Step by Step

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General discussion

The worldwide movement toward inclusive education aims to promote equal opportunities for all students (UNESCO, 2016). However, students with disabilities appear to have fewer opportunities than their typically developing peers to participate in the class (UNESCO, 2020). Numerous studies have indicated that the social participation of students with disabilities is lagging behind. Negative peer attitudes are often mentioned as the main barrier for their social participation. As the social participation of students with disabilities does not emerge spontaneously, teachers need to actively promote the social participation of students with disabilities and the attitudes of their typically developing peers via evidence-based interventions in the classroom (Juvonen et al., 2019). In the Netherlands, no evidence-based interventions existed to promote the social participation of students with disabilities. Although multiple international studies have described effective interventions (see reviews by Armstrong et al., 2017; Garrote et al., 2017; Lindsay & Edwards, 2013), there are some important caveats to the current state of knowledge. First, social participation is a social process that emerges out of interactions between students with disabilities and their typically developing peers, who bi-directionally influence each other. To fully understand this process, studies are needed that focus on both students with disabilities, as well as their peers. So far, however, studies focused either on the social participation of students with disabilities or solely on the attitudes of their typically developing peers. By investigating this separately, the interactive nature of social participation is not acknowledged. Consequently, the long-lasting effect of these interventions remains unknown. Only if both students with disabilities and their typically developing peers change their social behaviours towards each other, the social participation of students with disabilities can be sustainably promoted. Second, the majority of studies have mainly focused on social, emotional, and/or behavioural difficulties or special educational needs in general. The knowledge of these studies cannot be generalized as such to students with other disabilities, such as physical disabilities, sensory impairments, and intellectual disabilities. The latter also experience social participation problems. Hence, more research is needed into the short- and long-term effects interventions may have on them. Third, information on the effectiveness of these interventions in early childhood education is scarce. This is remarkable, considering several authors have suggested that early childhood is especially important in nurturing the lifelong development of positive attitudes and social acceptance of outgroups, such as students with disabilities (Babik & Gardner, 2021; Tropp & Prenovost, 2008). Last, studies so far have mainly focused on research-based evidence, thereby ignoring practice-based and client-based evidence of what is needed for an intervention to really succeed in practice (e.g., social validity). This indicates that the current (short-term) evidence base might overestimate the (long-lasting) real-world effects of these interventions. A thorough development of an evidence-based intervention requires the integration of research-based, practice-based, and client-based evidence (Van Yperen et al., 2017; Veerman & Van Yperen, 2007).

Based on the aforementioned caveats, this dissertation aimed to investigate the development of a theoretically underpinned and socially valid educational intervention

and to test its short- and long-term effectiveness on the social participation of kindergarten students with disabilities as well as on the attitudes of their typically developing peers. The current study builds on previous work by Favazza and Odom (1997) and De Boer et al. (2014) by adapting the *Special Friends* intervention (see also Favazza et al., 2016) for use in Dutch kindergarten classroom settings. This adapted intervention, *Everybody Belongs!* [Iedereen hoort erbij!], aims to promote the social participation of Dutch kindergarten students with a physical disability, hearing impairment, or intellectual disability in regular education, as well as the attitudes of their typically developing peers. The intervention procedures consist of a combination of contact and information, for which the rationale can be found in the well-established Contact Theory (Allport, 1954). With four sub-studies, this dissertation attempted to combine research-based, practice-based, and client-based evidence on various levels of the 'effect ladder' by Van Yperen et al. (2017; see also Veerman & Van Yperen, 2007).

6.1 Main findings

Several levels of the 'effect ladder' were climbed. The conditional first step on the ladder was taken in **Chapter 1**, which described the aim, target group, and envisioned procedures of the intervention: the promotion of the social participation of young students with a physical disability, hearing impairment, or intellectual disability, as well as the attitudes of their typically developing peers via a combination of information and contact.

The next step on the ladder comprised the investigation of the theoretical underpinnings of the intervention via a systematic literature review in **Chapter 2**. This review investigated the applicability of the Contact Theory (Allport, 1954) in the context of inclusive education interventions. Based on previous studies, the review aimed to elucidate to what extent the proposed intervention components contact and information are able to promote both the attitudes of typically developing peers and the four domains of social participation of students with disabilities (i.e., contacts/interactions, acceptance, friendships/ relationships, and social self-perception). In addition, it aimed to elucidate the mediating role of peer attitudes in promoting the social participation of students with disabilities. In total, 55 articles were examined in which 26 interventions aimed at improving attitudes and 48 interventions aimed at promoting social participation were described for students aged 3-12 years. It was concluded that interventions combining contact with information were most effective in promoting both the attitudes of typically developing students as well as the social participation of students with disabilities. The findings of the systematic review confirmed the conceptual model for the proposed intervention, though evidence regarding social participation almost exclusively focused on social interactions (not on acceptance, friendships, and social self-perception). With regard to the proposed intervention procedures for *Everybody Belongs!* [Iedereen hoort erbij!], the findings supported the use of picture books and guided discussions, as

they were positively associated with peer attitudes. Although cooperative learning is in essence ideally suited to meet the four conditions for optimal contact as proposed by Allport (1954) (i.e., equal status, common goals, intergroup cooperation, and support of authorities), only positive effects were found relating to social participation and not to attitudes. It was tentatively concluded that in performance-oriented contexts like schools, *fun* would probably be an important fifth condition for optimal contact. In conclusion, the review confirmed the proposed intervention design, as long as the cooperative learning activities would not magnify and/or accentuate differences between students with disabilities and their typically developing peers. Surprisingly, there were no articles investigating the mediating role of peer attitudes in promoting the social participation of students with disabilities.

