disabilities only by providing care and support unrelated to pedagogical activities. This clearly causes difficulties in daily work and creates disappointment among all those involved: *'This makes it incredibly difficult for the teachers because they have a resource that they should actually be using, which would be the most beneficial for everyone. But according to the law, we're not allowed to use it'*.

3.2. Collaboration between learning and support assistants and parents

Regarding assistants' experiences in collaborating with parents, the focus group interviews revealed that assistants experience such collaboration as being particularly challenging. Establishing a professional relationship with parents appears to be particularly difficult as, from the assistants' point of view, it is quite difficult to find an appropriate balance between closeness and distance. For example, although assistants try to avoid it, parents often raise issues that are not related to the supported child. As one assistant stated: *'It's more that I feel like I've become a friend to the mother. That doesn't work for me at all'*.

Frequently parents insist on phone calls. These take place in the assistants' leisure time and are often time consuming. The interviewed assistants conclude that their role is, apparently, not completely clear to the parents, which makes professional collaboration difficult.

Regarding the support of their children in school, the quantitative results showed that parents experience the assistants' role regarding the child's development as positive ($M = 4.86$; $SD = .38$; range 0–5). They estimate the quality of the relationship as appropriate and rather positive with a mean of 1.71 ($SD = 1.32$), thus indicating a tendency towards an open, confidential and constructive relationship.

3.3. Changes in collaboration: experiences of assistants, teachers and parents with the knowledge boxes

Parents' experiences of whether there was a change in the quality of collaboration between them and the assistants after the latter had studied the knowledge boxes indicate a minor positive change ($M = 3.00$; $SD = .77$; range 0–4). While this perceived change was found to be related to some small extent ($r = .28$; $p = .21$) to previous experience in the quality of the relationship-balance, there was no statistically significant correlation.

Teachers' experiences of changes in assistant-teacher collaboration after assistants studied the knowledge boxes also indicate a minor positive change ($M = 2.93$; $SD = .88$; range 0–4). Once again, teachers' previous assessment of the quality of collaboration was also not significantly related to the perceived change in collaboration ($r = .07$; $p = .31$).

As the results showed $M = 2.78$ ($SD = .69$; range 0–4), it can be assumed that assistants perceived a minor positive change in collaboration with teachers after they have studied the knowledge boxes and applied their knowledge in practice. A significant positive correlation was found to exist between the quality of previous collaboration and the perceived change after assistants had used the knowledge boxes ($r = .32$; $p = .04$). The medium effect size supports the assumption that the more positive the perceived change, the more positive the quality of collaboration with teachers.

3.4. Success factors in the work of learning and support assistants

In the focus group interviews with the assistants, several factors were mentioned which were perceived as being relevant for success. The main factor was the perceived need for a clear legal framework regarding the role and responsibilities of assistants. This issue was addressed by seven assistants who said there was also a need for clarification concerning their tasks and duties, as well as concerning the organisation of collaboration with teachers and parents. Assistants also mentioned that role clarification could also solve the experienced challenge in working with parents: *'How can we introduce ourselves as assistants or how can we communicate clearly what exactly we do? So that it is clear for us, but also where we work, in school, also for parents. The fact that this should be better communicated, that's how conflicts are resolved'*.

Assistant tasks and responsibilities regarding inclusion also need to be set in a legal framework. As the current legal framework stipulates that assistants are responsible for one particular child, stigmatisation or exclusion can easily result: *'In principle, we are only*

responsible for the children who are assigned to us, but if we are always only responsible for this one child, he or she cannot integrate. If it is official that we may be more generally responsible for the whole class, the child can also integrate'. All the interviewed assistants noticed that being responsible for only one specific child in class limits interaction and thus hinder inclusion. The inclusion of all children would likely be strengthened if assistants were allowed to support teachers in teaching all students in class. This presupposes, however, that learning and support assistants are adequately prepared and trained for their work. All assistants mentioned that concrete training, where assistants are prepared for their work with children with disabilities, where theoretical knowledge and practical advice are provided, is indispensable. In accordance with the results of the quantitative study, all three interviewees agreed that the knowledge boxes provided a good possibility for training because they provided sound information for enhancing knowledge and strengthening inclusive competences.

The success factors mentioned by the teachers were similar to those stated by the assistants, with particular emphasis being placed on the need for training: *'Professionalization: Also a basic training. The assistant must have basic knowledge and intuition'*. The teachers mentioned that an assistant ought to be responsible for more than one child in order to ensure the inclusion of all children. Consequently, the teachers suggested that the assistant be assigned to the whole class or grade, instead of being assigned to a specific child.

In the focus group interview, teachers mentioned the significance of clarifying assistants' roles. It was thought that this would strengthen communication among teachers and assistants, and thus improve collaboration. From the teachers' point of view, teachers need to be prepared for such collaboration during their studies. This entails a need to raise awareness among teachers in (further) education of the roles and responsibilities of assistants.

4. Discussion

Previous research has identified various essential factors with respect to the quality of inclusive education. One of these factors is multi-professional collaboration. While collaboration between teachers and special teachers has been extensively investigated (Paulsrud and Nilholm 2020), there are only relatively few studies available regarding multi-professional collaboration between teachers and assistants in inclusive schools, or between assistants and parents. This provided the motivation behind the present mixed methods study which was aimed at exploring the quality of collaboration between assistants and teachers and assistants and parents, after assistants had engaged in training using an online tool for professional development. The study reveals various relevant aspects for inclusive education concerning the general structure of assistance services as well as aspects that have already been successfully implemented in schools.

