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Research Article

A Randomized Controlled Trial of Two Syntactic Treatment Procedures With Cantonese-Speaking, School-Age Children With Language Disorders

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Purpose: In this study, we aimed to evaluate the efficacy of sentence-combining (SC) and narrative-based (NAR) intervention approaches to syntax intervention using a randomized-controlled-trial design.
Method: Fifty-two Cantonese-speaking, school-age children with language impairment were assigned randomly to either the SC or the NAR treatment arm. Seven children did not receive treatment as assigned. Intervention in both arms targeted the same complex syntactical structures. The SC group focused on sentence combination training, whereas the NAR group made use of narratives in which the target structures were embedded. Pretest and posttest performances measured using a standardized language assessment were subjected to analyses of covariance mixed-effect-model analyses of variance.
Results: Children in both treatment arms demonstrated significant growth after 4 months of intervention. The main effect between treatment arms and time was not significant after controlling the pretest performance, suggesting that both treatment approaches showed similar effects. The main effect of time was significant.
Conclusions: This study provided evidence to support language intervention in the school years in Cantonese-speaking children. However, neither approach was shown to be more efficacious than the other. Future researchers could examine the effects of a longer treatment period and include functional outcome measures.

Grammar learning is the most vulnerable aspect in children with language disorders in the preschool and school years (Fletcher, 2009). These children usually experience a belated start to grammatical development in the preschool years and subsequently show deficient syntactic abilities in using complex sentences in the school years. Even though some of them appear to outgrow their grammatical problems at some point, as in the phenomenon of *illusory recovery* reported by some researchers (e.g., Fey, Catts, Proctor-Williams, Tomblin, & Zhang, 2004), their submerged language problem may reappear in later years and manifest itself as impoverished reading ability, poor academic achievement, or social–emotional problems during adolescence or adulthood (Aram, Ekelman, & Nation, 1984; Bishop & Adams, 1990; Catts, 1993; Conti-Ramsden, Knox, Botting, & Simkin, 2002; Stothard, Snowling, Bishop, Chipchase, & Kaplan, 1998; Young et al., 2002).

Grammar teaching and facilitation of syntactic development are conventional interventions practiced by speech-language pathologists (SLPs) to alleviate children's grammatical or syntactic difficulties (Eisenberg, 2006). However, there are only a small number of intervention studies on this language domain with school-age children when compared with preschool children.

Syntactic Treatment

The methods adopted in syntactic treatment can be described along a continuum of direct and indirect approaches (Scott, 1995). A key principle of the direct approach is that the intervention focuses on certain specific and observable language structures. For example, children may be presented with lists of isolated sentences designed to heighten their awareness of a particular syntactic form or pattern. Training activities may include pattern drills. This approach has a long-standing place in mainstream language arts

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pedagogy, and examples can be commonly found in elementary-level grammar exercises or language arts textbooks. Yet, the efficacy of this intervention approach has not been tested empirically and systematically in the literature, and support for this approach is mainly based on professional consensus. Another example of the direct approach is the sentence-combining (SC) procedure, which refers to the manipulation of short clauses to produce more complex and longer sentences (e.g., Mellon, 1969; O'Hare, 1973). Children may be asked to construct a single compound or complex sentence from two or more simple sentences through different types of operations, such as insertion, addition, and rearrangement. For example, children may be requested to join two or more independent sentences to form a compound sentence or a complex sentence through coordination or subordination using a coordinating conjunction or a subordinating conjunction. The semantic relations between the two clauses joined can be coordinative, causal, adversative, temporal, or hypothetical (Tyack, 1981). Examples of compound and complex structures are "Sam is fat because he always has a good appetite"; "Sam is fat, but he runs very fast"; and "Sam was fat when he was a child"—with the conjunctions "because," "but," and "when," respectively. O'Hare (1973) conducted an outcome study on the use of SC in language training in typically developing (TD) children and reported gains in the overall writing quality and "syntactic maturity" in terms of the diversity of advanced sentence types used. Neville and Searls (1985) also reported positive outcomes of SC training in enhancing sentence complexity in the compositions of children with typical language at the elementary level. In the case of children with language disorders, Tyack (1981) reported the efficacy of the SC procedures with one 10-year-old girl diagnosed with language-learning problems.

At the indirect end of the continuum, language training shifts from focusing on abstract forms to emphasizing meaningful contexts. The major aim of the indirect approach is to teach children functional language, which they can use in real-life situations. This meaning-based approach originated from the integrative approach in the bilingual education literature (Norris & Damico, 1990). This approach to training involves exposing children to different discourse genres with meaningful language forms (Goodman, 1986; Scott, 1995). For example, if the goal is to enrich a child's vocabulary, the child could be exposed to situations in which there are large numbers of new words. Empirical evidence concerning this indirect approach has emerged from studies of typical second-language learners (e.g., Langer & Applebee, 1986; Savignon, 1972). This evidence on typical learners and the valid and reliable language measures used in these studies have provided a basis for feasibility studies in clinical outcome research, in which the aim is to evaluate the parameters that need to be considered in intervention outcome studies in more advanced stages of clinical studies (Fey & Finestack, 2009). These parameters can include the type of activities and the time-frame of the intervention. In a related study, Swanson, Fey, Mills, and Hood (2005) examined the feasibility of a narrative-based language intervention approach with 10 children with specific-language impairment by using narratives as the genre medium and targeting grammatical forms and story structures. This intervention approach can be regarded as a hybrid approach highlighting both the naturalistic nature of the indirect approach and the skill-based focus of the direct approach. Swanson et al. reported feasible procedures, measures, and positive outcomes. R. B. Gillam and Ukrainetz (2006) further elaborated this hybrid approach with more detailed explanation, activities, and procedures involved in the intervention. R. B. Gillam, McFadden, and van Kleeck (1995) conducted a prospective cohort study on eight children with language disorders to compare the effectiveness of two treatment approaches—the language-skills approach and the whole-language approach—which represent the two ends of the direct and indirect continuum. Language gains were captured by two types of (posttest) measures: content measures and form measures. Different aspects of growth were observed in the two groups. The language-skills group performed significantly better in the form aspect in the posttreatment measures, whereas the whole-language group showed better content and overall story quality. Although the studies by R. B. Gillam et al. and Swanson et al. are observational and correlational in nature, the clinically significant outcomes in some of the narrative measures in the posttreatment assessment and the feasible procedures merited a larger and more meticulous experimental trial. The preliminary findings about the outcome measures that are sensitive to the intervention provide a good basis for experimental testing, which is more costly in terms of time, money, and human resources (Fey & Finestack, 2009). In a more recent study, S. L. Gillam, Gillam, and Reece (2012) compared the outcomes of two approaches—contextualized language intervention (CLI) and decontextualized language intervention (DLI)—which also represent the two ends of the direct and indirect continuum. The CLI approach emphasized clinician–child interactions such as topic continuity, whereas the DLI focused on the use of clinician-directed activities such as word definition. Each treatment group consisted of eight children with language impairment between 6 and 9 years of age. Both groups showed positive outcomes, but the gain in the CLI group was greater in both the sentence-level measure of sentence recall and the narrative-microstructure measures.

