

Autism spectrum disorder: How can occupational therapists support schools?

Troubles du spectre de l'autisme : comment les ergothérapeutes peuvent-ils soutenir les écoles?

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Key words: Intervention-level model; Needs; Occupational therapy; Participation; Schools.

Mots clés : Besoins; Écoles; Ergothérapie; Modèle en paliers d'intervention; Participation.

Abstract

Background. Children with autism spectrum disorder (ASD) face multiple occupational challenges in their school, and school staff need additional support to increase their participation. **Purpose.** The aim of this study is to identify how Response to Intervention (RTI) could be used by occupational therapists to support school personnel who work with children with ASD. **Method.** In a descriptive qualitative study, three discussion groups were undertaken with occupational therapists and school staff members in Quebec, Canada, to identify the main concerns regarding the participation of children with ASD in school activities as well as the actions to consider when attempting to increase school-related abilities. **Findings.** School staff members are primarily concerned with frequent outbursts and limited autonomy, along with low motivation and anxiety in children with ASD in diverse school activities and contexts. The actions identified provide guidelines for school and occupational therapist selection, the process to follow, collaborative practices, and support required. **Implications.** A practice model is presented for occupational therapists who seek to develop school capacity to support the participation of children with ASD.

Abrégé

Description. Les enfants avec un trouble du spectre de l'autisme (TSA) rencontrent de multiples défis occupationnels dans leur milieu scolaire. Les intervenants scolaires qui les accueillent ont besoin de soutien supplémentaire pour favoriser la participation de ces enfants. **But.** Le but de cette étude est d'identifier comment la Réponse à l'Intervention (RTI) pourrait être utilisée par l'ergothérapeute pour soutenir les intervenants scolaires travaillant auprès des enfants avec un TSA. **Méthodologie.** Par une étude qualitative descriptive, trois groupes de discussion avec des ergothérapeutes et des intervenants scolaires de la région de Québec (Canada) ont permis d'identifier les principales préoccupations des intervenants concernant la participation des enfants avec un TSA aux activités scolaires et les actions pouvant être privilégiées pour développer les capacités des milieux scolaires. **Résultats.** Les intervenants scolaires sont particulièrement préoccupés par les crises fréquentes, l'autonomie limitée, de même que la faible motivation et l'anxiété des enfants dans plusieurs activités. Les actions identifiées peuvent guider dans le choix des ergothérapeutes et des écoles, la démarche à suivre, les pratiques collaboratives et le soutien requis. **Conséquences.** Un modèle de pratique est présenté pour guider les ergothérapeutes désirant contribuer à développer les capacités des milieux scolaires à soutenir la participation des enfants présentant un TSA.

Funding: This study was primarily funded through a grant received by the Centre de recherche sur les soins et services de première ligne – Université Laval (CERSSPL-UL). Support to cover translation fees was offered by the Institut universitaire en déficience intellectuelle et trouble du spectre de l'autisme. The Consortium national de recherche en intégration sociale (CNRIS) covered preliminary exploration of clinical needs and of the literature.

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The participation of children with autism spectrum disorder (ASD) in school activities represents a significant challenge, as these children comprise more than one-third of all students with disabilities in Quebec schools, and their numbers continue to rise each year (Ministère de l'éducation et de l'enseignement supérieur, 2015; Ministère de la santé et des services sociaux, 2017). Children with ASD experience difficulties regarding communication and social interaction while displaying restricted behavioural patterns and interests (American Psychiatric Association, 2013; Jasmin et al., 2009). These personal constraints significantly limit their ability to participate in day-to-day activities, including those that take place within the school setting (American Psychiatric Association, 2013; Canadian Association of Occupational Therapists, 2015; Ismael, 2016; Jasmin et al., 2009). At school, they often experience anxiety triggered by difficulties when trying to understand instructions or manage transitions and change (Able, Sreckovic, Schultz, Garwood, & Sherman, 2015; Lindsay, Proulx, Thomson, & Scott, 2013). Children with ASD also tend to play by themselves and struggle when working in groups (Lindsay et al., 2013). Some teachers also experience difficulties when encouraging their classroom participation, as children with ASD often exhibit specific interests and a tendency toward anger when asked to put those interests aside (Lindsay et al., 2013). A lack of educational training and support has also been reported (Corkum et al., 2014; Lindsay et al., 2013).

While various stakeholders support the participation of children with ASD in the school setting, certain factors continue to exert a great deal of pressure on their practical and collaborative efforts, including a sharp rise in the prevalence of ASD, longer waiting lists for professional services, and the realities of working through separate networks (Ministère de la santé et des services sociaux, 2017). As a result, teachers who work with these children tend to experience higher levels of stress than their colleagues (Cappe, Smock, & Boujut, 2016; Corkum et al., 2014). In fact, their own perceptions regarding stress and the available social support have been linked to occupational burnouts (Boujut, Popa-Roch, Palomares, Dean, & Cappe, 2017; Cappe, Bolduc, Poirier, Popa-Roch, & Boujut, 2017). Teachers' knowledge of ASD, along with a diminished sense of competence regarding the appropriate strategies, have had a significant impact on their own well-being as well as on the educational success of the students with ASD (Boujut et al., 2017; Cappe et al., 2016). Therefore, it would seem relevant to optimize the occupational therapy support offered to these teachers.