Then, after solidifying the intervention theory on the second step of the ladder, the design study in **Chapter 3** aimed to refine the intervention design based on practice-based evidence. Socially valid interventions are more likely to be implemented with fidelity, which means that they also have a higher probability of leading to long-lasting real-world effects. A social validity assessment with 17 kindergarten teachers was conducted to provide insight into which factors strengthened or hindered the social validity of the intervention, relating to goals, intervention procedures, and (expected) effects. With regard to the intervention theory, the majority of teachers expected that the intervention would be able to yield positive results relating to attitudes and acceptance (i.e., increased understanding). Yet, other teachers indicated that a single intervention was insufficient to resolve social participation problems, and others foresaw possible negative outcomes, such as stigmatization of disability. The kindergarten teachers considered several critical intervention components: information increases understanding (n = 8), cooperative learning promotes social interaction (n = 3) and coping with differences (n = 5), and the intensity of the intervention is needed to achieve an effect (n = 2). Moreover, five teachers indicated that the effect would depend jointly on the teachers, students, and parents involved in the intervention. The assessment indicated that teachers were mostly positive about the intervention, however, the assessment also revealed five aspects that teachers were slightly less positive about and which had to be changed, omitted or added to better suit their needs. This concerned the suitability of cooperative learning methods for young students, the time investment, possibilities for flexibility, a preparatory training for teachers, and the choice of disability types within the intervention. Hereto, age-appropriate cooperative learning methods (Slavin, 2010) were selected, the preparation time was minimalized, the importance of the duration and intensity of the intervention and the crucial intervention components were clearly communicated to teachers, and a preparatory teacher training was added. It was decided to retain the original focus disabilities (physical, auditory, and intellectual), as they are more evident to young students.

Climbing on the ladder even higher and collecting empirical evidence on the implementation fidelity and effect of the intervention, a quasi-experimental study with three repeated measured was conducted in 19 kindergarten classes in the Netherlands

to investigate the effects of the intervention on both typically developing students and students with disabilities. The design included an experimental group that piloted the intervention *Everybody Belongs!* [Iedereen hoort erbij!] (n_{class} = 10[1]) and a control group that followed the regular curriculum (n_{class} = 9). Overall, the crucial intervention components were implemented with fidelity, though minor changes were made by teachers. In one class, only 60% of the contact component was implemented. Furthermore, a social validity assessment of the implemented final design of the intervention indicated that the kindergarten teachers (*n* = 8) evaluated both the online preparatory training as well as the student lessons well. They considered the intervention procedures as acceptable and feasible, however, they also indicated that the intervention required too much time in a rather short period of time and that they would prefer to spread the intervention over a longer period. With regard to the effects of the intervention, some teachers mentioned that they noticed more patience, better cooperation, and less rejection as well as more conversations about disabilities in class. The majority of the teachers did not see any substantial effects in their classrooms and attributed this to their students already being rather social.

Chapter 4 investigated to what extent the intervention was able to promote typically developing students' attitudes towards peers with disabilities. As typically developing students might have an important role in promoting the social participation of students with disabilities, the effect on their acceptance of, and self-indicated friendships with peers with disabilities was also investigated, as well as the presumed mediation effect of attitudes. Results stemming from multilevel analyses indicated that, overall, the attitudes of the typically developing kindergarten students (*n* = 332) became significantly less positive over time. However, this decline in attitude was significantly less for the students in the experimental group than for students in the control group, both directly after the intervention and at the follow-up measurement. Effect sizes indicated a small intervention effect (ES ranging between 0.22 and 0.33). The softening effect of the intervention only applied to attitudes toward students with physical and intellectual disabilities, and not hearing impairment. No immediate positive intervention effects were found with regard to acceptance and self-indicated friendships. However, a small negative effect for self-indicated best friendship was found at the follow-up measurement. Since no positive intervention effects were found regarding acceptance and friendships, it was (statistically) not meaningful to test the presumed mediation effect of attitudes. Although the level of acceptance and the quantity of self-indicated friendships with peers with disabilities differed between classes, no differential effects relating to disability types were found.

Chapter 5 focused on the effect of the intervention on the social play interactions of kindergarten students with physical disabilities, hearing impairment and intellectual disability (*n* = 20) via a person-centred approach. Play is the most important context for social interactions and establishing social relationships with peers. The intervention

1 Due to the referral of one student with a hearing impairment to special education, the data of this class was not analysed leading to a final sample of nine classes in the experimental group.

effect was evaluated by analysing their patterns of social and non-social play through detailed observations during free play, as informal child-initiated social interactions during play are most indicative of establishing social relations. Reliable Change Indices of the proportions of social play indicated that 30% of kindergarten students in the experimental group versus 12.5% of kindergarten students in the control group spent significantly more time in social play after the intervention period. These effects did not sustain as almost all students who spent more time in social play after the intervention relapsed after the intervention had stopped. No unequivocal differential effects were found with regard to disability types. Yet, only students with a relatively low proportion of social play at pretest demonstrated increases, which all pertained to students with intellectual disabilities. Students with a hearing impairment and a physical disability already showed a relatively high proportion of social play at the pretest, which indicates a probable ceiling effect.

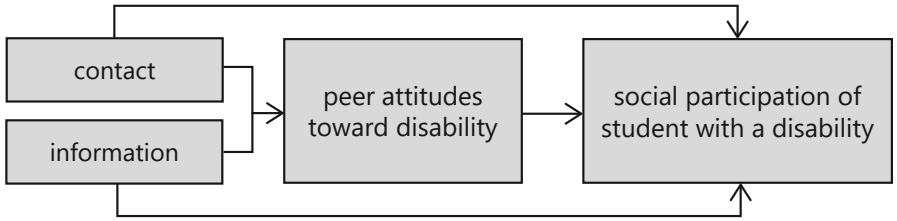
6.1.1 Climbing the effect ladder: Where do we stand?

Summarizing all evidence, it can be concluded that while the evidence on the lower levels of the ladder is solid, this is not the case on the higher levels. On paper, the intervention has a solid intervention theory that is embedded in the literature and was deemed appropriate by its intended users. Yet, in practice, the intervention yields mixed findings. Only a small softening effect on the downward trend of typically developing students' attitudes toward students with a physical and intellectual disability was found, which, in the long run, did not lead to greater acceptance nor more self-indicated friendships with students with disabilities. Yet, most experimental group students with disabilities who had very low proportions of social play at pretest spent significantly more time in social play after the intervention period, though, they relapsed during the follow-up period. Furthermore, while some teachers did see some improvements in their classes, the majority did not see any changes as a result of the intervention, indicating that the current intervention design is not able to establish substantial results.