Cantonese-Speaking, School-Age Children With Language Problems

The language under investigation in the present study was Cantonese. Studies on school-age children with language problems in Cantonese are emerging. There are several typological and cultural characteristics that are specific to Cantonese/Chinese. For example, there are no tense, number, gender, and case markings in Chinese. Although there are many language specific rhetoric devices in languages, children speaking different languages with language disorders appear to exhibit certain common manifestations. For instance, young Cantonese-speaking children with

language problems, like their English counterparts, produced shorter utterances and demonstrated reduced lexical diversity (Klee, Stokes, Wong, Fletcher, & Gavin, 2004). Narrative production was one of the major challenges to Cantonese-speaking children in school years and in particular the morphosyntactic aspect (To, Stokes, Cheung, & T'sou, 2010).

To et al. (2010) described the development of narrative production skills in TD Cantonese-speaking, school-age children. The data reported in To et al.'s study were drawn from a large-scale project called the Hong Kong Cantonese Oral Language Assessment Scale (HKCOLAS; T'sou et al., 2006), which aimed to develop a standardized language assessment tool for testing school-age, Cantonese-speaking children in Hong Kong. In the narrative subtest, a child was requested to retell a story to a naïve listener using a wordless picture book after listening to a model story. The narrative produced by the child was evaluated according to four dimensions: semantic scores, use of personal reference, connectives, and syntactic complexity. The measure of syntactic complexity was composed of four complex structures: manner modifiers, clausal complements, relative clauses, and prepositional phrases. Steady growth across age groups was observed in the four dimensions and the composite scores in the normative sample. In addition to the TD children, To et al. also examined the narrative profiles of 50 Cantonese-speaking children with specific-language impairment. The four measures demonstrated good sensitivity and satisfactory specificity in discriminating children with language disorders and their age peers (To et al., 2010). Among the four measures, syntactic complexity was the most sensitive in differentiating between children with normal language and those with language disorders. The syntactic problems in school-age children with language problems were manifested as the deployment of the more complex structures and resulted in significantly fewer complex syntactic structures than their age-matched peers (To et al., 2010).

General treatment principles and procedures developed to tackle language difficulties experienced by English-speaking children are assumed to hold for children showing similar deficits and speaking other languages, including Cantonese. Cantonese-speaking SLPs use treatment approaches described in the literature in their usual practice. For instance, modeling, conversational recasting, imitation-based elicitation, and focused stimulation are some common strategies used by Cantonese-speaking SLPs in facilitating preschool children's syntactic ability. Grammar treatment methods such as the narrative-based (NAR) and sentence-based approaches described above are also commonly used by Cantonese-speaking SLPs when working with school-age children. However, there are no systematic outcome studies of these approaches on Cantonese-speaking children with language disorders.

The Need for Research With Rigorous Design

Many outcome studies reviewed above, however, may not be considered as providing the highest level of evidence, given the observational or quasi-experimental nature of the research design and/or the small sample size (cf. Cirrin & Gillam, 2008; Law, Garrett, & Nye, 2004). According to the U.S. Department of Education, randomized controlled trials (RCTs) are regarded as the "gold standard" for research (Whitehurst, 2003). RCTs provide stronger evidence than do other study designs such as case-control studies, observational studies, case reports, and expert narratives (Dollaghan, 2007; Sackett, Straus, & Richardson, 2005). The research design of an RCT involves random assignment of research participants, blinding of assessors to the type of treatment received by clients, and analysis of large sets of data samples (Fey & Finestack, 2009). Random assignment of participants to treatment arms is important because after randomization, each treatment group would represent a sample of the larger population from which the study aims to draw. This could balance the known and unknown prognostic factors and therefore minimize selection bias. Blinding the identity of treatment type to the assessors can reduce observer bias, in which the assessors might have a belief that certain treatment is better than another. Finally, studies with a small sample size or case series may not provide adequate statistical power such that the generalization of findings to other settings is limited. Therefore, in the present study we took into account the above research design requirements for an RCT and aimed to provide higher level evidence on the effectiveness of the treatment approaches.

In summary, the current study examined the efficacy of two syntax treatment procedures—SC and NAR—on school-age children with language impairment using an RCT design. Much converging evidence from longitudinal studies has revealed that many school-age children with continued language deficits at school entry tend to demonstrate unresolved and ongoing problems in various domains of language and communication in later years and do not show any significant progress on standardized tests (e.g., Aram & Hall, 1989; Bashir & Scavuzzo, 1992; Clegg, Hollis, Mawhood, & Rutter, 2005; Silva, Williams, & McGee, 1987; Snowling & Hulme, 1989; To & Arnott, 2014; Young et al., 2002). In some older studies, language deficits in children with language disorders persisted into the school years even with speech and language therapy (Strominger, 1983, as cited in Bashir & Scavuzzo, 1992). It may be that children with language disorders do benefit from intervention and show improvement in language learning across years, but their learning rate and pattern are still different from their typical peers. Given the minimal changes in the language profile in school-age children with persisting language problems, a control group without treatment was not included in the design of the present study.

The two interventions investigated in the present study, SC and NAR, were based on two different teaching philosophies. The basic premise of SC is that children have to learn the component parts of a larger whole through discrete trial training in which targets have to be made explicit. NAR, however, is based on the assumption that children learn language in context and that language forms should

be taught in relevant and meaningful contexts. Previous studies had claimed that NAR treatment would allow for more creative expressions and self-directed language production on the part of the child. Hence, NAR may allow more functional language use and better generalization than SC (Johnston, 2006). On the basis of these assumptions, it was hypothesized that NAR would lead to more improvement than SC.

Method

Sample Size Estimation

To achieve a confidence level of 0.95 and a power level of 0.8 (i.e., z[alpha] = 1.96, and z[beta] = 1.28), the total number of participants required for each treatment group was computed using a sample size calculator called G-Power 3.0.5 (Buchner, 2007). Posttest data in R. B. Gillam et al.'s (1995) study were used as a basis for determining the sample size. The measure of the percentage acceptable T-units in spoken narratives in the study by R. B. Gillam et al. was the measure most relevant to the present study, and it showed a very strong effect size (d = 1.1). The estimated sample size based on this previous study would be about 9. To be more conservative, an effect size of 0.4 was used to estimate the sample size, and this resulted in a larger required sample size. The target sample needed to detect the difference of treatment effect was estimated to be at least 52 children (i.e., 26 for each treatment arm).

