

Coaching SNAs can improve children' participation in daily living skills: A quasi-experimental pretest-posttest design study

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Abstract: Special Needs Assistants (SNAs) serve an essential role to support children with disabilities; thus, they need efficient training. The one-on-one coaching following a workshop was compared with a control group that only received a workshop. A quasi-experimental study was conducted in two public special education schools in Zaragoza (Spain); seventeen paraprofessionals and thirty-seven children participated voluntarily. The Canadian Occupational Performance Measure (COPM) was administered pre and post-intervention to evaluate changes in the participation of children with disabilities. Questionnaires for assessing competencies and needs were issued for both groups of SNAs, and the kinds of goals and the adaptations required were analysed. The intervention was guided by an occupational therapist (OT). Children in the intervention group showed significant gains in goals identified by assistant and therapist. However, both groups of SNAs indicated they had improved their skills. Through collaboration with OTs, SNAs can implement practices that enhance children' participation in activities of daily living in natural environments. SNAs' training should be carried out according to their real demands and the needs of the children they support.

Keywords: Coaching, special needs assistants, school-based occupational therapy, daily living skills.

Introduction

The number of Special Needs Assistants or SNAs (also referred to as paraprofessionals or teacher aides) is significantly increasing, both inclusive and special education (Giangreco, Broer and Edelman, 2002; Giangreco, 2010, 2021; Giangreco *et al.*, 2005; Brock and Carter, 2015; Howley, Howley and Telfer, 2017). This staff takes a relevant position in the education system, but they are not adequately trained or supervised to perform their tasks successfully (Brock and Carter, 2015; Howley, Howley and Telfer, 2017). The researchers agree that SNAs need to be qualified to help the children (Stockall, 2014; Brock and Carter, 2016; Walker,

Douglas and Chung, 2017), but little is known about the training requirements demanded in Spain.

In Spain, the SNAs work in both mainstream and special education schools. In Aragon (Gobierno de Aragón, 2017) and thirteen additional Autonomous Communities, the only requirement to be an SNA is to complete the Lower Compulsory Secondary Education Certificate (ESO in Spain, 16 years old). Only three Autonomous Communities, Basque Country, Castile-La Mancha and Castile-Leon, require a Bachillerato Certificate (Spanish Baccalaureate, from 16 to 18 years old) or a vocational training degree. Therefore, no specific training is required *de-facto* for SNAs in Spain, just the same as in other European countries (Keating, O'Connor and O'Connor, 2012; Breyer *et al.*, 2019, 2020). In other words, children with the most severe disabilities are supported by the least qualified staff members.

SNAs trained and supervised by other professionals can play several valuable roles (Giangreco *et al.*, 2005). Among others, support for self-care activities, such as toileting, dressing, functional mobility or feeding, is an important function of SNAs (Giangreco, Broer and Edelman, 2002). Several authors consider that children with multiple disabilities need to achieve independence in self-care activities to participate in the community (López-Torrijo, 2009; Lee and Morningstar, 2019). Unfortunately, few studies focus on training SNAs to improve children' participation in activities of daily living.

In the same way, it is well recognized that Occupational Therapists (OT) have the knowledge and skills to facilitate participation in occupations and daily activities (AOTA, 2014; Frolek Clark, 2016). However, OTs in European schools are a scarce resource (Hutton, Tuppeny and Hasselbusch, 2016). In fact, in Spain, only one Autonomous Community recognizes the figure of the OT in the educational system (Gobierno País-Vasco, 2004). For this reason, research is needed to recommend the implementation of OT services in schools and to find the most effective way to do it.

The OT analyses and evaluates strengths and weaknesses to improve the participation of children with difficulties in their daily routines and natural environments (Frolek Clark, Jackson and Polichino, 2011). Routines-based intervention is considered one of the best practices in OT and special education (Dunn *et al.*, 2012; Vaz *et al.*, 2017). However, ensuring that the special education services and supports are integrated into natural environments is still a challenge, and more research on contextual interventions is needed (Dunn *et al.*, 2012; Horn and Kang, 2012).