Occupational therapists are well equipped to offer support to teachers working with children with special needs due to their understanding of the personal, environmental, and activity-related requirements that can facilitate or hinder a child's participation in the school environment (Clark & Polichino, 2013; Hui, Snider & Couture, 2016; Missiuna, Pollock, Campbell, DeCola, et al., 2017; Ordre des ergothérapeutes du Québec, 2016; Rens & Joosten, 2014; Villeneuve & Shulha, 2012). To better understand the current occupational therapy

services for school-aged children with ASD, our research team analyzed a number of service requests within three health programs in the Quebec City region (Quebec, Canada) between 2016 and 2017. The approach resulted in a wide range of reasons for occupational therapy referrals. It is worthwhile to note that, from the outset, 62% ($n = 40$) of these referrals targeted components that could impact occupational performance: sensory ($n = 21$; 52%), motor ($n = 18$; 44%), and emotional ($n = 2$; 4%). Referrals regarding school functioning made up more than one-third of the requests ($n = 23$; 35%) and primarily involved support regarding motor skills and writing problems, along with behavioural self-regulation and autonomy in day-to-day activities and classroom routines. Occupational therapists were also called upon to address challenges associated with school transportation, nutrition, transition, play, daycare activities, and specialized classes (e.g., physical education). The research team's approach also revealed that requests associated with school functioning were, on average, processed almost an entire year after they were issued. Thus, by the time the occupational therapist appeared, the needs had often changed; children had been assigned to new classrooms and situations had often deteriorated. Occupational therapists were then asked to quickly propose recommendations to the teacher or special education technician to solve the problem at hand. These occupational therapists often knew very little about the school personnel, their pedagogy, the school culture, or the classroom routines.

This one-off intervention by an occupational therapist who is not familiar with the environment counters best practice principles, which highlight the importance of developing equal relationships with teachers, a continuous school presence, and early intervention (Clark & Polichino, 2013; Missiuna, Pollock, Campbell, Dix, et al., 2015; Wilson & Harris, 2018). Optimizing the effectiveness of direct occupational therapy interventions in a school setting requires consideration for the entire classroom, not merely a single child (Bazyk & Cahill, 2014; Clark & Polichino, 2013; Ordre des ergothérapeutes du Québec, 2016). Interventions involving a lot of collaboration with school staff members, such as coaching and collaborative consultations, can also help develop the school's ability to promote the participation of children with special needs while fostering the teacher's sense of competence (Hui et al., 2016; Villeneuve, 2009; Villeneuve & Shulha, 2012; Wilson & Harris, 2018). In addition, practice models based on the Response to Intervention (RTI) approach are being increasingly recommended (Bazyk, Berthelette, et al., 2012; Bazyk, Michaud, et al., 2009; Chu, 2017; Hutton, Tuppeny & Haselbusch, 2016; Ordre des ergothérapeutes du Québec, 2016). In Canada, stakeholders from various disciplines are gradually being encouraged to use RTI in schools (Bissonnette, 2013; Durand, 2015; McIntosh et al., 2011). In this approach, professional interventions should primarily seek to support and equip school personnel with recognized strategies to help create educational environments that facilitate the participation of all children (Bazyk, Berthelette, et al.,

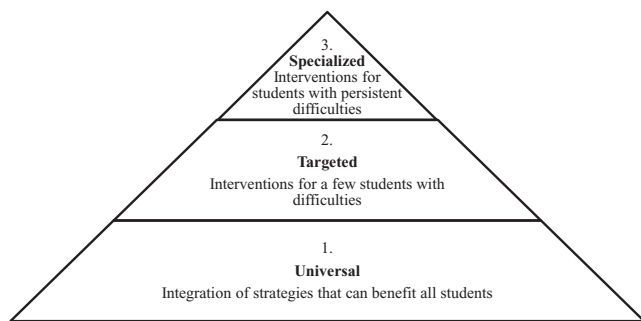


Figure 1. Three intervention levels within the Response To Intervention approach.

2012; Bazyk & Cahill, 2014; Cahill, McGuire, Krumdick, & Lee, 2014; Clark & Polichino, 2013; Lévesque, 2017). This approach proposes three response levels, as shown in Figure 1 (Bazyk, Berthelette, et al., 2012; Clark & Polichino, 2013; Lévesque, 2017). At Level 1, universal measures are implemented to encourage participation from all students while quickly identifying those who have difficulty fully participating in school activities. Level 2 measures target students with difficulties. These measures can take the form of group interventions or support for differentiated education. Level 3 measures offer intensive and individualized assistance specific to a child's needs, but only when previous levels have proved to be insufficient.

The development of an RTI-based practice model adapted to both the school personnel who work with children with ASD and occupational therapists' practice contexts in Quebec (Canada) appears highly relevant. Indeed, waiting lists for services put a lot of pressure on occupational therapists and cause a lot of distress in school personnel. Thus, the recognized occupational therapy practices that promote the academic functioning of children with special needs should be implemented. The recent development of two practice models for occupational therapists who wish to intervene according to a multitier approach (such as RTI) is inspiring for this project. First, *Partnering for Change* was developed to better respond to the needs of children with developmental coordination disorders in Ontario (Missiuna, Pollock, Levac, et al., 2012). It uses a RTI approach to deliver services while focusing on relationship building and knowledge translation in the school context to facilitate the participation of all, including those with motor challenges. Second, *Every Moment Counts* (Bazyk, n.d.), implemented in the United States, focuses on mental health promotion in the youth through multitiered interventions in schools and other community contexts. While these practice models are certainly inspiring and useful, they appear insufficient to respond to the scope and diversity of the needs of schools welcoming children with ASD to foster their full participation within all the meaningful educational activities.