Participants

The inclusion criteria were that participants should be children (a) between 6 and 12 years of age; (b) referred by SLPs, school teachers, or parents as having mild to moderate language problems; (c) scoring more than 1.25 *SD*s below the mean in the grammar subtest and the narrative subtest in HKCOLAS; (d) showing no evidence or history of neurological dysfunction, socioemotional problems, or hearing impairment as revealed in referral records in school; (e) attending mainstream schools in Hong Kong; and (f) speaking Cantonese as their first language. In Hong Kong, around 90% of the residents speak Cantonese as their first language (Census and Statistics Department, 2013). For the children who participated in the current study, they spoke Cantonese as their first language and learned English and Putonghua as academic subjects at school. Outside the class, these children use Cantonese as their default language when interacting with their families and peers. Therefore, these children can be considered as unbalanced multilinguals with Cantonese as the dominant language.

Recruitment period commenced in late November 2011 and completed in early January 2012. A total of 68 children were referred for assessment by the schools and were assessed using the standardized language test. These children studied in six different mainstream schools in Hong Kong served by four SLPs. Of these 68 children who completed the assessments, 10 children were not eligible for the study as their performances on either the grammar test or the narrative test were above −1.25 *SD*s. Another six children reported that their first language also included another Chinese dialect or that Cantonese was not their first language. These children were excluded from the randomization phase and were not followed up. In summary, 68 children were recruited, and only 52 children were included in the study. Written consent was received from the participants and their parents at the beginning of the school semester.

Blinding

A total of four SLPs and one experienced research assistant participated in the present study to conduct assessment and treatment. One of the SLPs and the research assistant conducted all the assessments and are hereafter referred to as the *research staff*. The research staff received formal training on the administration of HKCOLAS and were experienced in carrying out the test and analyzing the test results. Another three SLPs who delivered the intervention were the school-based SLPs employed by the schools using funding allocated by the Hong Kong Education Bureau for school-based, speech-therapy services. The division of labor between assessment and intervention was a blinding procedure to ensure that the personnel who carried out the assessment were unaware of the type of treatment that the children received.

Randomization and Allocation Concealment

Before the pretest, a random allocation sequence composed of the letters "A" and "B" was generated. The two letters encoded the two intervention approaches. The intervention coding and allocation sequence were concealed from the research staff and the school-based SLPs before the pretest. After the recruitment procedure, the children were allocated to Group A or Group B according to the allocation sequence. The intervention coding and allocation sequence were revealed to the school-based SLPs after the allocation had been completed, although it was still concealed from the research staff. These randomization and allocation concealment procedures can prevent selection bias as well as bias during the pretest and posttest.

Pretest

Pretest assessments were carried out in January 2012. Each participant was assessed individually by the research staff using HKCOLAS in the child's school. All the subtests for each child were carried out according to the order described in the test user's manual. The whole assessment lasted approximately 1 hr and 15 min and was divided into two sessions within the same week.

Intervention

Procedure

The intervention phase commenced in late January 2012 after the pretest. Each child received direct and individual

treatment delivered by the school-based SLP according to their allocated arm. Eight 35-min intervention sessions were provided to the participants on a 2-week basis over a 4-month period. The frequency and number of intervention sessions conformed to the most common treatment intensity provided by speech therapists in Hong Kong given the high demand for speech-therapy service (To, Law, & Cheung, 2012). Intervention was provided to the children in their schools, and take-home exercises were given to the children in both treatment arms after each session. Unfortunately, it was not possible to document the number of hours parents spent in home training and the skills they used. The children participating in the current intervention trial did not continue to receive their usual language intervention at school.

Four syntactic structures were targeted, which were common to both treatment approaches. These included (a) relative clauses in noun phrase expansion, (b) connectives conjoining clauses with different semantic relations, (c) verb phrase modification with prepositional phrases, and (d) embedded clauses in the form of clausal complements (see Appendix A for examples). These four syntactic structures were developmentally sensitive to school-age, Cantonese-speaking children during their narrative production (To et al., 2010). All the children who participated in the current study showed weaknesses in using these structures in their narratives, as shown in their weak performance in the syntactic complexity scores. In this way, targeting these structures followed the treatment principle of goal setting described by Fey, Long, and Finestack (2003):

> Appropriate specific goals would be (a) grammatical forms and operations that the child uses correctly on occasion but either omits or uses incorrectly on other occasions (i.e., partially mastered forms), or (b) developmentally appropriate forms that the child never uses, despite producing sentences and texts that call for their use (i.e., forms that the child may know to some extent but rarely or never uses). (p. 7)

The sequence of these targets was controlled for so that it was consistent in both treatment arms, and the sequence proceeded from relative clauses, to connectives, to prepositional phrases, and finally to clausal complements. Appendix B illustrates example tasks of each of the two treatment approaches. The training procedures of the SC included mainly sentence construction tasks in form of a question-answering task. Picture cards or word cards showing the content words or the conjunctions were used to assist children's sentence production. For example, for the goal of producing relative clause structures, questions designed to elicit the target structures were set. Children were then asked to describe a picture in response to these questions. In this way, children were guided to conjoin two clauses into a more complex sentence. Below is an example, and details are described in Appendix B.

> Clause 1: "The man is carrying some boxes."
> Clause 2: "The man wears an apron."
> Combined sentence: "The man who wears an apron is carrying some boxes."

Simple computer games corresponding to the picture cards were developed as one type of training material. All stimulus items for each target structure were summarized in worksheets. For each structure, there were about 12 exemplars. The SLP modeled the task and then practiced repeatedly with the children using different exemplar stimuli with the corresponding computer games, picture cards, and/or worksheets.

In the NAR approach, narrative stories were used as a medium to enhance children's use of different syntactic structures in narrative contexts. Each of the four target syntactic structures was incorporated and emphasized in four stories, and 16 stories were constructed. There were about four exemplars of the target structure in each story. Stories were depicted in pictures, which were further produced as short animated cartoons, which were then used as training materials in parallel to the computer games in the SC group. Tasks aimed at scaffolding children's story-retelling and production of the target structures were designed for each story and were produced in the form of worksheets. These tasks included question-answering tasks, a cloze passage, picture sequencing, and sentence formation of the target structures.

Each session had a set of activities and tasks that children had to complete. Take-home exercises in the form of worksheets were given to each child after each session. The task format and the target structures included in the take-home exercises were equivalent to those in the therapy session, and only the stimuli were different. The SLP ensured that children had a good understanding of the targets covered in each session and determined whether the children were ready to move onto the next level by reviewing the performance in their take-home exercises (e.g., production of the target sentences in SC or retelling of the story in NAR).