Recent OT models point out the relevance of consultative service delivery focused on improving the skills of school staff (Hutton, 2009; Bonnard and Anaby, 2016). Hence, school-based OTs need to collaborate with all team members, including SNAs (Hasselbusch and Penman, 2008; Hanft and Shepherd, 2016). Coaching is a recognized adult learning method (Trivette *et al.*, 2009) and one format to offer consultative services in OT. It is a practice used to develop the capacities of parents, caregivers or colleagues to learn new competencies, to refine existing skills and to gain a deeper understanding of their actions (Rush and Shelden, 2005).

Therefore, the coaching approach can help; on the one hand, to meet the training needs of the SNAs and, on the other hand, to support the best practices in OT. Thus, this study's primary objective was to identify what type of training for SNAs can improve children's participation in special education school by comparing one-on-one coaching versus a workshop. Our secondary objectives were a) to examine adaptations required to improve the children's participation and b) to evaluate the satisfaction of SNAs with the received training and identify the assistants' needs.

Materials and Method

Study Design

Zaragoza has five public special education schools in which 53 SNAs work. This quasi-experimental study was conducted during the 2016-17 school year in two of these five special education schools; where children who require highly specialized care derived from disabilities or communication, language and behavioural severe disorders can be enrolled (Gobierno de España, 2020). We used a non-equivalent control group pre-and post-test design and convenience sampling. Following approval from The Clinical Research Ethics Committee of Aragón-CEICA (CP-CI PI16/0247), both the assistants and the families provided informed consent before their inclusion. The principles of the Declaration of Helsinki were followed, and this study was registered with ClinicalTrials.gov (NCT04747210).

Participants and Setting

The participants from one school were allocated to the intervention group (20 SNAs-99 children) whereas the participants in the other school were allocated to the control group (11 SNAs-64 children) to avoid cross-contamination of information between groups. The participation of assistants and children was voluntary. The inclusion criteria for SNAs were as follows: (1) being available for the workshop and one-on-one coaching and (2) written consent. The inclusion criteria for children were as follows: (1) presenting difficulties in Activities of Daily Living, (2) having an assistant involved in the study, and (3) informed consent signed by parents/legal tutors. The final sample consisted of 17 assistants, 13 in the intervention group and 4 in the control group; and 37 children, 24 in the experimental group and 13 in the control group.

Measures

Sociodemographic data were collected through an *ad hoc* structured questionnaire.

Furthermore, the SNAs answered questions about their previous and continuous training and assessed their current roles in the school.

The Care Dependency Scale for Paediatrics (CDS-P) (Tork, Dassen and Lohrmann, 2008, 2009) was used to determine the children's degree of dependence. Tork and colleagues modified the adult version to apply it to the paediatric population. The CDS-P has 15 items scored on a five-point Likert scale, ranging from 1 (completely care-dependent) to 5 (almost independent). The overall score ranges from 15 to 75 points; low scores indicate more dependence. The CDS-P has shown good reliability and validity (internal consistency, inter-rater reliability, content validity, criterion-related validity and construct validity).

The primary outcome measurement was *the Canadian Occupational Performance Measure (COPM)* (Law *et al.*, 2014). The COPM is an individualized measure designed to identify occupational performance problems (self-care, productivity, and leisure activities) over time. In the interview, parent/caregivers identify activities that are problematic for the child and rate their importance (1-nothing important, 10-very important). Afterward, on a 10-point scale, the caregiver rates the child's performance for each of the participation goals (1=unable to perform, 10=performs exceptionally well). Finally, the caregiver measures their satisfaction with the child's performance (1=unsatisfied, 10=extremely satisfied). A difference of two or more in these values indicates a clinically significant change.

The types of goals were classified according to daily living activities, such as toileting, eating, feeding, hygiene and grooming, dressing, functional mobility and others (miscellanea). *Accommodations or adaptations* to enhance children's participation were registered after the intervention as a) not necessary, b) natural for the child or easy to acquire, c) rehabilitation devices or d) architectonic/extensive modifications. The adaptations were analysed as an independent element in the goals that improved performance in two or more points in the COPM.

At the end of the study, *social validity* was measured as the SNAs completed a questionnaire to assess whether the received training and the availability of the therapist for consultation (in the intervention group) had been effective. They rated each item on a 5-point Likert-type scale (from 1=nothing effective to 5=very effective). Additionally, they assessed the likelihood of recommending the training received to other colleagues and using the learned skills with the same students or with other students in the future. They rated each item on a 5-point Likert-type scale (from 1=not likely to 5=very likely). Furthermore, they also rated the preferred types of training for their professional development through a multiple-choice question.