6.2 Reflection on the conceptual model

In Chapter 1, this dissertation proposed a conceptual model for promoting the social participation of students with disabilities based on the Contact Theory (Allport, 1954). This model served as the intervention theory of *Everybody Belongs!* [Iedereen hoort erbij!]. It was proposed that the social participation of students with disabilities would be promoted through direct contact (i.e., cooperative learning) and information (i.e., picture books about disabilities and guided discussions), via peers' attitudes (see Figure 6.1). Evidently, the reality is far more complex than was depicted in this model. In the next sections, reflections on this model will be given by zooming in on each of the aforementioned concepts.

Figure 6.1 *Conceptual model of the intervention theory of 'Everybody Belongs!'*



6.2.1 Contact

To achieve positive intervention effects, Allport (1954) proposed four criteria for optimal contact: the contact should allow for (1) intergroup cooperation (2) to achieve a common goal (3) where all group members have equal status (4) in a context where authorities (e.g., the teacher) enforces a standard for intergroup acceptance. Although subsequent research indicated that these four criteria of Allport are not essential for promoting attitudes and intergroup relations, effects are greater when these criteria are indeed met (Pettigrew & Tropp, 2006). The cooperative learning activities in *Everybody Belongs!* [Iedereen hoort erbij!] were designed in such a way that all students, regardless of a disability, could equally contribute (i.e., they took into account mobility, communication, developmental level and/or self-regulation), work toward one common goal, had to collaborate to achieve the goal, and the teacher was supportive of intergroup acceptance. However, it may be doubted if these four criteria were fully met in practice.

Previous research has indicated that these four criteria are not always automatically met through the use of cooperative learning. The review by O'Connor and Jenkins (2013) indicates that students with disabilities make fewer contributions to cooperative group work than their typically developing peers, when not adequately supported. According to Niemi and Vehkakoski (2023), neither intergroup cooperation nor equal status arise spontaneously within a mixed-ability cooperative learning group. They found that typically developing students socially excluded their peers with disabilities by ignoring or invalidating their relevant on-task initiations and contributions to the ongoing activity or by dismissing them with an inferior task. This shows that typically developing students may not always be open to positive contact experiences with peers with disabilities, and may keep contact somewhat superficial. Moreover, students do not have the same goal when working together in a group because their attitudes about group work are at variance and their basic needs differ (Boekaerts & Minnaert, 2003). Especially in performance-oriented settings, typically developing students might fear that cooperating with a peer with a disability might negatively impact their own performance (Dell'Anna et al., 2021; Roseth et al., 2008) and thus be less inclined to cooperate (Law et al., 2017).

In the current study, there is only limited insight into what happened during the cooperative learning groups. Teachers indicated in the social validity interviews (Chapter 4) that not all students were familiar with cooperative learning prior to the intervention. True cooperation was hard, especially for their youngest students. Initially, this led

to negative interactions or ignorance, resulting in students mainly focusing on their own share. Over the course of the interventions, most students became increasingly cooperative according to their teachers. This indicates that the required social skills for true cooperation might not have been well enough developed (Battistich & Watson, 2003). In addition, teachers indicated that some of the students with disabilities needed a lot of support during the cooperative learning activity from the teacher or a teaching assistant. This might have limited their opportunities for interacting and cooperating with their peers (cf. Giangreco et al., 1997).

Negative social dynamics might negate the presumed effect of cooperation (Farmer et al., 2019) and negative contact experiences are known to have a bigger impact on attitudes and social participation than positive contact experiences (Barlow et al., 2012). Therefore, future research should focus on how students with and without disabilities interact with each other during these kinds of interventions, for example by investigating reciprocity, social dominance, and affiliation (Leary, 1957; Vaughn & Santos, 2009). Studying these processes in a dynamical way, preferably on a micro-genetic level, might offer valuable insights into how interactions between students with and without disabilities evolve, or even how acceptance and rejection evolve and change over time (Martin et al., 2005; Steenbeek & Van Geert, 2008). With this information, teachers can be better equipped to monitor the social dynamics and enforce a standard for intergroup acceptance in mixed-ability cooperative learning groups.

6.2.2 Information

In addition to the contact opportunities, Allport (1954) believed that providing new and reliable information could correct existing stereotypes and enables the adjustment of thoughts and beliefs, whereby positive attitudes will be promoted. In order to break down negative generalizations, the information should come from different and creditable sources and be repeated multiple times (Bigler & Liben, 2006). For this reason, the animated picture books in *Everybody Belongs!* [Iedereen hoort erbij!] were watched and discussed multiple times, both at school and at home. Previous research has demonstrated that typically developing students' knowledge about disabilities can be successfully promoted via such approaches (Cameron & Rutland, 2006; Ison et al., 2010; Rillotta & Nettelbeck, 2007). However, it is important to note that not all information types are equally able to establish the promotion of attitudes. Providing information from a social model, rather than a medical model, seems important (cf. Batstra et al., 2020). Information about causes and/or medical aspects of disabilities are ineffective and can lead to more negativity because it augments differences (Bell & Morgan, 2000; Swaim & Morgan, 2001). Rather, information about a more social and comprehensive view of disabilities (e.g., how children are impacted by their disability, strengths and interests, and possible ways to interact with peers with a disability) is more effective (Campbell, 2006; Campbell et al., 2004; Tavares, 2011). This type of information is better equipped to help typically students discover similarities with students with disabilities that are essential for the promotion of positive attitudes. In addition, providing information on how to

communicate with a specific student with a disability has proven to be helpful (e.g., Carter & Maxwell, 1998; Goldstein et al., 1997). This approach, however, places students with disabilities in the spotlights and potentially magnifying differences between them and typically developing students. To prevent stigmatization, it is important to consistently embrace diversity with respect to abilities (Dovidio et al., 2000).