Treatment Fidelity

The school-based SLPs who delivered the intervention administered both types of intervention being trialed. To ensure that the administration of the interventions corresponded to the prototypical treatments, the SLPs received a half-day, one-on-one training session conducted by the first author in their schools. A training manual and a set of treatment materials were developed. The manual described the treatment frequency, the procedures, and the activities of each intervention. The treatment materials included pictures cards, word cards, a CD-ROM containing the computer games and cartoon stories, and take-home exercises for the two approaches. The details of the two intervention approaches were explained to the school-based SLPs in the training session, and they could contact the first author or the research staff for any enquiry about the delivery of the intervention. Two of the school-based SLPs contacted the research team twice throughout the course of the study, whereas the third SLP acknowledged that she was clear about the intervention procedures. The school-based SLPs were also requested to keep a log of each session that they delivered by stating the structure targeted and the materials (computer games/cartoons or worksheets) used in each

session. The school-based SLPs indicated that they followed the suggested sequence of the target structures for each child. The SLPs used either the computer games/cartoons or the worksheets (8.0%; 29/360 sessions) or both (92%; 331/360 sessions) as the treatment materials during each session. A possible reason of not going through all the materials may be because of time constraint. Treatment fidelity related to delivery of intervention, however, was not monitored directly throughout the course of intervention.

Outcome Measures

Various subtests from a standardized assessment were used to consider both direct (grammar and syntactic complexity) and possible indirect effects of both treatments. The standardized language assessment HKCOLAS was selected because it is a comprehensive language test for school-age, Cantonese-speaking children in Hong Kong. It is composed of six language subtests (subtests of expressive vocabulary, word definition, lexical-semantic relation, textual comprehension, grammar, and narrative production). This test has been normed on 1,120 preprimary and primary Cantonese-speaking children, with satisfactory psychometric properties (Klee, Wong, Stokes, Fletcher, & Leonard, 2009). The test provides normative data across different language domains and therefore allows fair within-subject and cross-domain comparisons, given that all subtests were normed on the same population sample.

As mentioned above, To et al. (2010) described the normative patterns of the narrative subtest in the HKCOLAS and reported the psychometric properties of this subtest when assessing children with language disorders. The four measures in the narrative subtest demonstrated excellent interrater reliability, with agreement levels ranging from 94% to 98% and good internal consistency as indicated by a Cronbach's alpha coefficient of .89. This subtest also showed good sensitivity and satisfactory specificity in discriminating between children with language disorders and their age peers (To et al., 2010). The syntactic complexity measure in the narrative subtest of HKCOLAS was chosen as one of the two primary outcome measures of the two intervention approaches. The grammar subtest in HKCOLAS was also chosen as the other primary outcome measure in the present study. It assesses a child's receptive and expressive knowledge of Cantonese grammar, and the areas include the use of aspect markers, sentence final particles, modality, adjectival phrases, relative clauses, sentence complementation, connectives, classifiers, comparatives, counterfactual adverbs, and deixis. This grammar subtest is evaluated using a picture pointing task, a question-and-answer task, and a sentence formation task.

Performances in other subtests of the HKCOLAS—including expressive vocabulary, word definition, lexical-semantic relations, and textual comprehension—were used as the indirect outcome measures of the present study to examine whether the intervention was specific to syntax. All raw scores of the subtests or measures were transformed into standard scores according to the user's manual of the HKCOLAS. We use a child at the age of 6;9 (years;months) as an example to illustrate how standard scores in HKCOLAS were computed. The child's performances in all subtests are compared against the age group of 6;8–7;7. The mean and standard deviation of syntactic complexity in the narrative subtest, for example, for this particular age group are 19.52 and 5.52, respectively. If the raw scores are 13, then the standard scores of the child on the measure of syntactic complexity are equal to −1.18 *SD*s (i.e., [13 − 19.52]/5.52). A negative standard score indicates that one's performance is below the mean performance of one's age group and vice versa. In other words, the higher the standard scores, the better the performance.

Posttest

After the eight sessions, all the children were assessed with the HKCOLAS by the research staff, who were still blinded to the group allocation of the children after the intervention phase. The procedures of the posttest were the same as those of the pretest. All the posttests took place in July 2012, about 1.50 months after the final intervention session for all children.

Statistical Analysis

To examine which treatment approach was more efficacious than the other, we conducted analyses of covariance (ANCOVAs) with each posttest outcome measure as the dependent variable and the corresponding pretest outcome measure as the covariate. Mixed-effect-model analyses of variance (ANOVAs) were also conducted, with the pretest and posttest scores as the within-subject variables and the treatment arm (i.e., NAR and SC) as the between-subjects variable, to examine the change of the performance with time.

Results

One of the school-based SLPs resigned from the schools just before the intervention phase started, and a replacement SLP could not be recruited. The seven children from the corresponding schools did not receive the scheduled treatment of the research project or the usual treatment at school over the intervention phase. ANOVAs results indicated that the age and the pretest performance (including both primary and indirect outcome measures) of these seven children as a group were not significantly different from the group who received assigned treatment (all ps > .05). The posttest performance of these seven children was also assessed after consent from the children and their parents. On the basis of intention-to-treat analysis, all participants involved in the trial have to be followed up, and data have to be analyzed according to their original random group assignment. This procedure aimed to reduce the possible effect of attrition, which may alter the assumption of random assignment (Lachin, 2000). However, to unravel the effect induced by specific treatment, the results were also analyzed

with these seven children excluded. Figure 1 summarizes the flow of participants throughout the study.

Table 1 illustrates the participant characteristics and the language performances before the intervention phase according to the treatment arms. The scores in Table 1 are presented in mean standard scores of the HKCOLAS. There were no significant differences between the two groups in terms of age and all the pretest primary and indirect outcome measures. Tests of homogeneity of variance using Levene's test showed that the variances of the two groups in the primary and indirect outcome measures were also not significantly different (all *p*s > .05).

Comparing NAR and SC Groups

ANCOVAs were conducted for each outcome measure, with the corresponding pretest performance as the covariate. No main effects of treatment arm were observed for the primary and indirect outcome measures (all *p*s > .05) after controlling for the pretest performances, suggesting that no one approach was more efficacious than the other.

Pretest and posttest performances for each subtest of the HKCOLAS are summarized in Table 2. Mixed-effect-model ANOVAs were also conducted for each outcome measure, with treatment arm as the between-subjects factor and time (pretest and posttest) as the within-subject factor. The main effect of time is also summarized in Table 2. The effect of time on the primary measures of grammar and narrative syntactic complexity—grammar, $F(1, 50) = 30.11$, $p < .001$, partial $\eta^2 = .38$; narrative syntactic complexity measure, $F(1, 50) = 25.14$, $p < .001$, partial $\eta^2 = .34$—and the indirect measures of expressive vocabulary and semantic scores in narrative were significant—expressive vocabulary, $F(1, 50) = 12.48$, $p = .001$, partial $\eta^2 = .20$; narrative semantic scores, $F(1, 50) = 4.27$, $p = .04$, partial $\eta^2 = .08$—indicating that both groups showed significant changes in these measures over time.