Procedures

Both schools collaborated to implement training and follow-up procedures, such as a brief initial orientation, a training workshop, routines registration/goal setting, one-on-one coaching (only intervention group), and follow-up. An experienced OT conducted the entire process. The following design was used (Fig. 1) to perform the intervention.

Initial brief orientation. In the first school term, the assistants were informed that they could participate in a training programme. Sociodemographic data were collected, and the dates and times of the workshop were established. Once the participating assistants had been recruited, informed consent forms and questionnaires were sent to the families to join the programme voluntarily.

Training workshop. During December and January, all the assistants involved in the research attended a ten-hour training workshop divided into three sessions outside working hours. The aims were to communicate the importance of promoting autonomy in daily life activities and to provide practical solutions in order to achieve children's participation in daily

occupations. The workshop comprised various training activities, including PowerPoint lectures, case studies/videos, demonstrations and role-plays.

Routines registration and challenges. In January, during school hours, small workgroups of 4-5 assistants were created. The sessions lasted an hour and served to complete the CDS-P for each child; and the assistants asked the families questions about any item (e.g. the children's sleep patterns). Examples were also given to facilitate the formulation of goals. The OT accompanied each assistant during a workday morning for both the control and the intervention group, analysed the difficulties of participation in daily occupations, recorded routines such as schedules and places, and asked reflexive questions about the challenges observed.

The children and their families were allowed to express their needs and challenges through the communication with the assistant. The OT and the assistants collaborated to set three goals for each child. The assistants were encouraged to focus on activities that the children were trying to do or were interested in doing. They valued the importance, performance and satisfaction for each challenge in the COPM.

Coaching. From January to March (10 weeks), the intervention group received one-on-one coaching while the control group didn't. The intervention was carried out during school hours and in the settings where the occupations occur (i.e. bathroom, lunchroom, playground, hallway or classroom). Thus, the coaching sessions (number and duration) depended on the child's routines and the available time of the assistants.

The five coaching practice characteristics of joint planning, observation, action/practice, reflection and feedback, identified by Rush and Shelden, were utilized (Rush, Shelden and Hanft, 2003; Rush and Shelden, 2011).

In the context approach, the assistants were encouraged to give children more opportunities to participate in meaningful occupations. Each assistant and the OT identified the environmental factors that could change and collaborated to find the most effective solutions

and strategies they could carry out. The participants received additional support and feedback from the OT during the implementation efforts. At the end of the coaching sessions, the assistants had two to three months to apply the strategies learned.

Follow-up. A one-hour session was held in May for the control group and in June for the intervention group. The assistants evaluated those goals with the current level of children's performance and their satisfaction in the COPM. Furthermore, they completed a questionnaire to assess the received training's effectiveness (workshop or coaching), the probability of using what they had learned in the present or the future, and the preferred kinds of training.

Data Analysis

Analyses were conducted using Statistical Package for the Social Sciences (SPSS) version 26.0 and Microsoft Excel 2010. To examine the demographic characteristics of the children and their assistants in both groups, we conducted independent t-tests and chi-square tests for continuous and categorical data, respectively. The Kolmogorov-Smirnov and Shapiro-Wilk tests were used to determine whether the data were normally distributed. Data that were not normally distributed were analysed using the Wilcoxon signed-rank test. Goals and adaptations were categorized to analyse their frequencies and to allow comparison between groups. To investigate the relationship effects of the intervention, independent t-tests with 95% confidence intervals were used to examine the between-group variations for the performance and satisfaction of the COPM-1 (in baseline) and the COPM-2 (post-intervention) and their differences. The percentages of the responses to each question of the assistants' questionnaire were analysed. The criterion for significance of the findings was set at $p < 0.05$. A posteriori (post hoc) power analysis was conducted, considering an adequate statistical power above 80%. The effect sizes are presented using the means divided by the pooled standard deviation for groups with unequal sample sizes. The effect sizes were evaluated using the guidelines

proposed by Cohen (1988), considering the following intervals for d : >0.2 (small effect); >0.5 (intermediate effect); and >0.8 and higher (large effect) (Cohen, 1988).

Results

No significant intergroup differences were obtained among the participating assistants in terms of age, gender, marital status, educational level, qualifications or working hours. However, the control group's SNAs had worked for more years in the service ($p=.005$). It is striking to observe that 23.5% of the assistants were teachers ($n=4$), evenly distributed in both groups. Only one participant owned the title of 'Higher Technician in Social Integration' (Table 1).