One result found in the present study, a result also supported by the findings of international research, is that assistants need appropriate training if they are to work adequately with children in school, to meet children's needs, to include them in the class community and to support teachers in the classroom (Breyer, Lederer, and Gasteiger-Klicpera 2020; Böing 2017; Webster et al. 2010). This is exactly what the knowledge boxes mentioned in the present study are intended to support. They provide assistants with

a flexible and free training opportunity. By providing useful tips and strategies, the knowledge boxes also facilitate multi-professional collaboration between assistants, teachers and parents. The results of the evaluation described above show that collaboration between parents, teachers, and assistants showed a tendency to evaluate the collaboration in a positive direction after assistants had spent time engaging with the material in the knowledge boxes. This tendency is experienced independently of their previous collaboration experiences. As reported by assistants in the present study it can be concluded that the use of the new online tool for professional development appears likely to lead to an improvement in practice.

The analysis of the international data of this study showed that assistants, teachers and parents all experience collaboration positively. For teachers, parents and assistants, the regular exchange of information is perceived as being particularly meaningful. Previous research also found that such a regular exchange of information was significant, covering, for example, to clarify the responsibilities of the respective members of the team, to address the well-being and perceived development of the students and, based on this, to plan support opportunities in the classroom (Henn et al. 2019; Meyer 2017; Biggs et al., 2016). Difficulties were found to arise, however, regarding collaboration with parents. The job profile of assistants does not allow time for collaboration and exchanges with teachers, other professionals, or parents. Thus, as already mentioned above, such exchanges often take place outside assistants' paid hours of work (Breyer, Lederer, and Gasteiger-Klicpera 2020; Henn et al. 2019; Sheehey, Wells, and Ogata 2018). Furthermore, the exchange between assistants and parents is perceived as challenging by assistants as parents often try to discuss topics that do not concern the supported child at all. This places assistants in an uncomfortable situation, as they do not feel responsible for private matters and prefer to concentrate on establishing a professional relationship with parents (Henn et al. 2019). Thus, while assistants attempt to avoid too close a relationship with parents, they also do not wish to appear aloof or distant. Establishing the correct balance in such a situation is often felt to be difficult.

Assistants believe the cause of such potential conflict lies in the lack of clarity concerning their specific roles and responsibilities. Establishing clear roles has been found to be very important for achieving successful collaboration between teachers and assistants (Brown and Stanton-Chapman 2017; Butt and Lowe 2012). Any ongoing conflict is likely to limit assistants in collaborating with teachers and to constrain them in providing student support. In such a situation resources are wasted as assistants revert to a conflict avoidance strategy and hold back in exercising their responsibilities. In addition, one also needs to take account of the fact that in many countries assistants are assigned to support only one child. As a result, teachers often delegate their responsibility for the child to the assistants. As was confirmed in both the present study and in earlier research, this serves to limit available possibilities for inclusion. If assistants are to be successful, and if the inclusion of all children is to be implemented in practice, the present one-child limitation needs to be extended or relaxed so that assistants may be responsible for all concerns and needs in class, and be allowed to fashion their teacher/student support activities with this in mind (Breyer, Lederer, and Gasteiger-Klicpera 2020).

In this context, it must also be noted that the support provided by assistants is not intended to represent a final solution for inclusive education. In terms of inclusion, an educational system should be carried out in such a way that all children can participate in

class the same way. This also means that framework conditions need to exist where all children can participate and develop in everyday school life according to their individual needs. For this purpose, assistants need to be assigned to classes or teachers and cooperate closely with them. This means that qualified teachers assume their responsibility for all children in class (Giangreco 2021), although this does not exclude the fact that assistants should also have at least a basic knowledge of how to support children at school.

However, the interviewed assistants also pointed out that use of the knowledge boxes is probably not sufficient for their daily work in school under these circumstances and that a more concrete form of training is needed so that they become better prepared for daily life in school. Thereby, it can be argued that they are setting the bar too high here, as assistants never bear sole responsibility for implementing inclusion in schools. Whatever the case, this wish on the part of assistants may simply be regarded as a further indication of the necessity for professionalisation, and the need for greater self-reflection, particularly regarding one's own limits and available resources.

While the role of assistants is limited to that of providing teacher support, things might be improved if assistants as well as teachers were responsible for all children in the class. Such an augmentation of the assistant role would then also need to be taken account of in teacher training. The teachers interviewed in the present study also expressed the wish that more attention be paid during their training to preparing them for collaborative work with assistants. This is likely to be more relevant in future as it seems to be becoming increasingly common for teachers to work with assistants over the course of their career (Webster et al. 2021).

5. Limitations

As the findings of the present study are subject to a few methodological constraints the results must be interpreted cautiously. On the one hand, the Covid-19 pandemic had a clear impact on the daily lives of assistants, teachers, parents and children. Due to the school closures and the strict regulations concerning school access, many teachers and assistants were not able to work in direct contact with children during the school year 2020/2021. For many families, teachers and assistants, it was also very challenging to find an acceptable balance between personal and professional life (home office, school closures and online learning, etc.) during the Covid-19 pandemic. This is one possible reason for the relatively small sample size of the study. Although about 620 assistants used the knowledge boxes, only a few of them participated in the evaluation study. This limits the generalisability of the results considerably. Thus, a larger representative sample is needed to validate the effects of the learning process. Moreover, a pre-post-test design is also necessary to obtain more reliable results on the effects of knowledge box use and its impact on multi-professional collaboration in an inclusive context.

Finally, we also only had the possibility to organise focus group interviews with assistants and teachers in Austria because of the pandemic. Focus group interviews with assistants and teachers in all partner countries of the IMAS II project would obviously have been more beneficial in terms of gaining greater insight into cross-country variations in knowledge box application and in exploring the strengths and weaknesses of assistance services in more detail.

Disclosure statement

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

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