Comparing the NAR-R, SC-R, and No-Treatment Groups

To disentangle the treatment specific effect, the children who did not participate in the intervention phase were excluded from the treatment groups. In regard to their performance, the 45 children who received either the NAR treatment or SC treatment were analyzed again. To avoid confusion, these groups were called the NAR-R group and the SC-R group. Similarly, ANCOVAs were conducted with pretest performance as the covariate. Results again showed that the effects of treatment arm on the primary and indirect outcome measures were not significant after controlling for the pretest performance (all *p*s > .05). This implied that no one approach was more efficacious than the other.

To examine the main effect of time, we conducted mixed-effect-model ANOVAs, and the results are summarized

Figure 1. Flow of the participants throughout the study. NAR = narrative-based; SC = sentence-combining.

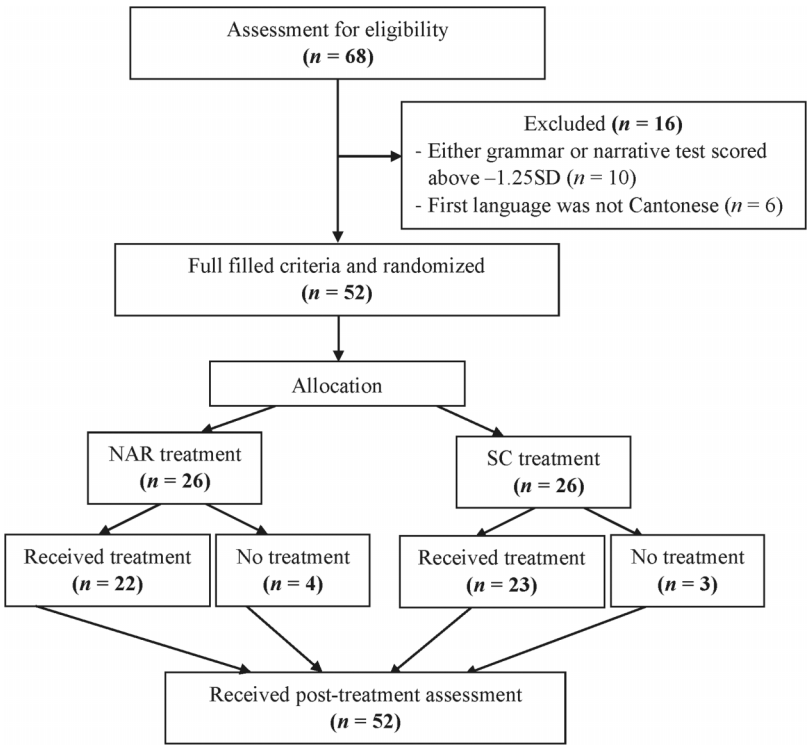

Table 1. Participant characteristics and pretest scores using the Hong Kong Cantonese Oral Language Assessment Scale.

Characteristic	NAR (*n* = 26)	SC (*n* = 26)	Group difference		
			*df*s	*F*	*p*
Female:male	8:18	8:18			
Age (years), *M* (*SD*)	8.22 (0.92)	8.33 (1.06)	1, 50	0.17	.68
Age range (years)	6.84–10.06	6.93–10.87			
Pretest baseline measures, *M* (*SD*)					
Grammar	–1.85 (1.20)	–2.23 (1.56)	1, 50	0.95	.33
Narrative (syntactic complexity)	–1.27 (1.00)	–1.80 (1.12)	1, 50	3.31	.08
Narrative (reference)	–1.31 (1.23)	–1.46 (1.36)	1, 50	0.18	.67
Narrative (semantic)	–1.12 (1.06)	–1.19 (1.09)	1, 50	0.06	.81
Narrative (connective)	–1.05 (0.76)	–0.90 (0.85)	1, 50	0.44	.51
Lexical-semantic	–1.51 (0.89)	–1.62 (1.00)	1, 50	0.20	.66
Expressive vocabulary	–1.95 (1.18)	–1.87 (1.36)	1, 50	0.06	.81
Word definition	–0.92 (1.10)	–1.05 (0.89)	1, 50	0.23	.64
Textual comprehension[a]	–0.80 (0.82)	–0.99 (1.14)	1, 49	0.46	.50

Note. NAR = narrative-based; SC = sentence-combining.

[a]The data of one participant in the textual comprehension task were not complete because of technical problems.

in Table 3. The patterns were similar to the results using intention-to-treat analysis as shown in Table 2, except that the difference in the measure of the semantic scores in narrative was no longer significant.

The performances of the no-treatment group were generally examined. To compare the degree of changes before and after the intervention phase in the three groups (no-treatment, NAR-R, and SC-R groups), the effect size of the treatment conditions on the two primary outcome measures over time was investigated using partial η^2. Partial η^2 is a measure of variance that indicates the proportion of variance of a dependent variable that is attributable to another variable. One-way, repeated-measure ANOVAs were conducted for each group (see Table 4). The no-treatment group demonstrated no significant gains in either grammar, $F(1, 6) = 0.12$, $p = .743$, partial $\eta^2 = .02$, or narrative syntactic complexity, $F(1, 6) = 2.17$, $p = .191$, partial $\eta^2 = .27$. The NAR-R and SC-R groups demonstrated significant growth in the two primary outcome measures. With reference to the effect size, the NAR-R group showed a similar degree of improvement in narrative syntactic complexity to that of the SC-R group (partial $\eta^2 = .35$ vs. .37), whereas their improvement in the grammar test appeared to be greater than that of the SC-R group (partial $\eta^2 = .62$ vs. .34).

Discussion

In the present study, we compared the efficacy of NAR and SC intervention approaches in facilitating the acquisition of complex syntax in Cantonese-speaking, school-age

Table 2. Main effect of time for primary measures and indirect measures of intervention effect by treatment group (narrative-based [NAR] and sentence-combining [SC]).