This article presents the findings of the initial phase of an exploratory qualitative study aimed at developing a RTI-based practice model that considers both the specific needs of those involved with children with ASD in schools and the occupational therapy practice settings in Quebec. Study

objectives were to (a) understand the concerns of school staff members regarding the participation of children with ASD and (b) identify recommendations that could help implement the practice model.

Method

This study was positioned within a pragmatic paradigm (Creswell, 2014; Patton, 2015). It sought to obtain results that could help develop a practice model to better meet the needs of school personnel who care for children with ASD while respecting the realities of Quebec's clinical and school environments. A qualitative descriptive study design (Fortin & Gagnon, 2016) was best suited to explore the concerns of school staff members and identify actions required within the practice model. While the pragmatic paradigm typically underlies mixed methods, it mainly calls for methods that enable them to achieve their goals and find solutions to the identified problems (Creswell, 2014). Ethical approval was obtained from the Comité d'éthique sectoriel de la recherche en réadaptation et intégration sociale at the CIUSSS of the Capitale-Nationale.

Participants and Recruitment

School personnel and occupational therapists who work with children with ASD were recruited. For school staff members, quota sampling (Patton, 2015) was used to integrate the perspectives of various school-team members. An invitation was sent to stakeholders from schools where the practice model was likely to be implemented (i.e., the five schools belonging to the partnering board of education that received the highest number of occupational therapy service requests for children with ASD between 2016 and 2017). Fourteen school staff members were recruited via e-mails sent to each school administrator by the educational services advisor who collaborated with the research team. Two groups were formed from these 14 school staff members: (a) eight working in schools where children with ASD are fully integrated into regular classes and (b) six working in schools where children with ASD attend either special classes or regular classes. Of these 14 school staff members, six were teachers (43%), four were professionals (29%; two psychoeducators and two speech-language pathologists), three were special education technicians (21%), and one worked as a daycare educator (7%). Half of the school staff members ($n = 7$) were involved in regular classes only, 36% ($n = 5$) in specialized classes only, and 14% ($n = 2$) in both regular and specialized classes. They worked with students from preschool to primary grade 3. They had, on average, 6 years of experience working with children with ASD (range: 0 to 18 years).

A third group was formed by recruiting 10 occupational therapists working with clients with ASD via e-mails sent to members of the intellectual disability and ASD occupational therapy group from Quebec city and surrounding areas (Quebec, Canada) following a meeting that included a brief project presentation. They had, on average, 13 years of experience

working with children with ASD (range: 2 to 28 years) in four different settings: a rehabilitation centre ($n = 4$), a hospital centre ($n = 2$), a private clinic ($n = 3$), and a school setting ($n = 2$).

Data Collection

Three discussion groups were conducted to examine the concerns of school staff members regarding the participation of children with ASD and to identify priority measures that could help implement a RTI-based practice model to address the needs of these children. Prior to the start of each discussion group, participants filled out the consent form and a short sociodemographic form.

The discussion groups were led by a researcher with experience in moderating discussion groups, supported by another member of the research team. The participatory techniques and tools contained in the *Handbook on Participatory Action Research, Planning, and Evaluation* (Chevalier, Buckles, & Bourassa, 2013) were used to promote active discussion in an atmosphere of openness and creativity. For Objective 1, using a list of 10 possibilities generated from the analysis of occupational therapy service requests, the school staff members were asked to vote for a maximum of five activities that prompted concern regarding the participation of children with ASD. Voting was primarily intended to help the participants establish their positions. It also provided an initial compilation of the stakeholders' concerns. During the group discussion that followed, the facilitator asked the participants to explain their choices and to share their experiences in an effort to clarify their concerns. For Objective 2, a *Sabotage* activity (Chevalier et al., 2013) was conducted with each group to identify what should be done to ruin the implementation of the practice model, and then to make it successful. In addition, occupational therapists were asked to describe an ideal RTI-based practice model that could promote the participation of children with ASD. The discussion groups were recorded and the comments were transcribed verbatim. The sessions with school staff members lasted 2 hours, while the session with occupational therapists lasted 3 hours.

Data Analysis

Descriptive statistics were used to describe the participants and count the votes for each activity. The three discussion group transcripts were analyzed thematically to identify emerging themes using both deductive and inductive content analysis, as both are possible within descriptive qualitative studies (Fortin & Gagnon, 2016). To analyze transcript statements regarding Objective 1, the Person-Environment-Occupation (PEO) model (Law et al., 1996) was used to organize emerging themes within school participation concerns or perceived reasons for these participation concerns (characteristics of the person, occupation, or environment). From transcript statements regarding Objective 2, the recommendations were identified through induction, using statements on the considerations for

the ideal practice model, and on the positive and negative actions. Several strategies helped ensure the validity and applicability of results, including the triangulation of various sources (school staff members and occupational therapists) and double-coding during analysis (Chevalier et al., 2013). Thus, the categories created by one member of the research team (JG or ER) were systematically verified by another (MG) to ensure accuracy and clarity. Several times during the process, verbal discussions were held (JG, ER, and MG) to identify required adjustments to reach consensus.

Findings

School Staff Members Concerns

The analysis of the discussion groups' transcripts helped to define the primary concerns of school staff members regarding the participation of children with ASD in a school setting while clarifying the transactional and dynamic nature of the concerns through the PEO model (Law et al., 1996). It should be noted that the term "participation" was used, as opposed to occupational performance, as it appeared to be more accessible to the school staff members involved. The following section will define the main components that emerged from the analysis, namely, the primary concerns associated with the participation of children with ASD in a school setting (PEO), along with the characteristics that can hinder this participation, which may be associated with children (P), the environment (E), or activities (O).