No significant intergroup differences were obtained for the children' age and gender, or concerning the medical diagnosis; however, significant differences were found for the educational diagnosis ($p=.005$), 70.8% of the children in the intervention group presented Multiple Disability. No significant differences were found regarding the level of dependency of the children in The Care Dependency Scale for Paediatrics (CDS-P) ($p=.054$) (Table 2).

Fourteen assistants (82.4%) did not receive previous specific training as an SNA before they started working. All the SNAs had voluntarily attended theoretical continuous training workshops at their current school or another ones outside working hours. Educational Innovation and Training Centers (CIFE) offer the same courses annually to all the assistants. However, 70.6% had not received personal care training before the programme began. One hundred per cent of the assistants considered that their functions were not well defined. They valued the utility of their current roles as follows (scored from 1 to 10): supporting personal-care (mean=9.94); ensuring security (mean=9.65); facilitating communication (mean=9.12) and supporting socialization (mean=9.06). Administrative tasks were considered to be the least important (mean=4.53). There were no statistically significant differences between the groups (Table 3).

The average number of coaching sessions was 5.8, range from 3 to 8 sessions (2 SNAs=3 sessions; 8 SNAs=5 sessions; 3 SNAs=between 6 and 8 sessions); the sessions' duration depended on the assistants' available time and daily routines.

The mean performance and satisfaction of each group in the COPM were used to evaluate children' outcomes (Table 4). At baseline, no statistically significant data were obtained for children' performance or assistants' satisfaction in COPM-1. Nevertheless, the intervention group had significantly higher scores than the control group on the COPM-2 for performance ($p<.001$) and satisfaction ($p=.001$). The results of the COPM-2 showed that children in the intervention group had a substantial increase in performance (mean increase=2.4, [SD]=1.2) versus the control group (mean increase=.6, [SD]=.4), with a large effect size ($d=1.79$). The intervention group also showed an increase in satisfaction with functional goals in COPM-2 (mean increase=2.9 [SD]=1.4) versus the control group (mean increase=.6 [SD]=.6), with a large effect size ($d=1.9$).

The kind of goals for the intervention and control groups was similar as shown in Table 5 ($p=.352$). The most frequently reported goals were related to greater independence in dressing (34.2%), personal hygiene and grooming (18.9%), feeding (18%), functional mobility (13.5%), and the rest were related to eating and swallowing, toilet hygiene and other goals (e.g. handling a backpack, hanging clothes, remaining seated).

The conducted adaptations are summarized in Table 6. Only the goals that improved 2 or more points in the performance of the COPM were evaluated to ensure that the accommodations of the environment/occupations were not the main factors that hindered children's participation. A total of 41.4% were considered to be not necessary; in 23.4%, natural adaptations or those that could be easily found were used for the child, and only 3.6% needed specific rehabilitation materials. No extensive or architectural modifications could be made.

For social validity, both groups' assistants believed that their skills had improved with the

training received (Table 7). Under the SNAs in the intervention group, 61.5% (n=8) considered one-on-one coaching very effective, and 76.9% (n=10) found it very useful to have the therapist available for consultation. Many of the participants in the intervention group considered it 'quite likely' (69.2%-n=9) or 'very likely' (23.1%-n=3) to be able to generalize the learning with other children in the future ($p=.04$), and the effect size was large ($d=1.8$). The intervention group showed a higher probability of recommending training to other colleagues than the control group ($p=.006$), and the effect size was large ($d=1.9$). Both groups recognized that personalized training/coaching, either alone or combined with different training types, would be the best option for their professional development.

Discussion

Our study compared what kind of training for SNAs can obtain better functional results for children. The findings support that one-on-one coaching following a workshop can help SNAs apply their competencies to improve children's participation that was measured with individualized goals.

As in previous researches, the assistants were predominantly female (Mäensivu, Uusiautti and Määttä, 2012; Brock and Carter, 2015; Brown and Stanton-Chapman, 2017) and they all considered that their functions were not well defined (Giangreco *et al.*, 2005; Brock and Carter, 2015; Howley, Howley and Telfer, 2017).

