The GAPS download is intended as both a research and 'clinical' tool for use by both education professionals and speech language therapists.

The trustees would just like to comment that:

a) The GAPS has been on sale since 2007 and we have had some very positive feedback on its role as an early part of an assessment tool kit to identify children at risk of developmental language disorder and literacy difficulties. Importantly it has a well designed and executed standardisation on 668 UK children. There are many simple tests on the market and in use that do not have this strength.

b) 'Screening' of whole classes/cohorts of children is a well discussed topic and one that remains contentious and there are several reviews of the literature which suggest it may not be particularly useful. In some parts of the world eg USA it is becoming more common but it has to be considered whether this is a good use of professional time, especially SLT time within UK. However as a 'screener' of a group children causing concern we contend the GAPS stands up well.

c) Some research that will validate its specificity (not too many false positives or false negatives) is still ongoing and forms part of the research we have recently sponsored. Some of the assessment eg nonwords have also been absorbed into other assessments eg an app which is being standardised afresh.

d) The GAPS has been used as the basis of several 'screener' tests in different languages **including French, Farsi, Slovenian, Dutch, Greek, Hebrew, Romanian, Italian, Lithuanian, Polish, Estonian, Catalan, Cantonese** and we can provided some information on these or contact details where it might be helpful for research or clinical purposes.....we do not know in all cases how far the research into producing a valid tool has progressed (although we have some of the original test sheets and communications surrounding syntactic differences etc).

We will be pleased to have any feedback on use of the GAPS. Please email to admin@hvdl.org.uk

**GAPs within the academic literature. Please see below for some brief details of where GAPS has been referenced (not a complete listing):**

**The development and validation of the Short Language Measure (SLaM): A brief measure of general language ability for children in their first year at school**

[Jessica Matov](https://onlinelibrary.wiley.com/action/doSearch?ContribAuthorStored=Matov%2C+Jessica) [Fiona Mensah](https://onlinelibrary.wiley.com/action/doSearch?ContribAuthorStored=Mensah%2C+Fiona) [Fallon Cook](https://onlinelibrary.wiley.com/action/doSearch?ContribAuthorStored=Cook%2C+Fallon) [Sheena Reilly](https://onlinelibrary.wiley.com/action/doSearch?ContribAuthorStored=Reilly%2C+Sheena)

February 2020 International Journal of Language & Communication Disorders

... Moreover, it is postulated that the task does not seem to be influenced by factors, such as gender (Seeff-Gabriel et al., 2010). Concerning the relationship between socio-economic status and sentence repetition ability, the existing evidence is contradictory, since there are studies which have contended there is a relationship between high SES and better performance on SRT (Roy et al., 2014; Balladares et al., 2016), whilst others have reported no such influence (Gardner et al., 2006). Some limitations of this investigation are reported as follows. ...

**Sentence Repetition as a Tool for Screening Morphosyntactic Abilities of Bilectal Children with SLI**

* Dec 2017 [Front Psychol](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5723908/). 2017; 8: 2104.
* Eleni Theodorou Maria Kambanaros Kleanthes K Grohmann

... Results showed that the proposed service delivery model can facilitate the detection of children in need of SLT in pre-school and primary school years, who do not have access to adequate support at the moment. When young children start school with speech, language and/or communication needs, they carry a greater risk of developing problems in literacy and numeracy learning (Botting, Simkin, & Conti-Ramsden, 2006; Brown et al., 2015; Gardner, Froud, McClelland, & Lely, 2006; Guyer et al., 2009; Snowling, Running head: Speech and Language Therapy Service Delivery - John, Bishop, & Stothard, 2001). If language difficulties are resolved early and oral skills continue to improve at the same rate with development, then school performance will be within the normal range (Snowling et al., 2001). ...

**Speech and language therapy service delivery: overcoming limited provision for children**

* [**Public Health**](https://www.sciencedirect.com/science/journal/00333506)[Volume 151](https://www.sciencedirect.com/science/journal/00333506/151/supp/C), October 2017, Pages 39-50
* L. M. T. Jesus J. Martinez A. R. Valente M. C. Costa

... In a similar vein, findings provide inconclusive evidence for NWR. There is evidence that NWR is free of SES influence (e.g, Gardner et al., 2006; Balladares et al., 2016); however, other studies seem to show that NWR is affected by SES (e.g.,Roy et al., 2014). The disparity in results has been linked to task differences. ...

**Independent and Combined Effects of Socioeconomic Status (SES) and Bilingualism on Children’s Vocabulary and Verbal Short-Term Memory**

Frontiers in Psychology, 25 August 2017 Natalia Meir, Sharon Armon-Lotem

... Roy et al. (2014) purposefully over-sampled from low SES groups (n = 208 in the low group versus n = 168 in the mid-high group), whereas Gardner et al’s (2006) standardisation sample was designed to be more demographically representative. Whereas Gardner et al (2006) used just parental occupation as their proxy for SES (and they do not specify whether it was maternal or paternal occupation that was recorded), Roy et al. (2014) collected data on both the occupation and the education level of the primary carer, although they allocated children to SES groups solely on the basis of where they lived. Roy et al. (2014) reported a significant association between children's repetition scores and both the occupation and education level of the primary carer, but only for the low SES group. ...

**Socio-economic status affects sentence repetition, but not non-word repetition, in Chilean preschoolers**

Jan 2016 - First Language

* Jaime Balladares Chloe Marshall Yvonne Griffiths

... Sentence repetition is a component of many different spoken language tests devised to diagnose SLI (Gardner, Froud, McClelland & van der Lely, 2006; Seeff-Gabriel, Chiat & Roy, 2008; Semel, Wiig & Secord, 2003). The task requires the child to repeat back a recorded or spoken sentence as accurately as they can. ...

