

*Specific Language Impairment: Defining the Disorder and Identifying Its Symptoms in
Preschool Children*

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Abstract

The aim of this short paper is three fold: Firstly, it is to define Specific Language Impairment (SLI) and to identify the various symptoms of the disorder so as to establish a better understanding of these children through interaction with them, their parents, and other allied professionals, and how to go about designing an appropriate lesson to work with such children. Secondly, it introduces SLI within the Triple-D framework which encompasses Diagnostics (which includes screening, assessment and evaluation), Dialogics (collaborative consultation and counseling) and Didactics (design of an intervention program and implementation of the program). It also touches briefly on the current application of the Triple-D framework in the early intervention program for preschool children with SLI carried out by early childhood educators in Singapore. Thirdly, this paper will illustrate with an example how to design an action lesson plan incorporating simple strategies to be used with such children.

A Brief Introduction to Specific Language Impairment (SLI)

Recent studies (e.g., Dockrell & Lindsay, 2001; McArthur, Hogben, Edwards, Heath & Mengler, 2000; Paul, 2007) at the beginning of the new millennium have indicated that the co-occurrence of Specific Language Impairment (SLI for short) and learning difficulties as well as social problems is as high as 60%. The term *Specific Language Impairment* is a very controversial term and is still being debated among the professionals such as speech language therapists, psychologists and researchers. The considerable controversy regarding the term most appropriate to define SLI with alternative terms is changing over time to reflect changes in how the language disorder has been conceptualized (Paul, 2007). Recently, two broad categories of children with language difficulties have been identified: (1) the first group consists of those with primary language difficulties; and (2) the second group consists of those with secondary language difficulties (Tomblin, Zhang, Buckwalter & O'Brien, 2003).

Let me briefly describe the two categories. In the first category, children with primary language difficulties are found to be developmentally typical, yet they manifest a delayed development in language comprehension and/or production with an unknown etiology (Dockrell, Lindsay, Connelly, and Mackie, 2007; van Weerdenburg, Verhoeven & van Balkom, 2006). In the second category, children with secondary language disorders display language difficulties that are

associated with cognitive, sensory, biological, neurological or socio-emotional deficits. These deficits also include autism, hearing impairment and/or brain injury (Schuele & Hadley, 1999).

However, children with SLI are severely under-diagnosed and are often shadowed within the population of children with special needs, due to the controversy associated with defining SLI and the heterogeneous nature of this group of children (Botting & Conti-Ramsden, 2000; Dockrell & Lindsay, 2001). Although this group of children with SLI struggle at school since preschool days, they do not display obvious difficulties, especially, according to Paul (2007), as literate language becomes highly decontextualized with meaning coming from a given text alone.

It is not within this paper to discuss about various issues pertaining to the controversy embracing the term of SLI. For those who are interested to find out more, they can look for the various papers cited here found in the References at the end of this paper.

Operating Definition of SLI

As a matter of convenience, the following definition (although there are also many others) from Yap and Chia (2009) has been used here.

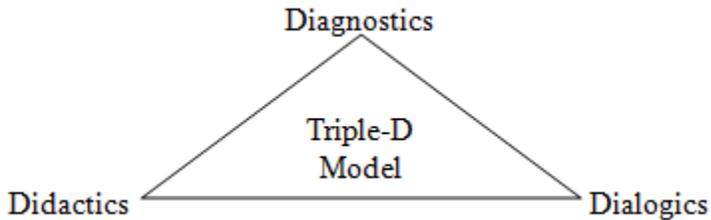
SLI is “NOT a speech disorder – that is a result of difficulties in coordination of oral-motor musculature (Cohen, 2002) – but a specific (NOT non-specific) developmental (NOT acquired) language disorder affecting BOTH receptive and expressive language skills with varying degree of severity (either receptive language difficulty is more severe than expressive language difficulty or vice versa) typically in the context of normal development (Cohen, 2002), whose prevalence could be between 6 and 8 per cent of preschool children (Simpson & Rice, 2002), and its onset may be as early as three or four years old (Ervin, 2001), with impoverished vocabulary, word-finding difficulties and problem in acquiring new words (Bishop, 1997; Cohen, 2002), problem in producing and comprehending syntactically complex sentences (especially in passive voice) and often preferring to express in short utterances (Ervin, 2001; Muter & Likierman, 2008), and may be at risk of developing a literacy disorder (Manzo & Manzo, 1993) – either process or product literacy deficit (Chia, 2007) – and is known to persist into adolescence and adulthood (Simpson & Rice, 2002). It is not the result of any known neurological, sensory-motor, intellectual, or social-emotional-behavioral deficits (Ervin, 2001; Muter & Likierman, 2008). In other words, children with SLI may be intelligent and healthy; they are not socially inept, idle, or unmotivated. It affects the development of vocabulary (Joanisse, 2004), grammar (Rice, 2000, 2002), and discourse skills (Levy, 2003). The causes of SLI are still unknown, but recent research studies (e.g., Bishop, 2002; Viding et al., 2003) suggest the possibility of genetic origin” (para.1) However, SLI may co-exist with other learning disabilities such as dyslexia (Muter & Likierman, 2008).