Domain	Treatment arm	Pretest	Posttest				
		M (*SD*)	*M* (*SD*)	*F*	*df*s	*p*	Partial η^2
Grammar	NAR	–1.85 (1.20)	–1.04 (1.13)	30.11	1, 50	<.001	.38
	SC	–2.23 (1.56)	–1.59 (1.20)				
Narrative (syntactic complexity)	NAR	–1.27 (1.00)	–0.59 (1.10)	25.14	1, 50	<.001	.34
	SC	–1.80 (1.12)	–1.00 (1.05)				
Narrative (reference)	NAR	–1.31 (1.23)	–1.02 (1.29)	2.46	1, 50	.12	.05
	SC	–1.46 (1.36)	–1.20 (1.46)				
Narrative (semantic)	NAR	–1.12 (1.06)	–0.91 (1.17)	4.27	1, 50	.04	.08
	SC	–1.19 (1.09)	–0.96 (1.22)				
Narrative (connective)	NAR	–1.05 (0.76)	–0.67 (0.89)	1.95	1, 50	.168	.04
	SC	–0.91 (0.85)	–0.92 (1.08)				
Lexical-semantic	NAR	–1.51 (0.90)	–1.26 (0.82)	3.79	1, 50	.06	.07
	SC	–1.62 (1.00)	–1.49 (0.87)				
Expressive vocabulary	NAR	–1.95 (1.18)	–1.33 (1.03)	12.48	1, 50	.001	.20
	SC	–1.87 (1.36)	–1.60 (1.36)				
Word definition	NAR	–0.92 (1.10)	–1.18 (1.08)	0.07	1, 50	.79	.001
	SC	–1.05 (0.90)	–0.71 (1.13)				
Textual comprehension	NAR	–0.80 (0.82)	–0.62 (0.82)	1.48	1, 49	.23	.03
	SC	–0.99 (1.14)	–0.83 (1.03)				

Table 3. Main effect of time for primary and indirect measures of intervention effect by treatment group (NAR-R and SC-R), with the no-treatment group excluded.

Domain	Treatment arm	Pretest *M* (*SD*)	Posttest *M* (*SD*)	*F*	*dfs*	*p*	Partial η^2
Grammar	NAR-R	–1.87 (1.16)	–0.97 (1.11)	36.85	1, 43	<.001	.46
	SC-R	–2.33 (1. 61)	–1.60 (1.27)				
Narrative (syntactic complexity)	NAR-R	–1.39 (1.02)	–0.64 (1.12)	23.90	1, 43	<.001	.36
	SC-R	–1.77 (1.14)	–0.88 (1.01)				
Narrative (reference)	NAR-R	–1.29 (1.21)	–1.17 (1.30)	1.55	1, 43	.22	.04
	SC-R	–1.49 (1.39)	–1.13 (1.44)				
Narrative (semantic)	NAR-R	–1.00 (1.11)	–0.84 (1.26)	3.24	1, 43	.08	.07
	SC-R	–1.17 (1.11)	–0.91 (1.17)				
Narrative (connective)	NAR-R	–0.97 (0.79)	–0.56 (0.88)	2.85	1, 43	.10	.06
	SC-R	–1.00 (0.82)	–0.91 (1.13)				
Lexical-semantic	NAR-R	–1.34 (0.86)	–1.12 (0.80)	1.67	1, 43	.20	.04
	SC-R	–1.65 (1.04)	–1.59 (0.79)				
Expressive vocabulary	NAR-R	–1.75 (1.02)	–1.27 (1.09)	11.95	1, 43	.001	.22
	SC-R	–1.84 (1.42)	–1.59 (1.37)				
Word definition	NAR-R	–0.93 (1.15)	–1.14 (1.17)	0.03	1, 43	.86	.001
	SC-R	–1.01 (0.93)	–0.74 (1.18)				
Textual comprehension	NAR-R	–0.87 (0.84)	–0.67 (0.86)	1.48	1, 43	.37	.02
	SC-R	–1.00 (1.09)	–0.92 (1.04)				

Note. NAR-R = group of children who received the narrative-based treatment and who were analyzed again; SC-R = group of children who received the sentence-combining treatment and who were analyzed again.

children with language impairment using an RCT design. Children received eight sessions of individual therapy with the school-based SLPs over a period of 4 months. Both treatment arms appeared to be equally efficacious in facilitating syntactic growth as measured by the standardized grammar subtest and the syntactic complexity measure in the narrative subtest. That there was greater improvement in the two primary syntactic measures than in the indirect measures is evidence for the specificity of the two treatments to syntactic difficulties in school-age children. Post hoc subgroup analyses were conducted, with children having no treatment being excluded. Similar patterns were observed with reference to the effectiveness of the two treatment approaches. That is, no one approach was more effective than the other. In addition, the no-treatment group demonstrated minimal growth in the two primary outcome measures when compared with those who received treatment. The more robust and specific discrepancy in the change of and the effect size of the intervention between the two treatment groups (NAR-R and SC-R) and the no-treatment group provided some evidence that the syntactic growth in the two treatment arms was likely to be an intervention-induced effect. However, it should be noted that as the number of participants in the no-treatment group was only seven and that this group was not randomly assigned, the post hoc inclusion of this group may not provide adequate statistical power for a significant difference to be detected.

Comparable Degree of Improvement

It was hypothesized that NAR may be more effective in enhancing the use of complex syntactic structures given its premise of bridging the gap between the targeted skills learned in clinic and use of language skills in other contexts.

Table 4. Main effect of time for the primary outcome measures in subgroup analyses in the NAR-R, SC-R, and no-treatment groups.

Domain	Pretest *M* (*SD*)	Posttest *M* (*SD*)	*M* change	*F*	*dfs*	*p*	Partial η^2
Grammar							
NAR-R (*n* = 22)	–1.87 (1.16)	–0.97 (1.11)	+0.90	33.55	1, 21	<.001	.615
SC-R (*n* = 23)	–2.33 (1.61)	–1.60 (1.27)	+0.73	11.42	1, 22	.003	.342
No-treatment (*n* = 7)	–1.65 (1.28)	–1.50 (0.96)	+0.15	0.12	1, 6	.743	.019
Narrative syntactic complexity							
NAR-R (*n* = 22)	–1.39 (1.02)	–0.64 (1.12)	+0.75	11.36	1, 21	.003	.351
SC-R (*n* = 23)	–1.77 (1.14)	–0.88 (1.01)	+0.89	12.70	1, 22	.002	.366
No-treatment (*n* = 7)	–1.22 (1.12)	–0.95 (1.30)	+0.27	2.17	1, 6	.191	.266

Note. NAR-R = group of children who received the narrative-based treatment and who were analyzed again; SC-R = group of children who received the sentence-combining treatment and who were analyzed again.