Over 80% of our sample (n=14) recognized that they had no training as an SNA before they began working. However, some of them were teachers, social workers or had other certifications. Therefore, the assistants admit having a low level of previous training to perform their duties properly (Brown and Stanton-Chapman, 2017). It is disconcerting that the Spanish Public Education System does not require a vocational education degree (e.g. the Higher Technician in Social Integration) as a prerequisite, such as in some European countries

(Mäensivu, Uusiautti and Määttä, 2012; Breyer *et al.*, 2020). Since 1990, this qualification includes 2000 hours of theoretical and practical training (Ministerio de Educación, Cultura y Deporte, 2012).

In our investigation, 12 assistants (70.6%) reported that they had not received self-care training before the programme began; however, other studies have pointed out much lower percentages than this one (Walker, Douglas and Chung, 2017). These contradictory data seem to support the requirement of consulting assistants about their needs before suggesting training packages.

In this study, SNAs considered personal-care support as the most important current role; this finding aligns with other studies. Howley *et al.* (2017) carried out a survey and pointed out that the school staff found the support of students in personal care and functional skills ‘important’ (>70%) or ‘very important’ (29%) (Howley, Howley and Telfer, 2017). In addition, regardless of the child's age, independence in self-care seems to be also a priority for families (Chiarello *et al.*, 2010). Therefore, it is necessary to analyse these support practices as a critical issue in special education (Giangreco, 2010) and to establish training and supervision so that SNAs can provide opportunities for children's participation, especially for those with significant and ongoing support needs, like children who are enrolled in Spanish special schools.

The fact that we had such a high voluntary participation rate among the assistants contrasts with the findings of Walker (2017), who noted that the SNAs refused to participate in the coaching sessions (Walker, Douglas and Chung, 2017). In our study, the participants were motivated to collaborate with the therapist. It is possible that SNAs improved their behaviour because of being studied (Hawthorne effect), but it is also possible that active participation in learning had value-added benefits (Trivette *et al.*, 2009).

Our results showed a greater change in children of intervention group, who had more severe levels of dependence (based on the CDS-P), possibly allowing a higher improvement (Anaby

et al., 2018). Besides, some assistants needed more coaching sessions; hence, the therapist will require flexibility to the *coachees'* changing requirements to apply this approach (Rush, Shelden and Hanft, 2003; Rush and Shelden, 2011).

The assistants support the children to complete daily living activities, who could inadvertently hinder the independence of these children (Huang et al., 2013). Promoting self-care skills requires a balance between autonomy and supervision, but who are the most qualified school personnel to assess these aspects? (Giangreco, 2021). For example, two children managed to eat more independently with the fork (new skill); a girl wanted to take out/put back in things out into her bag, and she was successful; no one had asked her before what she wanted to achieve. We were surprised by such results. But did the intervention of the OT interrupt the Maslow's Hammer effect related to SNAs? The assistants may require continuous guidance to offer the appropriate level of support for each child and cannot replace the TOs (Frolek Clark, Jackson and Polichino, 2011). Besides, schools should look into different service delivery models (Giangreco, 2021).

In this study, great adaptations to improve children's participation were not necessary. Many SNAs were surprised by what children were able to do if they were given opportunities to practice; that is, they changed their perceptions concerning children's ability to learn and participate in meaningful occupations. Recent research points out that contrary to what is believed; attitudinal barriers may have a more significant impact on the participation of people with disabilities than barriers within the physical environment (Anaby *et al.*, 2013, 2018; Bonnard and Anaby, 2016). No extensive/architectural modifications could be made for reasons of time and design, although these participation barriers were taken into consideration, and the school principals were notified. In this way, the OTs can contribute to the necessary changes at both the political and service levels (Law *et al.*, 2015).

Our findings point out that SNAs can implement evidence-based practices to improve outcomes for children with disabilities through appropriate training (Hall *et al.*, 2010; Brock and Carter, 2013, 2015, 2016; Brock, Seaman and Downing, 2017). It is possible that using adult learning methods, including coaching, training in real-time, guided learning and performance feedback has facilitated the implementation of evidence-based strategies (Trivette *et al.*, 2009; Brock and Carter, 2015; Walker, 2017). Therefore, instead of teaching about different categories of disability, the training should be aligned with each child's unique needs (Brock and Carter, 2013) and each assistant. This data could encourage the design of customized training packages.