The Triple-D Model to Understand and Help Children with SLI

The main focus of this paper is to identify young children at risk of having SLI at preschool level. In order to do so, I have used the following Triple-D model⁵ (see Figure 1),

⁵ The Triple-D model has been used in the training of special education professionals in Singapore.

FIGURE 1: Triple-D Model for SNT Training (Chia & Kee, 2012a)



covered within the Lesson Study approach (it is beyond the scope of this paper to delve into the approach), which is currently used in more than 50% of the mainstream schools in Singapore, for three reasons:

(1) It is important for an early childhood educator or preschool teacher to be able to identify young children at risk of having SLI and it must be stressed here we are not interested in stigmatizing them with such a controversial label as SLI. Some kind of an informal checklist or inventory is needed to help in the identification or initial screening.

(2) Once a child at risk of having SLI has been identified at the initial screening, the early childhood educator or preschool teacher will consult other colleagues including the centre manager, administrator and/or principal to all for a meeting with the child's parents. Parents will be advised or encouraged to bring their child for a proper assessment to be done by professionals such as speech language therapists and psychologists.

(3) With the assessment results known and a report is given, the early childhood educator or preschool teacher can design an appropriate action plan to help the child with SLI.

The first step is known as Diagnostics; the second, Dialogics; and finally, the third, Didactics. Chia and Kee (2012a) have defined each of the phases as follow:

Diagnostics. Also known as educational diagnostics, it refers to evidence-based psycho-educational assessment, evaluation and profiling of a learner suspected to have learning and/or behavioral challenges. Diagnostics adopts a trans-disciplinary approach that requires every professional (be he or she a teacher, therapist, counselor or psychologist) to know and understand different levels and types of assessment (formal and/or informal) in order to evaluate and profile the children with special needs that he/she is working or going to work with. For more information, refer to Chia and Kee (2012b).

Dialogics. The term *dialogics* refers to the process whereby communicating parties (among the professionals as well as with the parents of the concerned child with SLI) mutually reaches agreement of the intended communication with verification of each other perceived perspective and contextual understanding, perceived use and relationship of communicated concepts and perceived meanings.

Didactics. The simple terms *didactics* means to teach, to coach or to educate. It also includes the content to be taught, teaching aids, teaching methods, media used, the school and the classroom where learning takes place, and learning as the main activity of pupils. It can also be defined as an early childhood educator's or preschool teacher's reflection of practice that concerns how she can realize her educational or teaching objective.

Screening Procedure for SLI

Children with SLI vary widely in terms of their patterns of strengths and weaknesses, and such patterns do change over time. The primary symptoms of SLI are delayed speech and slow language development. These difficulties significantly affect the performance of these children in their learning and do also impact on and influence their social and emotional behaviors.

The challenges faced in identifying young children with SLI are many. For instance, SLI can co-exist with other learning disabilities such as dyslexia and autism spectrum disorder. Hence, it is not easy even for professionals such as speech language therapists and psychologists to be very certain in diagnosing a child for SLI if another developmental or learning disorder co-exists with the condition. In another instance, children whose native language is not English or they come from dysfunctional families may be misdiagnosed or mistaken for SLI. It is always better for early childhood educators or preschool teachers to leave the final diagnosis to the professionals.

I have co-developed with a researcher an informal checklist of SLI traits (see Chia & Poh, 2009) to help early childhood educators or preschool teachers in identifying children at risk of having SLI (see Appendix 1). It is important for them to explain to the children's parents and encourage them to seek professional assessment as soon as possible so that early intervention can be rendered before the condition becomes more troublesome at a later stage, especially when these children go to primary school.

Here are some formal standardized language tests administered by speech language therapists in Singapore to identify children at risk of having SLI:

- Clinical Evaluation of Language Fundamentals-Preschool
- Iowa Severity Rating Scales for Speech and Language Impairments
- Oral and Written Language Scales
- Renfrew Language Scales
- Test of Language Development-Second Edition: Primary

Intervention Strategies to Help Young Children at Risk of SLI

It is pointless, or even meaningless, for any early childhood educator or preschool teacher to be informed that a child has SLI as stated in a psychological assessment report. What is most important is what can be done to help such a child.