PEO: Concerns associated with school participation. School staff members claimed limited participation of children with ASD in a number of school activities (see Table 1 for their main concerns including the voting results of participants for each activity [number and percentage of school staff members who prioritized this activity] and the concrete difficulties reported). Activities prioritized by more than 50% ($n = 7$) of respondents included writing, play with peers, classroom routines, specialized classes, and transitions.

On several occasions, participants used images to illustrate the outbursts that would interrupt participation, such as tantrums and panic. Moreover, while daycare activities were not prioritized by a large percentage of school staff members, significant daycare-related needs did emerge: "It's mainly a problem at daycare. They build it up all morning. They're in groups, they behave properly. Then, at noon, they arrive at daycare and explode. The same thing often happens in the evening." Participation in daycare routines, play with peers, and special activities (gatherings and outings) was deemed especially problematic due to the overall lack of structure involved and the over-stimulating and noisy environments.

School staff members also expressed concern for the limited independence of many children with ASD regarding hygiene, routines, and transitions. Limited time to accomplish the activities or routines often forced school staff members to

Table 1
Concerns reported by school staff members

Activity ^a	# of votes	Element of concern regarding these activity
Food	1 (7%)	Food lacking variety and rigidity regarding the properties of components that can trigger outbursts in the moment. Do not feel any great need for support.
Plastic arts (handicraft and drawing)	7 (50%)	Limited performance, anxiety, and frequent outbursts during plastic arts may be associated with poor understanding of group instructions and motor difficulties.
Writing	10 (71%)	Frequent difficulties in meeting requirements (e.g., pencil grip, letter formation, or speed), low motivation, anxiety, and frequent outbursts. Uncertainty regarding which tools to use (e.g., by hand or with technological support).
Play with peers	9 (64%)	Isolation and frequent conflict with peers may be due to awkwardness in relationships and variable peer acceptance. Exacerbated during less structured activities and at the end of the day.
Classroom routines	12 (86%)	Difficulty following routines, partly due to challenges associated with group understanding and attention, creates anxiety in children and requires a great deal of teacher adaptability, particularly when routines change or when many steps are involved.
Daycare routines	2 (14%)	Limited participation for many may be due to environments and activities that are ill-suited to the specific characteristics of children with ASD (e.g., over-stimulating environment, and poor structure and stability). Staff may be limited in number and poorly equipped.
Hygiene	6 (43%)	Reported difficulties in maintaining adequate personal hygiene may impact school relationships, and may be associated with sensory characteristics and low awareness of social norms.
Specialized classes (e.g., music, physical education, or English)	9 (64%)	Limited participation and frequent anxiety in physical education, music, and English may be due to personnel being too ill-equipped to intervene with children with ASD, noisy environments, activities with less structure, or those beyond their abilities (e.g., interactions, motor skills, and language).
Transitions	12 (86%)	Decreased autonomy and much anxiety during transitions (e.g., getting dressed or picking up one's material) may be due to an overloaded physical environment and lack of structure. Compensated through more direct support and illustrated procedures.
School transportation	1 (7%)	Safety issues when walking outside of the school may be due to low awareness of dangers. Few concerns regarding transportation home.

^aActivities in bold were prioritized by 50% ($n = 7$) or more of staff members.

assist the child more than he or she really needs. As one stakeholder stated, "Since everything happens so fast, we're often inclined to do it all for them, because we have to follow the group."

Finally, many school staff members shared concerns regarding the child's low motivation and anxiety during activities that demand too much skill for their abilities (e.g., visual arts, writing, and specialized classes). One stakeholder illustrated this limitation:

When he tries to do it [drawing], he can't so he explodes. Then, the others also want help. Now you don't have time to show him, so he explodes right away because he's disappointed; he can't do it. He doesn't understand.

Teachers also stated difficulties regarding participation in classroom routines. The problem seems to be exacerbated when concepts are taught in groups.

P: Characteristics of children with ASD. Although school staff members report a lot of variability in children with ASD, several characteristics appear to interfere frequently with optimal participation in school life, such as anxiety; poor motor, social and communication skills;

rigidity; limited interests; and sensory information processing. According to the findings, anxiety seems very common, especially when the child feels that he or she does not have the skills required to participate in the activity. One school staff member highlighted the difficulties involved: "There are some specialized classes that create anxiety. Basically, anxiety will appear [in the child with ASD] in the morning even if the English course is scheduled for the afternoon." School staff members were also concerned about the link between anxiety and comprehension difficulties, as described by one participant: "As soon as there's a misunderstanding, we [child and staff member] go into panic mode." Our findings suggest that the rigidity, limited interests, and sensory information processing of children with ASD could require frequent adjustments. Another school staff member provided examples: "You're constantly trying to find the right towel, the right wipe, the right 'Purrell', the right smell, not too hot, too cold." Another participant illustrated the demands this places on the child's sensory experience: "Accepting others; tolerating one person singing, one jumping, another spinning, and another making noises." According to participants, the awkwardness of the children

with ASD in peer relations regularly hindered participation, as stated in this example regarding play:

Playing with peers can become difficult, not just alone in your corner, but also interacting with others while you don't understand the game. You want to play with them, but you don't know how to do it. You're clumsy, and then you get rejected.

According to school staff members, poor motor skills also limit the children's independence when performing certain classroom activities or physical education.