On the other hand, assistants in both groups acknowledged having improved their professional competencies through training. In other words, any training can produce an improvement in the participants' *self-perception* about their skills and knowledge (Walker, Douglas and Chung, 2017). However, our findings suggest that any training should include the children's outcomes because, firstly, in many studies these outcomes are not taken into account (Hall *et al.*, 2010; Brock and Carter, 2015), and secondly, this way it would help to show if the assistants can put into practice the skills learned.

Ten of the intervention group's assistants (76.9%) considered it very helpful to have the OT available for consultation. The cooperation with the OT can enable assistants to acquire new knowledge to help children in the school. Moreover, SNAs' training in a natural context can have better results than the guidance presented in a training classroom (Walker and Smith, 2015). Thus, school-based OTs should endeavour to provide services in natural environments and collaborate with significant adults, such as SNAs, to increase children's opportunities to participate fully (Frolek Clark, 2016).

Finally, we want to emphasize that recruit pairs of participants (assistants-children) have been a challenge. Besides, the small sample sizes produce overestimating effect size and the

observed (post-hoc) power usually is directly related to p-values. However, this trial has a pragmatic orientation and can contribute to understanding individual-centred interventions (Anaby *et al.*, 2018).

Our results support the emergence of activity-based, objective-oriented, and ecological-based therapeutic approaches (Anaby *et al.*, 2018). As the most common barriers that limit the participation of children/young people with disabilities are negative attitudes, followed by, among others, the lack of support from staff and service providers, interventions should be aimed at changing these aspects (Anaby *et al.*, 2013).

Limitations

This study is not without limitations. The sample was selected for convenience; in addition, the small sample size and the heterogeneity of the participants resulted in considerable variation within the comparison groups. Further trials, with randomized participants and more significant sample sizes, would possibly reduce these biases. Besides, neither the schools had OT service. Another limitation is that the outcome measures were based on the assistants' satisfaction and perception of the children's performance and the auto-evaluation about acquired competencies. Besides, the Hawthorne effect can't be avoided when participants are not blinded. Hence, the scores probably show higher values.

Implications for practice and future research

The findings of this study contribute to the literature in multiple ways. Firstly, the results provide a training model for SNAs based on children's participation applied in the educational context. Secondly, developing plans to incorporate OT services in school settings in Spain becomes relevant, in the same way as in other European countries (Hutton, Tuppeny and Hasselbusch, 2016). Finally, it may be advantageous for both researchers and school divisions to conduct prior evaluations before planning the training of SNAs. Further research is needed

to support the implementation of OT services in Spain's schools and the generalization of learning according to the type of training offered to SNAs.

Conclusion

Seeing that the number of SNAs is increasing in both inclusive and special schools around the world, developing effective training packages should be a priority for educational policies. Assistants need quality training and support, both before and after they are in the school. The results of this study indicate that supporting and training SNAs in natural settings can improve the participation of children with disabilities. The use of integrated learning opportunities in daily routines can be easily promoted by providing OTs' consultative services.

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Authors' note: Another paper (pending publication) reviews the fidelity of this programme's implementation of coaching practices.

Table 1. Demographic Characteristics of Special Needs Assistants.

		% (n=17)	IG % (n=13)	CG % (n=4)	p	Power (1-β)
Chronological age^a		47.35	45.54 ±7.54	53.25 ±8.26	.1 ^b	.053
Gender	Female	94.1(16)	100(13)	75(3)		
	Male	5.9(1)	0	25(1)	.235 ^c	
Marital status	Single	17.6(3)	15.4(2)	25(1)		
	Married	82.4(14)	84.6(11)	75 (3)	.65 ^c	
Educational level	Primary Education	5.9(1)	0	25(1)		
	Vocational Education	23.5(4)	30.8(4)	0		
	Baccalaureate	17.6(3)	15.4(2)	25(1)	.199 ^c	
	University Degree	52.9(9)	53.9(7)	50(2)		
Educational Background and Diplomas	Obligatory Secondary Education	5.9(1)	0	25(1)		
	Baccalaureate	11.8(2)	15.4(2)	0		
	Higher Technician in Social Integration	5.9(1)	7.7(1)	0		
	Higher Technician Pre-Primary Education	5.9(1)	0	25(1)		
	Technician Auxiliary Nursery Care	11.8(2)	15.4(2)	0	.17 ^c	
	Advanced Expert in Sign Language Interpretation	5.9(1)	7.7(1)	0		
	Social Work	17.6(3)	23.1(3)	0		
	Certificated Teacher	23.5(4)	23.1(3)	25(1)		
	Psychology	5.9(1)	7.7(1)	0		
	Geography and History	5.9(1)	0	25(1)		
Years in current position	<1	17.6(3)	23.1(3)	0		
	2-6	11.8(2)	15.4(2)	0		
	7-10	23.5(4)	30.8(4)	0		
	11-19	29.4(5)	30.8(4)	25(1)	.005 ^b	
	>20	17.6(3)	0	75(3)		
Workday	Part-time employment	5.9(1)	7.7(1)	0		
	Full-time employment	94.1(16)	92.3(12)	100(4)	.76 ^c	