To give the label SLI to a child identified as such is of not much help unless the early childhood educators or preschool teachers know what the child's strengths and weaknesses after he/she has been assessed by a speech language therapist or psychologist.

As we know, children with SLI often have difficulties learning to read, write and spell due to subtle underlying phonological and morphological challenges (Nation, Clark, Marshall, & Duran, 2004). Semantic difficulties also form a major learning challenge for these children and they include having small (receptive and expressive) vocabularies, restricted word knowledge and over-reliance on non-specific words, poor understanding figurative language (e.g., metaphors and similes), and difficulties in integrating meaning across sentences (Paul, 2007). Moreover, in terms of oracy or spoken language, difficulties encountered by these children with SLI include difficulties in initiating and sustaining conversations, poor turn-taking, limited oral conversations (often very brief, unelaborated and dysfluent) with numerous false starts, repetitions of words and/or phrases, and giving inappropriate levels of content (Botting & Conti-Ramsden, 1999). The best intervention strategy is to approach SLI from this learning sequence: domain → processes → knowledge → skills → abilities → specific tasks.

Below are some examples of three different literacy activities – reading, spelling and writing – that early childhood educators/preschool teachers can intervene to help young children with SLI (see Appendix 2 for a blank Lesson Action Plan):

Domain	Literacy		
Processes	Reading	Spelling	Writing
Knowledge	<ul style="list-style-type: none"> Phonological knowledge in consonants and vowels 	<ul style="list-style-type: none"> Phonological knowledge in consonants and vowels 	<ul style="list-style-type: none"> Syntactic knowledge in proper sentence formation
Skills	<ul style="list-style-type: none"> Segmenting individual letter sounds in a word Blending letter sounds to form a meaningful word 	<ul style="list-style-type: none"> Deciphering the letter sounds of a word heard Differentiating between ending phonograms [-k/] and [-ck] 	<ul style="list-style-type: none"> Form a meaningful sentence Construct a grammatical correct sentence
Abilities	<ul style="list-style-type: none"> Able to segment a word into correct syllables Able to identify closed and open syllables 	<ul style="list-style-type: none"> Retain the final silent [-e] in words to preserve their original meanings, e.g., <i>dy<u>e</u>ing</i> (NOT <i>dying</i> when [-e] is dropped) 	<ul style="list-style-type: none"> Form an interrogative statement from a declarative statement
Specific Tasks	<ul style="list-style-type: none"> Differentiating between short vowel /ă/ as in <u>a</u>pple and long vowel /ā/ as in 	<ul style="list-style-type: none"> Applying the doubling rule in one-syllabic words when joining with a 	<ul style="list-style-type: none"> Joining two simple sentences with the right conjunction. Putting the right

	ape. <ul style="list-style-type: none"> Discriminating letter sounds, e.g., between /b/ and /d/ 	suffix beginning with a vowel, e.g., <i>run</i> + <i>-ing</i> → <i>run<u>n</u>ing</i>	punctuation mark [!] for an exclamatory statement
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Conclusion

There are many other intervention strategies that can be used to work with preschool children with SLI and they include the following activities: matching sentences with the correct pictures that describe them, sequencing several sentences to form a meaningful paragraph, creating concrete poems to elicit meanings of the words, reciting nursery rhymes and other catchy poems, using word-picture association activities (e.g., flash cards) to improve vocabulary, using a situational dictionary to work on picture-based conversation, giving picture-based dictation (give oral instructions for the child to draw an appropriate picture), forming a meaningful sentence using words that have been jumbled up, sequencing correctly a series of picture cards to narrate a meaningful story. The list of activities is endless.

References

- Bishop, D.V.M. (1997). Comprehension in developmental language disorders. *Developmental Medicine and Child Neurology*, 21, 225-238.
- Bishop, D.V.M. (2002). The role of genes in the etiology of specific language impairment. *Journal of Communication Disorders*, 35, 311-328.
- Botting, N., & Conti-Ramsden, G. (2000). Social and behavioral difficulties in children with language impairment. *Child Language Teaching and Therapy*, 105-120.
- Chia, N.K.H. (2007). Bridging reading and writing: A cognitive equation of literacy. *ASCD Review*, 13, 5-12.
- Chia, N.K.H., & Kee, N.K.N. (2012a, Summer). The triple-D framework (diagnostics, dialogics and didactics) for training of special education professionals in Singapore. *Unlimited Human!* 36, 39-40 & 46.
- Chia, N.K.H., & Kee, N.K.N. (2012b). *Professional development of special needs therapists through Lesson Study within the Triple-D model of special education in Singapore*. Abstract published in the program book (pp.46) of The World Association of Lesson Studies International Conference 2012: Challenging, Enhancing, Nurturing, November 28-30, 2012, National Institute of Education, Nanyang Technological University, Singapore.
- Chia, N.K.H. & Poh, P.T.C. (2009). *Specific language impairment: Characteristics & classroom intervention*. Singapore: Pearson/Prentice Hall.
- Cohen, N.J. (2002). Developmental language disorders. In P.Howlin & O. Lidwin (eds.), *Outcomes in neurodevelopmental and genetic disorders* (pp.26-55). New York, NY: Cambridge University Press.
- Dockrell, J.E., & Lindsay, G. (2001). Children with specific speech and language difficulties: The teachers' perspective. *Oxford Review of Education*, 27(3), 369-394.