E: Characteristics of the school environment. The school staff members claimed that certain characteristics of the school environment interfered with the participation of children with ASD, including an over-stimulating physical environment, a lack of training and openness in human resources, lack of cooperation, and various levels of peer acceptance and tolerance. During many activities, the school environment can be overloaded with a great deal of noise and movement. The gym, the lunchrooms, and the corridors can be especially problematic for children with ASD, as stated by one stakeholder: "Too much noise, too much movement. How do I deal with noise? This is true at daycare, and it's also true while transitioning to the corridor." Among the barriers involved, many school staff members stated that there were insufficient human resources to meet the needs of children with ASD, as they cannot simultaneously respond to both the group and the child with ASD. Here, school staff members denounced the high student-to-teacher ratios, the lack of integration support, and the lack of training and openness in others toward ASD clients. One stated, "We can't be everywhere at once. And when there's a crisis, well, I just don't have the resources. I have to leave the other nineteen to take care of him, or I'll just leave him where he is." Others emphasized the lack of training and openness in certain daycare and specialized workers who are not sufficiently equipped to intervene with these children: "First, educators are not trained at our daycare. They're not interested, they don't want them. It's too much trouble." A lack of communication and cooperation has also been identified as a concern for certain participants, as it contributes to a lack of consistency and coherence regarding interventions. Finally, when peers do support the participation of children with ASD, the level of acceptance and tolerance often varies.

O: Characteristics of Activities. Certain characteristics of school activities are less favourable to the participation of children with ASD, including those with high levels of difficulty, group requirements, limited time, and lack of structure and predictability. School staff members expressed a considerable amount of concern regarding the level of difficulty involved in some activities, especially given that the entire group is expected to perform the activity a certain way. Here, many school staff members stated a need for additional instructions and support when children with ASD perform such activities. School staff members also believed a lack of program flexibility offers few opportunities for these children to adapt: "There are many unrealistic expectations that do not contribute

to the development of these children." This lack of flexibility is especially problematic in specialized classes, like music or physical education. The limited amount of time made available to carry out certain activities, like transitions, also contributes to these difficulties. Finally, school staff members repeatedly insisted on the limitations faced by children with ASD when taking part in less structured, less predictable activities (e.g., daycare, special activities, and free play).

In summary, school staff members identified several elements that contribute to the difficulties of children with ASD when attempting to participate fully in school activities. They often discussed the mismatch among the characteristics of children with ASD, the school environment, and the activities involved. A summary appears in Figure 2 using the PEO model (Law et al., 1996).

Recommended Actions for the Implementation of a Practice Model

The recommended actions, or the elements conducive to successful implementation of a RTI-based practice model, are presented according to the major themes that emerged from the inductive analysis.

Action 1: Carefully selecting the occupational therapist. The findings helped identify the most desirable characteristics for occupational therapists when implementing a practice model based on RTI but focused on the concerns of school staff members who work with children with ASD. The first characteristic is having a great deal of interest in the project and its practical development; as stated by one occupational therapist: "It takes an OT [occupational therapist] who's excited by the project, not one who's merely looking for a job." Other characteristics include having good interpersonal skills, adaptability, experience with ASD clients, and creativity. In addition, occupational therapists also suggested assigning more than one occupational therapist during the implementation phase, as they consider it "a big mandate" that should not be shouldered by a single person.

Action 2: Carefully selecting the school. The findings also underlined the importance of carefully selecting the schools in which the practice model pilot project would be implemented. Here, the interest, availability, and willingness of both the school administration and the stakeholder appear as key components for successful implementation. Beyond its willingness to integrate an occupational therapist, the school itself must be open to a different type of practice, one that is based on RTI but is adapted to the concerns of those working with children with ASD. One occupational therapist suggested, "The school should be ideal, committed, and motivated." According to one stakeholder, "Teachers [in the chosen school] must demonstrate a willingness to collaborate, to remain open, and to adapt." A dedicated budget to provide equipment and free up staff to attend meetings should also be considered when choosing the right schools. According to some school staff