Furthermore, as was already mentioned in Chapter 3, the people that implement the intervention are the most crucial factor (cf. Booth & Ainscow, 2002). Teachers ultimately determine to what extent social participation for all students, regardless of disability, is promoted in the classrooms. Families establish norms, values, and expectations for their children and these determine their participation in certain activities and how children's questions about disabilities are answered (Favazza et al., 2016; Guralnick & Bruder, 2016; Innes & Diamond, 1999). In interventions such as *Everybody Belongs!* [Iedereen hoort erbij!], interveners should be a conveying and creditable source of information. Their attitudes influence their remarks and actions towards people with disabilities (Favazza et al., 2016), and thereby the attitudes of their children/students (De Boer, Pijl, Post, et al., 2012; Innes & Diamond, 1999). Although it is known that parents of typically developing students, despite some concerns, generally hold positive attitudes towards inclusive education and see benefits such as their children learning to accept and embrace diversity (De Boer et al., 2010), they do not often talk to their children about disabilities (Yu, 2021). The relatively low rate of parents in the current research that watched and discussed the picture books at home with their child may indicate that it was not a priority for them. Moreover, they may feel concerned about how to address this topic in age-appropriate manner or may feel uncomfortable and consider it a taboo (Baglieri & Lalvani, 2019; Yu, 2021). In addition, in the current study, not all parents were aware that a student with a disability was attending the same class as their child. Some parents asked if it would not be better to carry out this project in a class with an actual student with a disability. Yet, it could also be that an online invitation to watch an animated picture book about disabilities with your child easily disappears in an inbox in which many emails arrive every day. Multiple parents indicated that they had forgotten or had no time to watch and discuss the animated picture books. Meyer et al. (2015) demonstrated that most parents then do read and discuss books about disabilities when they are brought home via a class lending library system. In their study, parents commented that they enjoyed the joint book reading, that their children learned more about disabilities, and that they saw it as an opportunity to openly discuss family members and friends with disabilities. Making teachers and parents aware of the importance of embracing and discussing diversity, equity and inclusion should therefore by high on the agenda.

6.2.3 Attitudes of typically developing peers

It is often assumed that negative peer attitudes are the main barrier for the social participation of students with disabilities (World Health Organization, 2007). Research indicates that these social initiatives toward classmates with disabilities are related to their attitudes (De Boer et al., 2013; Freer, 2023; Godeau et al., 2010; Yu et al., 2015). Multiple

studies have indicated that the attitudes of typically developing students towards peers with disabilities are predominantly neutral or negative (Bates et al., 2015; De Boer, Pijl, & Minnaert, 2012; Rose et al., 2011), with younger students being the most negative (De Boer et al., 2014; Dyson, 2005; Nowicki, 2006). Yet, in the current study, more than half of the typically developing students had neutral attitudes at pretest and another 36% had positive attitudes. This may sound like a positive finding, as it turns out that attitudes are not as negative as was presumed, but the reality is more complex. Whereas negative attitudes may lead to avoidance or active rejection of a peer with a disability, neutral attitudes are most likely to induce passivity (e.g., ignoring a peer with a disability) (Ajzen et al., 2019). To promote the social participation of students with disabilities, however, more active initiatives from their typically developing peers are required, especially because students with disabilities do not always initiate social bids themselves (Odom et al., 2006). To induce change, typically developing students should actively seek the company of peers with disabilities and invite them into their play, which requires highly positive attitudes with strong behavioural intentions.

From a theoretical point of view, it should be stated that the Theory of Planned Behaviour (Ajzen, 1991) is an effective framework for predicting and explaining behaviour (Armitage & Conner, 2001), also in the field of inclusive education (MacFarlane & Woolfson, 2013; Obrusnikova et al., 2011). According to the Theory of Planned Behaviour, the affective and cognitive attitudes predict the behavioural attitude, which, in turn, predicts behaviour (Ajzen, 1991; Ajzen et al., 2019). Although the relationship between peers' attitudes and their facilitation of the social participation of students with disabilities has been established in several studies (Bossaert et al., 2013; De Boer et al., 2013; Godeau et al., 2010; Vignes et al., 2009), evidence for this mediating role of attitudes in interventions is lacking. The current study attempted to elucidate whether attitudes actually mediate in the promotion of the social participation of students with disabilities. Although it ultimately proved not (statistically) meaningful to investigate the presumed mediating role of attitudes in the current study, it can be concluded that we cannot blindly assume that an improvement in attitudes automatically leads to improved social participation for students with disabilities. In the current study, the softening effect of the intervention on the downward trend of attitudes proved insufficient to promote acceptance and friendship. Other studies also found that attitudes are more strongly affected by intervention than peer relations (see review by Aboud et al., 2012). Attitudes and behaviour are related to each other in a complex way (Ajzen & Fishbein, 2005), and people do not always behave in line with their intentions (Ajzen et al., 2019; Webb & Sheeran, 2006).

Furthermore, later modifications of the Contact Theory (see Brown & Hewstone, 2005 for an overview) nuance the impact of contact and information on attitudes by acknowledging the role of underlying cognitive and affective processes. Research indicates that the relationship between contact and attitudes is mediated by intergroup anxiety, empathy, and to a much lesser extent by knowledge about the outgroup (Aberson, 2015; Pettigrew & Tropp, 2008). Intergroup anxiety refers to the uncomfortable feeling individuals may have when anticipating or engaging in intergroup interactions (Stephan,

2014; Stephan & Stephan, 1985). It reduces the willingness, interest, and motivation of individuals to interact with outgroup members and can even lead to negative behaviours, such as avoidance, unwillingness to help outgroup members, distraction in intergroup interactions, and offensive (e.g., using stereotypes) or aggressive behaviours (Halperin et al., 2012; Stephan, 2014). Intergroup empathy refers to the ability of perspective taking, by figuratively putting yourself in someone else's shoes. Perspective-taking builds off egocentric biases to decrease stereotyping and promote intergroup attitudes (Galinsky & Moskowitz, 2000; Todd & Galinsky, 2014). Perspective-taking is deemed essential in reducing intergroup anxiety, whereby attitudes can be promoted (Aberson & Haag, 2007). The relationship between intergroup anxiety and empathy and students' attitudes towards peers with disabilities has also been confirmed by Armstrong et al. (2016). Closely related is the concept of morality, as empathy and perspective-taking originate from morality. Morality can be defined as "prescriptive norms regarding how people should treat one another, concerning concepts such as justice, fairness, and rights" (Killen & Rutland, 2011, p. 10). Several authors have suggested that paying attention to morality is also important in promoting social inclusion (Diamond & Hong, 2010; Ketelaar et al., 2015; Killen & Rutland, 2011). Research indicates that, in general, students condemn disability-based exclusion. However, although typically developing students judge it as morally wrong to exclude peers with disabilities, they are less likely to expect the inclusion of peers with disabilities in certain educational contexts (i.e., academic and athletic group activities) (Gasser et al., 2014). Moreover, Gasser et al. (2014) found that young students were more tolerant of straightforward exclusion based on disabilities than older students (cf. happy-victimizer paradigm; Krettenauer et al., 2008). Children's moral judgments may lead them to reject negativity towards disabilities (Killen & Rutland, 2011). Studying these cognitive and affective processes went beyond the scope of this dissertation. However, they play a major role in why contact may or may not lead to the promotion of attitudes and should, therefore, be included in the conceptual model and addressed in further research. The key in promoting attitudes and social participation via contact and information might lie in reducing intergroup anxiety and encouraging empathy (i.e., perspective-taking) and morality.