- Dockrell, J.E., Lindsay, G., Connelly, V., & Mackie, C. (2007). Constraints in the production of written text in children with specific language impairments. *Exceptional Children*, 73(2), 147-165.
- Ervin, M. (2001). *Specific language impairment: What we know and why it matters*. Retrieved from <http://www.asha.org/about/publications/leader-online/archives/2001/sli.htm>.
- Joanisse, M.F. (2004). Specific language impairments in children: Phonology, semantics and the English past tense. *Current Directions in Psychological Science*, 13(4), 156-160.
- Levy, Y. (2003). Basic language skills in children with neuro-developmental disorders and the notion of brain plasticity. In Y. Levy & J. Schaeffer (eds.), *Language competence across populations: Toward a definition of specific language impairment* (pp.353-382). Mahwah, NJ: Lawrence Erlbaum Associates.
- Manzo, A.V., & Manzo, U.C. (1993). *Literacy disorders: Holistic diagnosis and remediation*. Fort Worth, TX: Holt, Rinehart and Winston.
- McArthur, G.M., Hogben, J.H., Edwards, V.T., Heath, S.M., & Mengler, E.D. (2000). On the specifics of specific reading disability and specific language impairment. *Journal of Child Psychology and Psychiatry*, 41(7), 869-874.
- Muter, V., & Likierman, H. (2008). *Dyslexia: A parents' guide to dyslexia, dyspraxia and other learning difficulties*. London, UK: Vermilion.
- Nation, K., Clarke, P., Marshall, C.M., & Duran, M. (2004). Hidden language impairments in children: Parallels between poor reading comprehension and specific language impairment. *Journal of Speech, Language and Hearing Research*, 47(1), 119-132.
- Paul, R. (2007). *Language disorders from infancy through adolescence: Assessment and intervention* (3rd ed.). Missouri: Mosby Elsevier.
- Rice, M.L. (2000). Grammatical symptoms of specific language impairment. In D.V.M. Bishop & L.B. Leonard (eds.), *Speech and language impairments in children: Causes, characteristics, intervention and outcome* (pp.17-34). East Sussex, UK: Psychology Press.
- Rice, M.L. (2002). A unified model of specific and general language delay: Grammatical tense as a clinical marker of unexpected variation. In Y. Levy & J. Schaeffer (eds.), *Language competence across populations: Toward a definition of specific language impairment* (pp.63-95). Mahwah, NJ: Lawrence Erlbaum.
- Schuele, M.C., & Hadley, P.A. (1999). Potential advantages of introducing specific language impairment to families. *American Journal of Speech-Language Pathology*, 8(1), 11-22.
- Simpson, J., & Rice, M.L. (2002). Top 10 things you should know ... about children with specific language impairment. In the *Know* fact sheet. Retrieved from <http://www.merrill.ku.edu/>.
- Tomblin, J.B., Zhang, X.Y., Buckwalter, P., & O'Brien, M. (2003). The stability of primary language disorder: Four years after kindergarten diagnosis. *Journal of Speech, Language and Hearing Research*, 46, 1283-1296.
- Van Weerdenburg, T.M., Verhoeven, L., & van Balkom, H. (2006). Towards a typology of specific language impairment. *Journal of Child Psychology and Psychiatry*, 47(2), 176-189.
- Viding, E., Price, T.S., Spinath, F.M., Bishop, D.V.M., Dale, P.S., & Plomin, R. (2003). Genetic and environmental mediation of the relationship between language and non-verbal impairment in 4-year old twins. *Journal of Speech, Language and Hearing Research*, 46, 1271-1282.

Yap, E., & Chia, N.K.H. (2009). *Defining specific language impairment: What is it?* Retrieved from <http://www.lsesnet.com/blog/>.