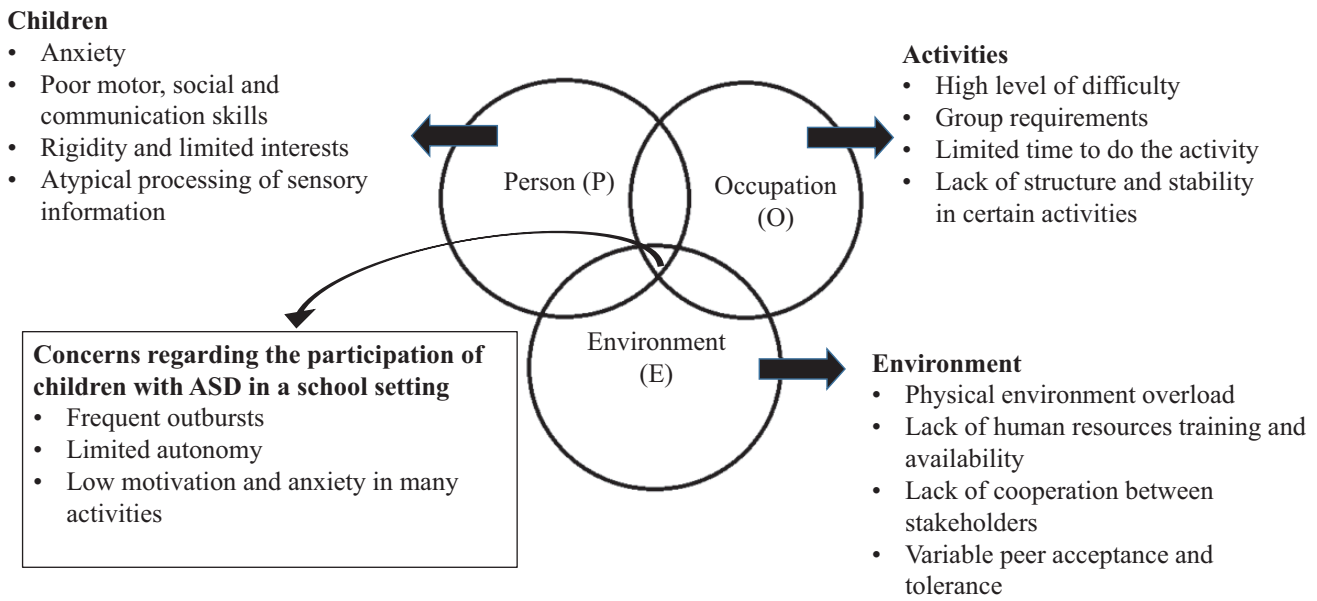


Figure 2. Synthesis of school staff members' concerns regarding the participation of children with ASD.

members, it would also be appropriate to select a school that serves many children with ASD. Finally, school staff members believed that non-selected schools must be informed of the reasons behind the rejection.

Action 3: Promoting optimal and realistic service intensity. Another perceived requirement for the successful implementation of a RTI-based practice model involves the intensity of services. For example, participants believed that hiring a single occupational therapist would be insufficient to cover an entire school board, and this decision could potentially lead to failure. Both occupational therapists and school staff members emphasized the need to ensure a direct, regular presence in schools and classrooms, for instance, 2 days a week.

Action 4: Adopting a structured and iterative approach. The findings revealed the need for a structured and iterative approach when implementing an RTI practice model. Here, all three groups' transcripts (school staff members and occupational therapists) revealed four pivotal steps. These are defined in the following paragraphs.

Step 1: Define and introduce your role. Participants in all three groups emphasized the need to inform school staff members and families of the occupational therapist's inclusion in the school team and to clarify the type of RTI interventions he or she would provide. To achieve this introduction of the role of an occupational therapist, the participants suggested giving concrete examples of occupational therapy interventions for each level while addressing their specific contributions to the ASD clients. In their view, this would create a clear set of expectations regarding these services.

Step 2: Evaluate the needs. One critical step conveyed by many participants called for the occupational therapists' collaboration with key players from the school team when prioritizing support needs. One occupational therapist who was a participant in the study suggested the use of an occupational perspective by clarifying her role using elements reported by school staff members: "Situations, contexts, or any daily routines in which [they] feel [their] usual strategies aren't working." Occupational therapists also recommended creating written documents to help identify stakeholder priorities to keep the process focused on their needs. All groups discussed the importance of holding meetings between the occupational therapist and key members of the school team to discuss observations made in a natural context, which would clarify requirements and create an accurate portrait of the current situation.

Step 3: Establish and implement an action plan. Participants also called for occupational therapists to advocate for different types of interventions that could help develop the stakeholder's ability to promote participation in children with ASD, without spreading themselves thin, and to ensure that realistic and measurable objectives are included in the action plan. They also emphasized the importance of adopting stakeholder strategies that are simple and concrete, but are also feasible in a school context and applicable to many children. Thus, a variety of interventions were proposed to help the occupational therapists share knowledge regarding specific difficulties or solutions to common challenges encountered by school staff. Proposals included training sessions, short videos, or toolkits relating to the sensory characteristics and motor difficulties of children with ASD, along with their impact on daily life, as well as basic, testable strategies.

The groups stressed the occupational therapist's need to integrate stakeholder support by sharing the problem-solving process and creating a consensus regarding the best way to apply concrete strategies in a specific context. One educational stakeholder stated,

Training, but with practical support. Because sometimes, we return from a training session with a lot of information in our heads, but when the time comes to apply it, we either lack the time or the support, and in the end, it never applied to the student at all.

Both occupational therapists and school staff members called for greater modelling: "I'm also thinking about demonstrations, not just written stuff," and "We'd like to watch you do it."

The majority of participants focused on Level 1 and Level 2 strategies and interventions that could apply to entire groups of students (e.g., video clips intended for all students regarding the use of scissors, and small workshops on self-regulation, writing, or playing). For example, one occupational therapist proposed the following interventions: "A universal classroom environment, followed by the creation of schoolyards with various activities." Other proposals included support to help detect functional problems, coaching sessions, and joint interventions between occupational therapists and school staff members. The objective of these interventions would be to identify relevant adaptations of the routine, material, physical environment, teachings, and expectations to foster greater student participation. Some believed that individualized interventions still have a place, but not everyone agreed. One occupational therapist stated, "For level 3, I decided to look elsewhere for a more in-depth assessment, because the school buys the assessment tools. It's money for that short period of time; it's [buying assessments tools] not possible." Comments from the occupational therapists also highlighted the need to consider evidence to carry effective interventions in schools, and to explore how best practices in ASD could be used with the entire class. In regards to best ASD-related practices, occupational therapists proposed using social scenarios, video modeling, and pairing.

Step 4: Conduct follow-ups. The importance of follow-ups was made clear. When asked about the best way to ensure failure for the model's implementation, both school staff members and occupational therapists pointed to an occupational therapist's decision to forego any follow-up when gauging the effectiveness of strategies and implementing the appropriate adjustments. According to some, follow-ups could help promote the use of successful strategies outside the classroom (e.g., daycare) or during school transitions. Finally, one occupational therapist emphasized the need to assess the benefits of the practice model and, more specifically, to "demonstrate the value added of the experiment [pilot project]."