As these affective processes appear to be indicative of predicting intergroup attitudes and thus behaviour (Brown & Hewstone, 2005; Pettigrew & Tropp, 2008), several authors have debated the direction of the relationship between attitudes and intergroup relations (Kenworthy et al., 2005). For example, Brown and Hewstone (2005) and Dovidio et al. (2003) argue that cross-group friendships are the most powerful tool to promote positive attitudes, which indicates that positive attitudes originate from social relationships, rather than result into social relationships. The longitudinal study by Binder et al. (2009) indicates that the relationship is bi-directional and transactional. The strong relationship between cross-group friendships and attitudes has also been empirically supported (see meta-analysis by Davies et al., 2011). In their study, they concluded that the amount of time spent together and the level of self-disclosure were most strongly related to attitudes. Moreover, self-disclosure is thought to generate more intergroup empathy (Swart et al.,

2011). In this light, the (positive) interactions during the cooperative learning groups may have insufficient power to meaningfully promote the increasingly negative attitudes.

6.2.4 Social participation of students with disabilities

Whereas previous research has repeatedly demonstrated that the social participation of students with all kinds of disabilities lags behind in all domains and at all ages (see Chapter 1), this dissertation shows that the social participation of contemporary Dutch kindergarten students with disabilities may be better than expected. In contrast to previous studies, the results of Chapter 4 indicate that students with disabilities are equally accepted and viewed as a friend as typically developing students. Furthermore, the results of the observational study in Chapter 5 indicate that whereas the involvement of students with intellectual disabilities in social play is limited, students with physical disabilities and hearing impairment demonstrate high levels of social play. This might be one of the explanations of why the intervention did not yield any substantial effects relating to social participation (i.e., ceiling effect).

Another explanation may lie in the open-ended character of acceptance, friendships, and self-initiated informal interactions during social play. Whereas structured interactions between students with disabilities and their typically developing peers may be enforces, the aforementioned themes of social participation cannot. Rather, they emerge out of repeated positive informal and child-initiated interactions that lead children to become well attuned (Howe & Leach, 2018). Although interventions, such as *Everybody Belongs!* [Iedereen hoort erbij!], create an environment in which positive peer relations are more likely to emerge, they are not a guarantee. Children mostly interact or establish social relationships with children who are equal to them in observable characteristics including (developmental) age, gender, and behavioural tendencies (i.e., homophily principle; Martin et al., 2005; Rubin, Coplan, et al., 2015). Based on this homophily principle, typically developing students may prefer other typically developing students (cf. Hestenes & Carroll, 2000; Innes & Diamond, 1999) and may have no need for contact and social relationships with peers with disabilities. If the bonds among typically developing students become closer, students with disabilities may be left behind. This indicates that it is important for teachers to help students discover similarities. Furthermore, due to differences in abilities, social relationships between students with and without disabilities might be different from relationships between two typically developing peers and harder to establish. They may be unequal, considering typically developing students often have to take on multiple roles, such as aid, caregiver, or translator (e.g., Woodgate et al., 2020). Moreover, the absence of verbal communication may be challenging and the activities might be limited due to the unique needs relating to the disability (Rossetti & Keenan, 2018). Yet, multiple studies indicate that reciprocal friendships between children with disabilities and their typically developing peers are indeed possible (Biggs & Snodgrass, 2020; Rossetti & Keenan, 2018). However, after discovering multiple similarities, some children, including those with disabilities, might just not be that good of a match (i.e., interpersonal rejection rather than intergroup exclusion; Killen et al., 2013).

In addition, peer relations may be more resistant to change. Davies et al. (2011) suggest that the formation of cross-group peer relations is a gradual process, which requires deep levels of self-disclosure, and therefore takes time. The meta-analysis by Jiang and Cillessen (2005) also indicates that peer relations tend to be quite stable and may need more time to evolve. Therefore, permanent or long-term interventions be more effective in promoting social participation. Prolonging the intervention, though with less intensity, also meets the demands of the practice for a less intensive intervention, that is spread out over a longer period of time.

Evidence-based interventions aimed at promoting the social participation of students with disabilities fall within a multi-tiered system of support (Favazza et al., 2022). Class-wide interventions such as *Everybody Belongs!* [Iedereen hoort erbij!] can be considered the first tier. However, such class-wide interventions may not be tailored to meet the needs of individual students with disabilities. When children, with or without disabilities, lack the social competence to establish social relationships with peers, more targeted interventions are needed at the second and sometimes even the third tier (Favazza et al., 2022). Since there are also individual differences in the extent to which children are motivated and willing to participate socially (Coplan et al., 2015), this could also mean that get uncomfortable when they are forced to participate in intervention that requires interacting with peers. De Leeuw (2020), therefore, argues that teachers should actively ask their students how they want to be supported by their teachers, as there is no one-size-fits-all approach in promoting the social participation of students with disabilities.