About the Author

Dr. Noel K.H. Chia is an assistant professor of early childhood and special needs education at the National Institute of Education, Nanyang Technological University, Singapore. Recently, he has been duly elected into Omega Gamma Chi, a national honor society for special education teachers, which is an integral part of the National Association of Special Education Teachers.

Appendix A

Informal Checklist⁶ for Early Childhood Educators/Preschool Teachers to identify Preschoolers at risk of having Specific Language Impairment (SLI)

NOTE: This is not a diagnostic assessment to identify young children for Specific Language Impairment (SLI). Early childhood educators or preschool teachers should recommend parents to seek professional help for their children suspected of having SLI. Professional advice and a formal standardized assessment should be sought from a speech language therapist or pathologist

Instruction: Tick in the appropriate boxes for traits present, absent or not sure.

Traits of Specific Language Impairment (SLI)	Observation		
SECTION 1: Problems with Speaking & Speech Development	Present	Absent	Not Sure
1. Late to talk or show signs of speech delay when younger			
2. Unclear speech and others find it difficult to understand what is spoken			
3. Have trouble communicating with other children during play or group discussion			
4. Have poor and confusing intonation when making a statement or a request			
5. Have difficulty in pronouncing multisyllabic words accurately			
6. Peppering speech with verbal fillers (e.g., <i>ums</i> , <i>ers</i> , <i>whatevers</i>)			
7. Commit numerous grammatical errors when talking			
8. Jumble up words while trying to explain something to a listener and hence, make it difficult for the listener to follow			
9. Speak in short simple sentences			
10. Find it difficult to take turns in conversation with others			
11. Can be quite fixated on a specific topic during conversation			
12. Find it difficult to tell jokes			
Sub-total score (Number of ticks under the Present column)			
SECTION 2: Problems with Listening & Following Oral Instructions	Present	Absent	Not Sure
1. Have trouble following multiple-step verbal instructions or orders			

⁶ This informal checklist is adapted from Chia, N.K.H. & Poh, P.T.C. (2009). *Specific language impairment: Characteristics & classroom intervention*. Singapore: Pearson/Prentice Hall.

2. Tend to omit certain parts of verbal instructions, especially if there are several parts to the instructions			
3. Find it difficult to follow a conversation and/or to respond appropriately			
4. Have difficulty in understanding jokes			
5. Encounter difficulty in following the plot of a story in a movie or on TV			
6. Find it difficult to follow a happening that is described			
Sub-total score (Number of ticks under the Present column)			
SECTION 3: Other Problems with Language & Language Development			
	Present	Absent	Not Sure
1. Display problems in phonological processing, and hence, have reading and/or spelling difficulties			
2. Encounter word-finding difficulties (i.e., finding the right word to say)			
3. Find it difficult to form <i>wh</i> -questions and/or trouble in focusing on the comprehension of these questions			
4. Tend to use a declarative sentence as an interrogative sentence when asking a question or making a request			
5. Have problems in transforming sentences from active to passive voice or vice versa			
6. Encounter difficulty in understanding sentences in passive voice			
7. Have difficulty in stringing words together to form proper sentences, active and/or passive			
8. Possess limited vocabulary or poor word knowledge			
9. Confuse with tense and aspect of verbs			
10. Have problems with the morphological structure of the past tense and past participle forms of regular and irregular verbs			
11. Confuse with subject-verb agreement (i.e., concord), where the subject can be either noun or pronoun			
12. Encounter difficulties using conjunctions to join sentences to form either compound or complex sentences			
Sub-total score (Number of ticks under the Present column)			
SECTION 4: Miscellaneous Others			
	Present	Absent	Not Sure
1. Manifest short-term verbal memory difficulties			
2. Have difficulty playing with small toys for pretend or imaginative play			
3. Encounter problems when playing word games (e.g., Scrabble)			
Sub-total score (Number of ticks under the Present column)			

SECTION 5: Co-existing Difficulties	Present	Absent	Not Sure
1. Dyslexia or specific reading disability			
2. Dysorthographia or specific spelling disability			
3. Autism spectrum disorder			
Sub-total score (Number of ticks under the Present column)			

How to score:

A child is at risk of SLI if the following scores are obtained:

For Section 1: At least 6 or more ticks under Present column

For Section 2: At least 3 or more ticks under Present column

For Section 3: At least 6 or more ticks under Present column

For Section 4 and Section 5: At least 3 or more ticks under Present column from both sections put together

Follow-up action:

Advise the parents to bring their child to seek professional advice and assessment from a qualified speech language therapist.

Appendix 2

Lesson Action Plan

Domain			
Processes			
Knowledge			
Skills			
Abilities			
Specific Tasks			

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