For the most part, the outcomes of the two approaches were considered to be comparable and were generally specific to syntax. This may indicate that both approaches possessed the active ingredients that are important for facilitating the use of complex syntactic structures. First, both language treatment approaches included focused linguistic input of the target structures (e.g., Fey, Cleave, & Long, 1997; Fey, Cleave, Long, & Hughes, 1993; Nelson, Camarata, Welsh, Butovsky, & Camarata, 1996; Proctor-Williams, Fey, & Loeb, 2001). Children received frequent presentation of the syntactic structures in a focused manner with a number of exemplar structures. In addition, children were also given frequent opportunities to practice. Children in the SC arm were asked to practice the exemplar structures in different trials, whereas children in the NAR arm practiced the exemplar structures via story-retelling and the sentence-production task. Second, both approaches in the present study respected the principle of functionality (Johnston, 2006). The activities and stimuli designed for both approaches emphasized the authentic use of language in pragmatically relevant situations rather than simple drilling exercises. For example, when the use of relative clauses was targeted in the SC program, children were asked to answer a "who" question in a context with a number of characters with some distinctive features, and the children needed to differentiate the characters using relative clauses. In the NAR program, stories targeting relative clauses included several characters and entities. Children were required to make clear references when retelling the stories. These activities required purposeful and natural use of specific language forms to achieve authentic communication goals.

Changes of Indirect Outcome Measures

The gains observed in the two treatment groups were generally specific to the treatment target—that is, syntax. Some gains were also observed in both treatment arms for expressive vocabulary, which assessed a child's ability to name single words. Effect sizes, however, indicated that this gain was smaller than that observed for the primary outcome measures, particularly in the case of the SC treatment arm. This simultaneous improvement in the semantic domain was not a priori planned, as the treatment was devised with syntax as the primary target. The growth might have been because when the children were requested to formulate complex syntactic structures, complex ideas were involved, and higher level vocabulary was used. As a result, changes in the semantic domain might also have been induced.

Comparing Studies on English-Speaking Children

The observation that both approaches led to similar outcomes in Cantonese-speaking children contrasted with those of R. B. Gillam et al. (1995). In that study, the English-speaking children in the NAR program demonstrated fewer advanced microstructures (e.g., causal/temporal relations, mean length of utterance) in their oral and written narratives than those in the language skill-based program. The discrepancy between the current findings and those in R. B. Gillam et al.'s study may be due to the nature of the stories used in the NAR approach. The stories in the NAR program in R. B. Gillam et al.'s study might not have been specifically designed for specific syntactic forms. This "nonspecificity" may be one of the original assumptions of the "whole language" approach (Norris & Damico, 1990), in that educators or SLPs do not need to determine the specific language forms to be taught or learned. Instead, it is assumed that useful language structures will arise in contexts naturally. With well-planned interactions and activities, children are expected to explore the language actively, and learning will eventually occur. However, without explicit skill instruction, children with language problems may not be as competent as their typical peers in learning specific grammatical forms in natural contexts. The two treatment approaches in the present study underlined the specific structures to be learned, and children were scaffolded to use these target structures with relevant activities. Emphasizing specific target structures may therefore be an integral part in syntactic complexity training for school-age children.

The discrepancy between the findings in the current study and R. B. Gillam et al.'s (1995) study might indicate a language-specific characteristic of Chinese-speaking children. Chinese speakers tend to rely more on contextual cues (Li, 1998) and inference (LaPolla, 1993) for sentence comprehension. Cantonese-speaking children might have advantages in learning via the NAR approach when compared with the English-speaking counterparts. The claim, however, would require cross-linguistic studies with systematic control of the stimuli.

In the subgroup analysis, whereby children without treatment were analyzed as a different group from the two treatment groups, slightly more improvement was noted in the NAR-R group than in the SC-R group in the grammar subtest, as revealed in the effect size. Yet, the pattern was not robust. The growth in the narrative syntactic complexity measure in the NAR-R group was similar to that in the SC-R group. Similar observations were reported in S. L. Gillam et al.'s (2012) study in which both the CLI and DLI groups demonstrated gains in all the language measures, in particular the sentence-level measures, but the CLI group showed greater improvement than the DLI group. Observations in the present study and S. L. Gillam et al.'s study might point to direction that emphasizing functional text-based activities might be slightly more successful than discrete skill approaches in raising children's awareness of syntactic structures. However, stronger evidence would be needed to support this claim.

The gains noted in the narratives measures in the CLI group were three times greater than those of the DLI group in S. L. Gillam et al.'s (2012) study. Such a difference was not observed in the present study in the narrative measure between the NAR and SC groups, who exhibited comparable treatment effect size. This variation between the present study and S. L. Gillam et al.'s study might be related to the difference in service delivery model and treatment

dosage used in the two studies. Children in the present study received eight individual 35-min intervention sessions once every 2 weeks over a 4-month period, whereas S. L. Gillam et al. provided 100-min group intervention sessions 5 days per week for 6 weeks. It might be possible that more obvious gain difference in the narrative measure between the NAR and SC groups could be observed when more intensive and group interventions were provided, as in the difference in the CLI and DLI groups in S. L. Gillam et al.'s study.

Limitations

Although this study improves the understanding of the efficacy of the SC and NAR procedures to syntax intervention for children speaking a language other than English, there are limitations that need to be considered. First, in the present study we focused on standardized assessment measures that may not be the best option for charting the course of language development (McCauley & Swisher, 1984). Instead, functional assessment tools such as teacher or parent questionnaires can be used to capture possible improvement in daily contexts. Because these measures may better reflect changes in language use in naturalistic contexts, differences between the two approaches might be revealed. Second, the inclusion of the no-treatment group in the present study was a post hoc decision. The participants were not randomly assigned to the group, and the number of children was also small, which led to a small degree of freedom. As a result, there may not be enough statistical power to detect statistically significant changes across time in this group. Third, practice effects on the standardized test may be a possible reason for the observed improvement. Fourth, treatment fidelity was not monitored in the present study. Direct or indirect observations of treatment sessions could be built into the design in future outcome studies so as to ensure that interventions are delivered as intended (Kaderavek & Justice, 2010). Evidence of treatment fidelity is regarded as an essential component in behavioral intervention studies (Resnick et al., 2005). In addition, parent involvement was not taken into account. It may be possible that parents offer variable contribution to children's learning. Moreover, in the current study we only considered relatively short-term outcomes of the treatment, and follow-up data were not included. Follow-up studies can inform the longer term impact of the intervention.

Conclusions and Future Studies

The current study contributes to the literature by showing that language intervention is beneficial to school-age children with language problems. Both treatment approaches investigated in the present study followed the intervention principles that have been described for younger children. The positive outcomes of the two approaches may support the view that these principles and techniques are also useful and important in the school years (Johnston, 2006). The NAR approach appeared to be slightly more effective. Future researchers may examine whether children can maintain the gains over a period beyond the end of the intervention. Finally, subgroup analyses could be conducted specifically to investigate the responsiveness to treatment with reference to children's language profiles, and a bigger sample would be required.

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Appendix A

Definitions and Examples of the Syntactic Structures Targeted in the Study

Below are examples of the four syntactic structures targeted in both treatment arms. These syntactic structures were commonly used by Cantonese-speaking children in school years, and their occurrence contributed to the advancement of the syntactic complexity in later years.