Differential effects with regard to disability type

In addition to developing a theoretically underpinned and socially valid intervention to promote the social participation of kindergarten students with disabilities, the current study aimed to contribute to knowledge base with regard to intervention effects on students with physical disabilities, hearing impairment, and intellectual disabilities. With regard to social acceptance and self-indicated friendships, no significant differences were found between the disability types, though the data of Chapter 4 hinted that students with intellectual disabilities had most difficulties regarding social participation. This was confirmed by the data on social play interactions in Chapter 5. Here also the students with intellectual disabilities, especially those with Down Syndrome, participated least. These findings are in line with previous studies (e.g., Kuutti et al., 2022; Suhonen et al., 2015). In the current study, these findings might be explained by the severity of the disability. Students with minimal disabilities (e.g., not entirely wheelchair bound, hearing aids, developmental delay), had similar proportions of social play as typically developing students were found to have in previous studies (e.g., Hestenes & Carroll, 2000; Kuutti et al., 2022). In contrast, students with moderate to severe disabilities (e.g., entirely wheelchair bound, little to no verbal speech) were found to participate substantially less. In Chapter 5, it was also suggested that there might be an interaction effect between age and disability type when it comes to the effectiveness of interventions, since only the older students appeared to benefit. There could also be other differential and/or interaction effects with regard to other important

characteristics, such as gender, culture, language, and temperament. Considering the great variation between, but also within the types of disabilities, it proved difficult to discover unequivocal differential effects with regard to disability.

6.3 Intervening in early childhood education

Research suggests that the lagging of social participation of students with disabilities starts in early childhood (Chen et al., 2019; Da Silva et al., 2022; Hestenes & Carroll, 2000; Kuutti et al., 2022). Despite the importance of promoting the social participation of students with disabilities form an early age (Carter & Hughes, 2007; Steenbeek & Van Geert, 2008; Van Geert & Steenbeek, 2005), studies that investigate the effectiveness of interventions aimed at promoting the social participation in this age group are scarce, and mainly limited to investigating interactions. The current study contributed to the evidence base of such interventions in early childhood education.

Similar to the results of previous studies (e.g., Antia et al., 1993; Meyer & Ostrosky, 2016), the intervention *Everybody Belongs!* [Iedereen hoort erbij!] did not achieve all anticipated effects. The inconclusive findings may indicate that inter- and intra-individual differences that may disguise the overall effect might be more prominent due to young children still being in development. At this young age there is great between-child as well as within-child variation with regard to social relations and social competence (Coplan et al., 2015; Santos et al., 2014). Capturing true patterns of change therefore requires more sophisticated methods than taking three measurement occasions. Study designs that allow for a person-centred approach, that does justice to (intra-)individual variability are recommended to capture changes over time.

Furthermore, it could be that the intervention procedures, although theoretically well-underpinned, were not age-appropriate enough to establish effects. As already mentioned, although cooperative learning can be successfully implemented in early childhood education (Battistich & Watson, 2003), positive interactions did not automatically emerge since students had to get used to this, for them, new didactical method. Moreover, the information component of the intervention was not specifically tailored to the knowledge and opinions typically developing students might have had prior to the intervention. Furthermore, it did not differentiate between the youngest and the oldest students, who differ in their understandings of disabilities (Conant & Budoff, 1983; Diamond & Kensinger, 2002). Therefore, the intervention procedures may require more fine-tuning based on client-based evidence (i.e., the characteristics of young students).

6.4 Strengths and limitations of the study

6.4.1 Level of evidence

With regard to research-based evidence, the randomized controlled trial has often been presented as the holy grail of determining the effectiveness, as its internal validity is large. Yet, its applicability in less controlled settings, like education, has been debated (Minnaert, 2023; Sullivan, 2011) However, evidence on the effectiveness of interventions can also stem from other research designs, though their level of evidence may vary (Dunst et al., 1989; Van Yperen et al., 2017). The level of evidence of a study is not only determined by the research design, but also by how the research ultimately was conducted. In Chapters 4 and 5 of this dissertation, two matters might have reduced the anticipated level of evidence. First, the internal validity of the study design might have been affected. The intervention was investigated as a whole rather than investigating the value of each of the separate components. Moreover, the level of implementation fidelity varied across the experimental group, making it harder to ascertain that changes can be attributed to the intervention (Gresham & Walker, 2014). Since the critical intervention components were communicated to teachers in the manual and preparatory teacher training, the implementation fidelity in this study was only monitored via self-report, which is commonly used (Hill & Erickson, 2019). To assure internal validity, preferably, more information would have been available about what actually happened during the lessons. Moreover, the curriculum of the control groups was not monitored, resulting in even less insight into the actual value of the intervention (Durlak & DuPre, 2008). However, in this study, the monitoring of implementation fidelity was deliberately loosened to gain more insight into real-world implementation and effects (cf. ecological validity). In addition, the social validity assessment in Chapter 4 provided insights into the factors that facilitate and impede implementation fidelity in educational contexts. Second, some differences exist between the experimental group and the control group in terms of age and the students with disabilities. Due to the difficult recruitment of classes, the random assignment to the condition was abandoned. Although great effort has been made to keep the conditions as equal as possible, the analyses revealed there were some systematic differences relating to age and disability types. However, while randomization is effective in equally distributing baseline characteristics across the conditions, it will not control for other sources of error, which are likely to occur in an education context, such as different sites of implementation or different implementers of the intervention (i.e., teachers) (Sullivan, 2011). Controlling for all systematic differences between groups does no justice to the complexity of the educational context. In this dissertation, the effects of the intervention were investigated in the 'normal' educational context by looking at both within-student as well as between-students changes. Utilizing various methodological approaches that best suited the data, we attempted to take these systematic group differences into account as much as possible.

6.4.2 Selection of disability types

This study aimed to integrate evidence on the effectiveness of the intervention *Everybody Belongs!* [Iedereen hoort erbij!] from research and practice and in light of characteristics of the intervention recipients (i.e., kindergarten students with and without disabilities). With regard to the client-based evidence, the focus was mainly on disability type. This is because previous studies had mainly focused on social, emotional and behavioural difficulties and studies comparing other types of disabilities were scarce. Limiting the focus on client-based evidence only to disability type could give the impression of ableism since all unique characteristics of a person cannot be summarized by disability status. Like all students, great variety exists between and within students with disabilities. They can differ with regard to various characteristics, such as age, gender, language, social skills, developmental level, self-regulation of emotions, and play preferences. Client-based evidence comprises information on what works best for whom, which is determined by multiple characteristics together. Thus, looking at solely disability types was only used as a rough first distinction. Moreover, within this dissertation a selection of disability types was made, thereby excluding several other types of disabilities, such as visual impairment, speech- and language deficit, and fine motor disability. The gathered knowledge cannot be generalized for the aforementioned reasons. The current study should therefore be considered as an important first step on a long road to expanding client-based evidence.