^a mean ±standard deviation.^b Independent t-test; ^c Chi-square test

Note:IG=Intervention Group. CG=Control Group

Table 2. Demographic Characteristics of Children.

	n=37	IG (n=24)	CG (n=13)	p	Power (1-β)
Chronological age^a	11.7±5.1	12.66±5.1	10.07±4.9	.14 ^b	.309
	4-21	4-21	5-17		
Gender%					
girls	24.3	29.2	15.4		
boys	75.7	70.8	84.6	.44 ^c	
Medical Diagnosis%					
Cerebral Palsy	43.2	58.3	15.4		
Autism Spectrum Disorder	13.5	12.5	15.4		
Developmental delay	21.6	16.7	30.8		
Down syndrome	8.1	0	23.1		
Angelman syndrome	5.4	4.2	7.7	.070 ^c	
Intellectual disability	2.7	0	7.7		
Lennox-Gastaut syndrome	2.7	4.2	0		
Wolf-Hirschhorn syndrome	2.7	4.2	0		
Educacional Diagnosis%					
Multiple Disability	54.1	70.8	23.1		
Generalized Behavior Disorder	13.5	12.5	15.4	.005 ^c	
Developmental Delay	18.9	16.7	23.1		
Intellectual Disability	13.5	0	38.5		
Care Dependency Scale for Paediatrics-CDS-P^a	33.5	29.96±13.7 15-59	40.31±17.4 16-67	.054 ^b	.462

^amean ± Standard Deviation. Minimum-Maximum

^bIndependent t-test.; ^cChi-square test.

Table 3. Previous/Continuous Training and Role Evaluations of SNAs.

		% (n=17)	IG %(n=13)	CG %(n=4)	p
Previous training as an SNA	Yes	17.6(3)	15.4(2)	25(1)	.579 ^b
	No	82.4(14)	84.6(11)	75(3)	
Continuous training Courses	Yes	100	100	100	-
	No	0	0	0	-
Type (continuous training)	theoretical	100	100	100	-
Personal Care Training	Yes	29.4(5)	30.8(4)	25(1)	.670 ^b
	No	70.6(12)	69.2(9)	75(3)	
Are your functions well defined?	No	100	100	100	-
Importance of your current roles^a		\bar{x}(SD)	\bar{x}(SD)	\bar{x}(SD)	
	Personal Care Supports	9.94(0.2)	9.92(0.3)	10(0)	.596 ^c
	Functional Mobility	8.88(0.8)	8.92(0.9)	8.75(0.5)	.711 ^c
	Social	9.06(1.2)	9.23(1)	8.5(1.7)	.301 ^c
	Ensure security	9.65(0.6)	9.54(0.7)	10(0)	.192 ^c
	Facilitate Communication	9.12(1.5)	8.85(1.6)	10(0)	.172 ^c
	Administrative Tasks	4.53(2.1)	4.46(2.3)	4.75(1.3)	.818 ^c
	Instructional Roles and Homework	7.00(2.1)	6.92(2.1)	7.25(2.1)	.791 ^c

^a1-nothing important. 10-very important.

^bChi-square test. ^cIndependent t-test

Table 4. Children' Outcomes: Performance and Satisfaction Ratings (COPM)

	IG (n=24)	CG (n=13)	p	Effect size <i>d-Cohen</i>	Power (1-β)
Performance Baseline	2.7±1.1	2.8±0.6	.730 ^a	-.10	.092
Performance-2	5.1±1.3	3.5±0.7	.000 ^a	1.42	.996
Performance Difference	2.4±1.2	0.6±0.4	.000 ^a	1.79	.999
Satisfaction Baseline	2.9±1.5	3.3±1.0	.413 ^a	-.29	.226
Satisfaction-2	5.9±1.5	4.0±1.2	.001 ^a	1.35	.990
Satisfaction Difference	2.9±1.4	0.6±0.6	.000 ^a	1.94	.999

^aIndependent t-test.