Action 5: Adopting good collaborative practices. Another major theme that emerged regarding successfully implementing a RTI-based practice model was the adoption of good collaborative practices between occupational therapists and school staff members. To foster positive collaboration,

findings suggest avoiding the expert stance and attempting to develop egalitarian relationships and share responsibilities among those involved. On this topic, every group pointed to the occupational therapist's need for comprehensive knowledge regarding the school environment and the school staff members involved while adapting his or her practice to the school context. For example, one occupational therapist stated, "The values and culture of this school, I think it's important. And the school curriculum." One educational stakeholder added, "To know us and our way of working, teachers or educators, how we are and how we work." Other stated requirements included clear communication parameters from the outset along with good listening skills, regular school presence, and links to school staff members from various school-related contexts, not merely teachers. Participants proposed working with inclusion and daycare support educators, along with other professionals and support staff. School staff members also stated the importance of creating mutual support between the schools involved, beyond the involvement of occupational therapists. Finally, participants emphasized the need to inform and involve families, particularly during Level 2 and Level 3 interventions, to share as many successful strategies as possible and to better adapt the child's interventions to each of his or her living environments. Suggestions included logbooks and consultation meetings to ensure consistency between home- and school-based strategies. According to the findings, occupational therapists and school staff members could play a role when informing, involving, and obtaining the consent of families.

Action 6: Sharing with other schools. To limit potential irritants for schools that are not directly targeted by the practice model's implementation, participants in all three groups saw it fit to share the successful strategies with other schools. For example, proposals included workshops and training sessions for school staff members who may be concerned with these issues or a blog where school staff members could share their successes.

Action 7: Supporting occupational therapists. Participants stated the importance of supporting the occupational therapists in charge of implementing the practice model. Various suggestions were made, including preparatory training, written materials, peer support, mentors, resource persons, templates, and other tools. These various types of assistance could help occupational therapists feel supported, learn from experiences in other contexts, and understand the school's culture and procedures, along with the obligations associated with record keeping and consent surrounding this type of practice.

Discussion

The study discussed in this article helped develop an initial version of the *Occupational Therapists for Inclusive Schools: ASD* practice model (see Figure 3) to help better respond to the needs of children with ASD aged 5 to 12 years within a school

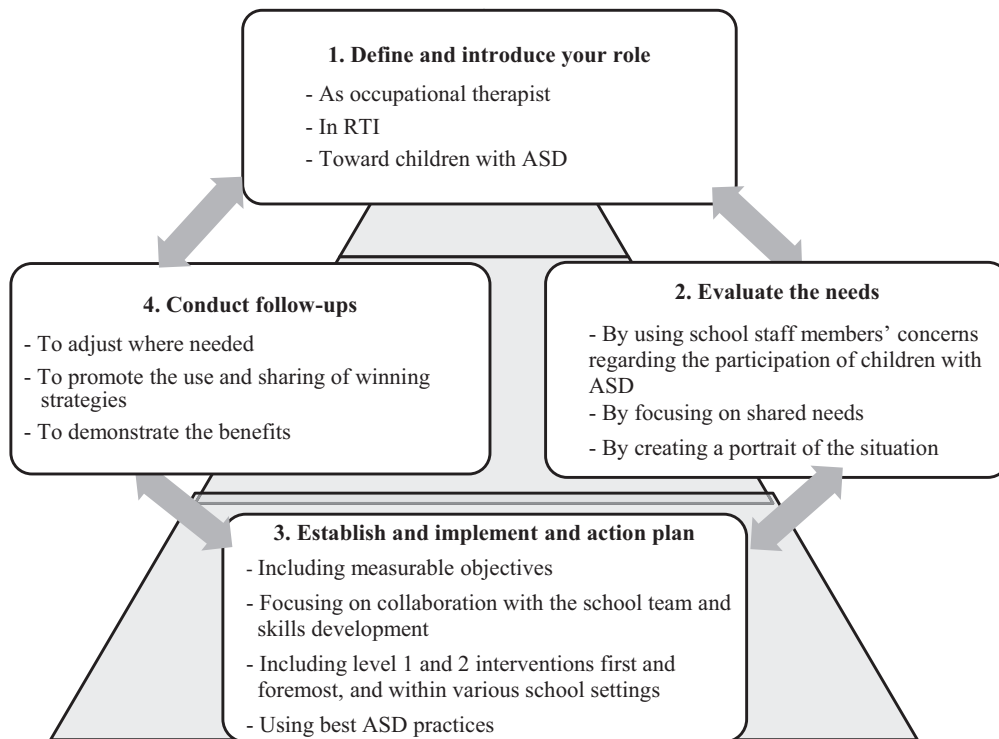


Figure 3. Proposed practice model—Occupational Therapists for Inclusive Schools: ASD. ASD = Autism spectrum disorder; RTI = Response to Intervention.

setting. The pyramid display recalls the RTI and has three levels of intervention. At the centre of the practice model, the research team chose to highlight the structured and iterative approach identified through the analysis of participant comments. The approach focused on creating an alliance between the occupational therapist and the school team to co-develop an action plan promoting the participation of children with ASD in the activities of their school environment. The links between the RTI and ASD clients are clearly established in the figure (e.g., Level 1 and Level 2 interventions that focus on common concerns). While RTI is gaining greater popularity as a preferred model in school-based occupational therapy (see Bazyk, Berthelette, et al., 2012; Missiuna, Pollock, Levac, et al., 2012; Ordre des ergothérapeutes du Québec, 2016), this study's findings provide a clear structure to guide occupational therapists when implementing this type of practice and when promoting its success. While it remains consistent with the action points proposed in the Canadian Practice Process Framework (CPPF; Davis, Craik, & Polatajko, 2013), the team believes that a simplified approach adapted to the specific, RTI-related needs of children with ASD could prove very helpful to occupational therapists involved in the implementation of the practice model.