6.4.3 Four themes of social participation

Within inclusive education, social participation is referred to as an umbrella term, comprising interactions, acceptance, friendships, and social self-perception (Koster et al., 2009). Whereas previous studies have mainly focused on only the interactions between students with and without disabilities (Rademaker et al., 2020), this study also looked into the more complex themes of social participation that may or may not result from interactions: acceptance and friendship (Fabes et al., 2009). Moreover, it is one of the first studies to look into the interplay of both typically developing students as well as students with disabilities relating to social participation by investigating the relation typically developing students' attitudes and acceptance of and self-indicated friendships with peers with disabilities. However, the study did not tap into the interplay of the four social participation themes. Furthermore, the final theme of social participation, the social self-perception of students with disabilities, was not studied. At this young age, children usually lack the cognitive abilities to make appropriate social comparisons to their classmates which are essential for an accurate self-concept (Harter, 2012).

6.5 Implications for practice

6.5.1 Teachers' role in mixed-ability cooperative learning groups

Teachers have an important role in monitoring and supervising cooperative learning groups (Niemi & Vehkakoski, 2023). Essentially, the students should be in charge and teachers trust them to help each other. Therefore, a teacher's role is one of observing and facilitating interactions when students are unable to solve conflicts among themselves. Research has indicated that cooperative learning can be an effective intervention to promote social participation, however, monitoring group dynamics is essential (Juvonen et al., 2019). Yet, the teachers in the current study were mostly unaware of their role in the cooperative learning groups, indicating that professionalization in this area can be improved.

Establishing cooperative norms in the classroom is essential to prevent students with disabilities from being excluded from cooperative learning groups (O'Connor & Jenkins, 2013). However, underlying processes such as ableism can negatively influence them (Niemi & Vehkakoski, 2023). Especially in performance-oriented settings, typically developing students might fear that cooperating with a peer with a disability might limit their own performance (Dell'Anna et al., 2021; Roseth et al., 2008) and thus be less inclined to cooperate (Law et al., 2017). While performance-oriented goals may be good from a motivational perspective, they do not facilitate social participation. The focus during cooperative learning activities should therefore more often be on social development and having fun, as social activities increase the likelihood of social inclusion of students with disabilities (Gasser et al., 2014) and fun can serve as an equalizer that points out similarities between students (Siperstein et al., 2009).

In addition, when students have no previous experience in cooperative learning, they may forget to help their peers, especially those with disabilities, and solely focus on their own work (O'Connor & Jenkins, 2013). As students with disabilities depend more on teachers, teacher aids, and other professionals due to communication and mobility difficulties (Antia et al., 2011; Logan et al., 2015), they may feel lost when this additional support is removed. Contrary, providing additional support may cut them off from the cooperative learning group (O'Connor & Jenkins, 2013). To train peers in how to involve peers with disabilities, in the initial stages of getting familiar with cooperative learning, they may need someone to scaffold interactions, to help them 'translate', or to teach communication strategies or mobility hacks.

Professional development is essential for the sustainable implementation of interventions (Han & Weiss, 2005; Prenger et al., 2022). For interventions conducting cooperative learning activities on mixed-ability groups, this requires in-depth training of teachers. Current pre-service training might be insufficient to properly prepare teachers to work with cooperative learning, let alone monitor and supervise mixed-ability groups. To establish inclusive education, in which inclusive practices benefit all students (cf. Booth & Ainscow, 2002), pre-service and in-service training for teachers on cooperative learning in mixed-ability groups should be provided, as this is currently not a fixed part of pre-

service training. Moreover, it is advised that school psychologists and special educational need coordinators are also involved in such professionalization, as they can coach and support teachers to a successful implementation.

6.5.2 Inclusive citizenship education

Global policies, such as Education 2030 – Incheon Declaration and Framework for Action (UNESCO, 2016), stress that education should aim to achieve equity and inclusion. Hereto, the school curriculum should promote equality of opportunity for all students (in Dutch: kansengelijkheid). Global citizenship education is deemed essential in establishing equity and inclusion. One of the fundamental principles of global citizenship education is respect for diversity, in the broadest meaning of the word (UNESCO, 2017). Among other things, it relates to the students' sense of belonging, sharing values and responsibilities, empathy, solidarity and respect for differences and diversity. Next to teaching universal values such as justice, equity, equality, dignity, and respect, global citizenship education should also teach students how to interact with people of different backgrounds, origins, cultures, and perspectives (UNESCO, 2016). Similarly, combating ableism (Baglieri & Lalvani, 2019; Hehir, 2002) and promoting the social participation of students with disabilities should be an integrative part of global citizenship education.

Baglieri and Lalvani (2019) argue that students do not receive enough information about disability. International studies in which teachers were asked to report the availability of inclusive education materials have indicated that people with disabilities are underrepresented in educational materials (Favazza et al., 2017; Jensen et al., 2021; Yu & Kim, 2023). Similar findings have been reproduced in the Netherlands with regard to disabilities (Rademaker & De Boer, 2022). This is worrying because not portraying people with disabilities and leaving them unmentioned in the classroom sends an implicit message that it is a topic with little relevance and that people with disabilities are to be excluded, invisible, or do not belong (Baglieri & Lalvani, 2019; Hughes et al., 2006). Echoing the critiques on colour blindness (Apfelbaum et al., 2012), acknowledging and paying attention to diversity in the curriculum can promote perspective taking which in turn can promote positive attitudes and intergroup relations (Todd & Galinsky, 2014). Recognizing differences does not automatically lead to stigmatization, as long as these differences are not consequently devaluated (Dovidio et al., 2000). To achieve this, it is important to educate teachers on how to combat ableism. Even teachers who feel strongly committed to inclusion often feel concerned, anxious, or ill-equipped to take on discussions about disability within their class (Baglieri & Lalvani, 2019). Moreover, it is important that teachers seek collaboration with parents in this regard. As we should aim to see disabilities from a social view, rather than a medical view, home-school partnerships are essential in involving everybody to combat ableism (Baglieri & Lalvani, 2019).