Table 5. Frequency of Goal Type by Study Group

Number of Goals=111	%	IG	CG	p
Toileting	4.5	2.8	7.7	
Dressing	34.2	31.9	35.9	
Eating/Swallowing	6.3	8.3	2.6	
Feeding	18.0	15.3	17.9	.352 ^a
Functional Mobility	13.5	12.5	5.1	
Personal Hygiene and Grooming	18.9	16.7	12.8	
Others (miscellanea)	4.5	6.9	.0	

^aChi-square test

Note: Intervention Group=72 goals;Control Group=39 goals

Table 6. Type of Adaptations. Frequencies

		IG (Goals=72)	CG (Goals=39)
Not assessed. Does not improve performance%	33.5	30.6	89.7
<i>Goals that improve performance 2 or more points.</i>		IG (Goals=50)	CG (Goals=4)
It is not necessary%	41.4	52	100
Natural Adaptations/Easily Available%	23.4	40	0
Specific Rehabilitation Materials%	3.6	8	0
Extensive/architectural modifications%	0	0	0

Table 7. Assessment of the Training Received: Training Regarded for Professional Development.

	% (n=17)	IG %(n=13)	CG %(n=4)	P	Effect size <i>d-Cohen</i>	Power (1-β)
Have their skills improved with the training received?						
Somewhat	23.5(4)	30.8(4)	0	.240 ^a	-.24	.079
A lot	64.7(11)	53.8(7)	100			
Completely	11.8(2)	15.4(2)	0			
<i>Mean±Standard Deviation (SD)</i>	3.88±0.60	3.85±0.69	4.0±0.0			
Has the 10-hour workshop been effective?						
Somewhat effective	29.4(5)	30.8(4)	25(1)	.807 ^a		
Quite effective	64.7(11)	61.5(8)	75(3)			
Very effective	5.9(1)	7.7(1)	0			
<i>Mean±SD</i>	3.76±0.56	3.77±0.6	3.75±0.5		.03	.050
Has the coaching been effective?						
Quite effective	-	38.5(5)	-	-		
Very effective	-	61.5(8)	-	-		
Has the therapist available for consultation been effective in improving your performance?						
Quite effective	-	23.1(3)	-	-		
Very effective	-	76.9(10)	-	-		
Can you use what you learned with the same students?						
Somewhat likely	11.8(2)	7.7(1)	25(1)	.150 ^a	1.12	.509
Quite likely	47.1(8)	38.5(5)	75(3)			
Very likely	41.2(7)	53.8(7)	0			
<i>Mean±SD</i>	4.29±0.69	4.46±0.66	3.75±0.5			
Could you use what you learned with other students in the future?						
Not very likely	5.9(1)	0	25(1)	.040 ^a	1.87	.768
Somewhat likely	17.6(3)	7.7(1)	50(2)			
Quite likely	58.8(10)	69.2(9)	25(1)			
Very likely	17.6(3)	23.1(3)	0			
<i>Mean±SD</i>	3.88±0.78	4.15±0.55	3.0±0.82			
Would you recommend this type of training to other colleagues?						
Quite likely	41.2(7)	23.1(3)	100	.006 ^a	1.96	.981
Very likely	58.8(10)	76.9(10)	0			
<i>Mean±SD</i>	4.59±0.51	4.77±0.44	4.0±0.0			
What options are considered best for your training and daily practice?						
1. Workshops outside working hours	0	0	0	.053 ^a		
2. Workshops in the service	0	0	0			
3. Personalized training/coaching	17.6(3)	23.1(3)	0			
4. Training by other school professionals	0	0	0			
5. 2+3 Workshops+Coaching	47.1(8)	30.8(4)	100			
6. 3+4 Coaching+Training professionals	35.3(6)	46.2(6)	0			
<i>Mean±SD</i>	5.0±1.06	5.0±1.22	5.0±0.0		.0	.050

^aChi-square test.

Figure 1. Design and investigation procedures