Given the high levels of stress in school staff members who care for children with ASD (Cappe, Smock, & Boujut, 2016; Corkum et al., 2014), the team also recommends that, when assessing school needs, occupational therapists refer to the most common stakeholder concerns regarding the participation of children with ASD. Once again, our findings indicate

that these concerns are often associated with frequent outbursts and limited autonomy, along with low motivation and anxiety surrounding a number of activities. The findings also revealed that an improper match among the characteristics of these children, their living environments, and the requirements of school activities create many difficulties. The relevant activities are numerous and involve several school-related contexts that occur outside classrooms and education. The occupational therapist who implements the *Occupational Therapists for Inclusive Schools: ASD* practice model must show a willingness to go beyond traditional niches such as support for motor development, writing, or crafting. Indeed, to help schools become better equipped to include children with ASD, and to help these children participate fully in activities while applying their full potential, both the environments and the activities must allow for greater compatibility with the characteristics of these clients, such as atypical processing of sensory information, along with the challenges that surround their communication, rigidity, and limited interests. Therefore, it is essential that occupational therapists continue to build on the best ASD practices available (Canadian Association of Occupational Therapists, 2015) and move beyond classroom interventions to include participatory support in other settings, such as day-care, gyms, lunchrooms, and schoolyards. By promoting the participation of children with ASD within their school environment, occupational therapists should be able to contribute to their academic success and well-being. Inspiration could be drawn from the *Every Moment Counts* program (Bazyk, n.d.), which promotes mental health in school youths. Indeed, an

evaluation of one program component demonstrated the effectiveness of creating a positive environment to improve student participation, along with their appreciation of cafeteria meals (Bazyk, Demirrjian, Horvath, & Doxsey, 2018).

In the proposed *Occupational Therapists for Inclusive Schools: ASD* implementation model, the team also highlighted specific, ASD-related aspects and integrated key strategies, such as school-team collaboration and the sharing of successful strategies. The results underscored the importance of adopting good collaborative practices among every educational stakeholder, not merely teachers. Therefore, collaborative consultation (see Villeneuve & Shulha, 2012) becomes particularly relevant. Along with the school-team members, consultations could help identify (a) the primary needs associated with the participation of children with ASD and (b) the strategies required for any action plan focused on developing abilities within a school setting. Given the innovative nature of this type of practice and the need for support identified by the occupational therapists who took part in the study, it would also appear essential to develop training, resources, and networking opportunities for the occupational therapists mandated to implement the model. This need for support is consistent with the experience documented during Ontario's implementation of the *Partnering for Change* model, which provided training and mentoring (Missiuna, Pollock, Campbell, DeCola, et al., 2017).

Study Limitations and Future Considerations

The study supported the creation of a practice model applicable to Quebec's service offer regarding children with ASD. While the study helped identify the concerns of school staff members regarding the participation of children with ASD, only a small number from a single school board were consulted. These concerns were nevertheless consistent with other studies suggesting that children's anxiety and management difficulties regarding transitions, changes, and peer relationships do, in fact, represent challenges (Able et al., 2015; Lindsay et al., 2014). While the concerns identified can help prioritize participation-related challenges, consideration must be given to the particular context of each school. The authors acknowledge that the application of RTI to a specific client group may be criticized, as the approach is intended to benefit all students. Nonetheless, as many of the needs of children with ASD are often overlooked, it is important to identify the measures available to occupational therapists who seek to create inclusive educational environments that are equipped to promote the participation of children with ASD. Just as *Partnering for Change* (Missiuna, Pollock, Campbell, Dix, et al., 2015; Missiuna, Pollock, Campbell, DeCola, et al., 2017; Missiuna, Pollock, Levac, et al., 2012) was designed for children with developmental coordination disorder while benefiting other educational communities as well, the strategies that will eventually be put in place should promote the participation of children with and without ASD. Adapting the approach to students with ASD can also help justify the potential involvement of occupational therapists from the health network when

providing support to the school teams involved. Moreover, it would be interesting to study the potential adjustments that could help adapt the practice model to the needs of other clients, like children with intellectual disabilities. The next phase of this research will test the *Occupational Therapists for Inclusive Schools: ASD* practice model to improve it and measure its outcomes on the capacity of schools to support participation of children with ASD.

Conclusion

The main concerns for school staff members regarding the educational participation of students with ASD were identified. These elements led to the creation of an innovative, RTI-based practice model adapted to the school environments that welcome students with ASD in Quebec's occupational therapy service offer. It is expected that occupational therapists involved with school-aged ASD clients, as well as those working directly in schools, will benefit from the findings of our study and the proposed practice model.

Key Messages

- The concerns of school staff members regarding the participation of children with ASD involve many activities that may occur beyond the classroom environment.
- The *Occupational Therapists for Inclusive Schools: ASD* practice model is proposed to better meet the needs of children with ASD aged between 5 and 12 years within the school setting.
- A structured and iterative four-step approach is proposed, which could be adapted to a variety of contexts.

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