1. A *relative clause* is a form of a subordinate clause serving to modify a noun phrase. The relative clause occurs before the noun phrase rather than the noun phrase before the relative clause as in English.

Zung1Gwok3	*faat3sang1*	*ge3*	*dei6zan3*
China	happen	particle	earthquake

"The earthquake that happened in Mainland China."

2. *Connectives* are devices that conjoin clauses and encode specific semantic relations.

Causality: *jan1wai6* "because"
Concessive: *daan6hai6* "but"
Hypothetical: *gaa2jyu4* "if"
Coordinating: *m4daan1zi2* "not only"
Temporal: *jin4zi1hau6* "and then"

3. A *prepositional phrase* refers to a phrase that is composed of a preposition and a noun phrase as the complement. Preposition phrases are used to modify verb phrases.

zoeng1	*di1*	*saam1*	*fong3*	*faan1*	*jap6*	*ji1gwai6*	*jap6min6*
preposition	classifier	clothes	place	back	into	wardrobe	inside

"Put the clothes back to the wardrobe."

4. A *clausal complement* refers to a clausal structure that is embedded in the object position of a sentence.

Siu2Ming4	*san1jat1nin4*	*hei1mong6*	*ho2ji3*	*hok6sik1*	*laai1*	*siu2tai4kam4*
Siu Ming	New Year	wish	can	learn	play	violin

"Next year, Siu Ming wishes to learn to play the violin."

Appendix B (p. 1 of 2)

Example Tasks of the Sentence-Combining and Narrative-Based Treatment

1. An example of the sentence-combining treatment with the target of relative clauses

- Task: The speech-language pathologist (SLP) presented the picture to a child and asked the following questions that elicit the production of a noun phrase with a relative clause in a sentence.
- Take-home exercises: The speech-language pathologist (SLP) presented the picture to a child and asked the following questions that elicit the production of a noun phrase with a relative clause in a sentence.

Question-answering task:

Verbal instructions[a] presented	Written instructions in worksheets	Possible answers from children
(1) 邊個喺度搬緊貨呀? "Who is carrying boxes?"	誰在搬貨物?	著住圍裙嗰個男人搬緊貨。 "The man who is wearing an apron is carrying boxes."
(2) 邊個戴住頂淨色嘅帽呀? "Who is wearing a plain cap?"	誰戴著淨色的帽子?	唔小心推跌罐頭嗰個男人戴住頂淨色帽。 "The man who accidently knocked down the cans is wearing a plain cap."
(3) 邊個喺度揀緊凍肉呀? "Who is choosing frozen meat?"	誰在選購凍肉?	著住格仔西裝嗰個人揀緊凍肉。 "The man who is wearing a checker suit is choosing frozen meat."
(4) 邊個著住間條衫? "What is wearing a striped top?"	誰穿著間條衫?	揀緊甜筒嗰個哥哥著住間條衫。 "The man who is choosing an ice-cream cone is wearing a striped top."
(5) 邊個孭著個小朋友? "Who is carrying a baby?"	誰前面背著寶寶?	推住架超級市場車嗰個女人孭住個小朋友。 "The woman who is pushing a shopping cart is carrying a baby."
(6) 邊個要用拐杖行路? "Who walks with a cane?"	誰要拿著拐杖走路?	岩岩入嚟嗰個老人家要用拐杖行路。 "The old man who just is passing through the gate walks with a cane."

[a]There are two forms of Cantonese, spoken and written forms. If instructions were read aloud verbally by SLPs, they were in spoken form. If the instructions were printed on worksheets, they were in written form.

2. An example story of the narrative-based treatment with the target of relative clauses

a. Story presentation:

- Task: The SLP presented the story to a child verbally with or without picture support depending on the child's level.

1. 家輝新年嘅時候收到好多親戚俾佢嘅利是錢,
佢打算用呢啲錢買一部佢最想玩嘅電子遊戲機;

During the lunar new year, Ka Fai received a lot of red pockets which were given by his relatives. He planned to use the money to buy a video game that he really wanted.

2. 但係當佢經過客廳嗰時,
睇到電視新聞報導講述中國發生嘅地震;

However, when he passed through the living room, he learned from the news report that there was an earthquake (that) happened in Mainland China .

3. 佢覺得失去家園嘅地震災民非常可憐,
亦為佢哋感到好難過;
於是家輝即刻決定將全部利是錢捐去災區,
去幫助嗰啲有需要嘅人;

He thought that the people who lost their home in the earthquake were very pitiful. He also felt deeply sorry for them. Ka Fai decided to donate all his money to the charity to help the people who needed help.

4. 媽媽對咁有愛心的家輝感到好驕傲,
同時亦表揚佢十分懂事。

The mother was very proud of Ka Fai who is so considerate and praised him, "Such a good boy!"

Example Tasks of the Sentence-Combining and Narrative-Based Treatment

b. Question-answering:

- Task: The SLP asked the following questions to assist the child's story comprehension. Then the child was asked to sequence the pictures in a correct order.

1. 家輝係咪好鍾意打機呢? 你點知呀?
Did Ka Fai like play video game? How do you know?

2. 家輝知道中國發生地震後有乜嘢感覺呀?
How did Ka Fai feel after learning the earthquake in Mainland China?

3. 家輝係咪一個有同情心嘅人呢? 你點知呀?
Was Ka Fai a person with empathy? How do you know?

4. 最後家輝點樣用啲利是錢呢?
How did Ka Fai use the money from the red pockets at the end?

5. 媽媽支唔支持家輝嘅決定呢? 你點知呀?
Did the mother support Ka Fai's decision? How do you know?

c. Cloze passage:

- Task: The SLP guided the child to fill out the information on the basis of the story.

1. 家輝 _____ 收到很多 _____ , 他打算用這些錢買一部 _____。
During _____, Ka Fai received a lot of _____. He planned to use the money to buy a _____.

2. 但是 _____ 時 , 看到電視新聞報導講述 _____;
However, when _____, he learned from the news report that there was _____.

3. 他覺得 _____ 很可憐 , 亦為他們感到很難過 ; 於是家輝即刻決定將利是錢全部捐給災區 , 去幫助 _____;
He thought that _____ was very pitiful. He also felt deeply sorry for them. Ka Fai therefore decided to donate all his red pocket money to the charity to help _____.

4. 媽媽對 _____ 的家輝感到很驕傲 , 並表揚他十分懂事。
The mother was very proud of Ka Fai who is _____ and commended that he was a great boy.

d. Retelling:

- Task: The SLP guided the child to retell the story using the pictures.
- Take-home exercises: Worksheets with a new story targeting the same structure and including similar tasks are given to the child as home practice.