6.6 Directions for future research

6.6.1 Inside the black box

For a better comprehension of interventions, it is not only important if they yielded effects but also to why they did or did not work (O'Donnell & O'Donnell, 2008). Therefore, it is needed to open the 'black box' of the intervention process and not only study the effects of the intervention via pre-, post-, and follow-up tests but also investigate the process itself. Unfolding and investigating these (effective) mechanisms of change within interventions can help improve existing interventions and the development of new interventions (Boekaerts & Minnaert, 2003; Hayes, Laurenceau, & Cardaciotto, 2007; Kazdin & Nock, 2003).

First, it can provide insight into whether the intervention theory actually makes sense in practice. If what happens during the intervention session, although well implemented by the teacher, is not in line with the intervention theory, adjustments can be made. Second, although it is assumed by many researchers that change is a continuous and linear process, in reality, this is far from always the case (Hayes, Laurenceau, Feldman, et al., 2007); transitions are often preceded by a period of increased variability (Van Geert & Steenbeek, 2005; Van Geert & Van Dijk, 2002). It is important to discover the significant transition points, or at least verify whether there are such transition points because these points can guide further unravelling and analysing the change process and identifying the mediators and moderators of change (Hayes, Laurenceau, & Cardaciotto, 2007). In this case, for example, it can help determine for example whether the intervention was indeed too short and should be prolonged. By frequently measuring important variables during interventions, intervention processes can be captured and studied (Hayes, Laurenceau, Feldman, et al., 2007; Van Geert & Van Dijk, 2002). In this way, more insight is gained into what facilitates and inhibits change.

Similarly, processes of intervention development, implementation, and innovation are seldom linear. Rather, they are cyclical processes consisting of adapting and reformulating intervention procedures, followed by phases of implementation and stabilization, after which further adaptations are made and the cycle iterates (Fixsen & Blase, 2009). Some authors refer to this process as *recursive bootstrapping* (e.g., Boekaerts & Minnaert, 2003). Studying these processes of development, implementation, and innovation of interventions within intended habitat (i.e., educational settings) can also provide valuable input on why interventions did or did not work and allow for adjustments to be made during the implementation process that can be investigated immediately.

Furthermore, to allow more flexibility in implementation it is necessary to determine the critical intervention components. Similar to the current study, interventions are often investigated as a complete package. As a result, it remains unclear what the value of the individual intervention components is thereby restricting the flexibility for implementers. It is therefore important to investigate several variants of the same intervention by comparing them via a quasi-experimental study or by in-depth analyses on clusters

post-hoc determined clusters of schools based on their fidelity of implementation (see also Boekaerts & Minnaert, 2003; Carroll et al., 2007).

6.7 The next steps: Keep climbing together

As with most developmental processes, the process of developing or refining an intervention cannot be described as a linear process, but rather an iterative process as it requires various steps of climbing upward and downward on the 'effect ladder'. Taking the results of the higher levels into account, the next step in the developmental process is to climb down and further adjust the intervention theory and design. Ideally, this iterative process consists of a good collaboration between all stakeholders (Klingner et al., 2013; Penuel et al., 2011). The integration of research-based (e.g., input from effect studies), practice-based evidence (e.g., experience in practice), and client-based evidence (e.g., information on what works best for whom) should become common practice at each developmental phase. To allow further this integration, researchers should report comprehensively about practice-based evidence (e.g., social validity) and client-based evidence (e.g., differential results) in their articles, either in the methodology section or as the results of an additional research question.

The collaboration between stakeholders can take many forms, from tokenistic participation to real participation in a co-design, which will determine the degree of impact the input of various stakeholders has in the final design. Although co-design positively affects the acceptability and feasibility of the intervention procedures, previous studies have indicated that more participation does not guarantee better outcomes (DeSmet et al., 2016). In the current study, teachers were consulted on the social validity of the intervention, thereby limiting their impact on the final design. Nonetheless, their input was taken seriously (see Chapter 3) and resulted in a positive evaluation of the intervention procedures (Chapter 4). The assessment of the social validity of interventions is crucial in determining real-world effects of interventions that have (added) value in practice.

The recipients of the intervention also can be seen as important stakeholders. According to Article 12 of the Convention on the Rights of the Child (United Nations, 1989), children have the right to give their opinions freely on issues that affect them and adults should listen and take children seriously. This also applies to interventions that promote the social participation of students with disabilities. Yet, the participants in this study were relatively young, thereby complicating their verbalization of ideas about how to design such an intervention. Instead, input was sought from previous studies that investigated children's ideas on how to promote the social participation of students with disabilities and positive peer attitudes. A review by Bates et al. (2015) indicates that students themselves believe that more information on inclusive education and/or disabilities, more opportunities for contact, and a teacher training are the best

strategies. Nonetheless, to refine the intervention, it would be essential to aim for students' evaluations about the intervention, especially those of students with disabilities.

6.7.1 The final step?

Climbing on, the development of the intervention central to this dissertation, *Everybody Belongs!* [Iedereen hoort erbij!], requires to go down a few steps and refine the conceptual model and thereby also the intervention procedures. Integrating all findings and reflections, the conceptual model should be extended. First, the cognitive and affective processes that underlie attitude change and the promotion of social relations should be acknowledged in the model. Second, the role of teachers and parents should be incorporated. Their characteristics (e.g., attitudes, sense of self-efficacy) and reasons for (not) implementing the intervention with fidelity may affect the outcome. Third, the model should be adaptive to students' characteristics (e.g., age, gender, and type and severity of disability), views, and preferences (i.e., client-based evidence), which may be important moderators. As such, aiming for students' evaluations about the intervention, especially those of students with disabilities, would be essential in the further refining. Fourth, the model should be placed in a context of an education system and society that are developing towards more inclusion.

Hereafter, the process may require more climbing. As Booth and Ainscow (2002, p. 3) describe inclusion as "an *unending process* of increasing learning and participation for all students", developing interventions in such a context also requires an unending process of adapting and evaluating interventions to promote the social participation of students with disabilities. If we keep climbing step by step, together with all key stakeholders, we will eventually reach schools and a society that succeeds in embracing diversity.