**Profiling SLI in deaf children who are sign language users**

Book Chapter Dec 2014

* Rosalind Herman Katherine Rowley Chloë Marshall Kathryn Mason Gary Morgan

... SR task (English): The items of the English SR task were constructed based on suggestions from various studies (e.g. Gardner, McClelland, & van der Lely, 2006; Riches & Davis, 2009; Marinis, Chiat, Armon-Lotem, Piper, & Roy, 2011; Armon-Lotem, 2013). The task consists of 20 sentences which assessed subject-verb agreement, tense-marking (past tense regular and irregular), copula–BE and auxiliary–BE, object question formation, articles, actional passive construction, prepositional phrases and phrasal embedding. ...

**Measuring Grammatical Development in Bilingual Mandarin-English Speaking Children with a Sentence Repetition Task**

Article in Journal of Education and Learning; Vol. 3, No. 3; 2014

Chai Ping Woon Ngee Thai Yap Hui Woan Lim Bee Eng Wong

... At follow-up at 4 years of age, children were categorised as having typical or impaired language on the basis of performance on a battery of tests that yielded nine language measures: Verbal Comprehension and Naming from the British Ability Scales (BAS) (Elliott, Smith & McCulloch, 1997), Sentence Repetition and Non-word Repetition from the Grammar and Phonology Screening Test (GAPS) (Gardner et al., 2006), Information and Sentence Length indices from the Bus Story test (Renfrew, 1991), third person singular and past tense measures from the Test of Early Grammatical Impairment (TEGI) (Rice & Wexler, 2001), and General Communication Composite from the Children’s Communication Checklist-2 (Bishop, 2003). A principal component was extracted from the first six of these language measures to provide the summary score of language ability shown in Fig. 1, which was the factor score of the first component scaled to mean of 100 and SD of 15. ...

**No population bias to left-hemisphere language in 4-year-olds with language impairment** [PeerJ](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4137668/). 2014; 2: e507.

Article Aug 2014 Dorothy V M Bishop Georgina Holt Andrew J O Whitehouse Margriet Groen

... Both measures rose to above 80%; however, for sentence recall alone, further supporting its utility as a sensitive clinical marker of, and screener for, SLI. Also drawing on non-word and sentence repetition, the Grammar and Phonology Screening (GAPS) test (Gardner, Froud, McClelland, & van der Lely, 2006) was designed to identify children aged up to 6 years and 6 months who are at risk of academic failure due to underlying difficulties with language structure (van der Lely & Marshall, 2010). The GAPS employs novel elicitation procedures suitable for young children and was standardised in the UK on a large number of children (n =668). ...

**Speech and language screening for school children**

Chapter Jan 2014

* C.K.S. To & W.L. Arnott

... Both measures rose to above 80%; however, for sentence recall alone, further supporting its utility as a sensitive clinical marker of, and screener for, SLI. Also drawing on non-word and sentence repetition, the Grammar and Phonology Screening (GAPS) test (Gardner, Froud, McClelland, and van der Lely, 2006) was designed to identify children aged up to 6 years and 6 months who are at risk of academic failure due to underlying difficulties with language structure (van der Lely and Marshall, 2010). The GAPS employs novel elicitation procedures suitable for young children and was standardized in the UK on a large number of children (n=668). ...

**School Health Screening Systems. NY: Nova Science.**

Book Jan 2014

* Carlie J Driscoll & Bradley McPherson

... Ninenteen children (5-9 years old) diagnosed with Specific Language Impairment (SLI) were administered a screening test consisting of a sentence repetition and a non-word repetition task that is currently under standardisation. This test is an adaptation to Italian of an English test (GAPS; Gardner, Froud, McClelland e Van der Lely, 2006 ) and taps morphosyntactic and phonological dimensions which are clinical markers of SLI in Italian. SLI children performed poorly in both tasks, as compared with three control groups: an age-matched controls, and two verbal-age matched groups (matched for morpho-syntactic and lexical comprehension, respectively). ...

**CLAD-ITA GAPS: un test di screening delle abilità fonologiche e morfo-sintattiche in bambini con un Disturbo Specifico del Linguaggio.**

Article Aug 2013 [Psicologia Clinica dello Sviluppo](https://www.researchgate.net/journal/1824-078X_Psicologia_Clinica_dello_Sviluppo) 17(2):291-314 ·

* Mirta Vernice Fabrizio Arosio Chiara Branchini Lina Barbieri Maria Teresa Guasti

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**Development of the CLAD-ITA GAPS: A screening test to assess morpho-syntactic and phonological abilities in children with specific language impairment**

* M.T. Guasti et al

... On the other hand, the fact that not all of them do is also consistent with the previous literature (Catts et al., 2005; Kelso et al., 2007; Ebbels et al., 2012) and larger population studies. In a population study of 4700 children, Gardner et al. (2006) found that of those children who were impaired in grammar and/or phonology, one-third were impaired in both, one-third in grammar only and one-third in phonology only. Thus, the mixed picture that we have observed in this small group would seem representative of the diversity of phonological abilities in SLI. ...

**Phonological deficits in specific language impairment and developmental dyslexia: Towards a multidimensional model**

Article Feb 2013 - BRAIN

* Franck Ramus Chloe R Marshall Stuart Rosen Heather K J van der Lely

... the CELF-3. The finding that some children with SLI do well on the TOPhS concurs with previous studies showing that some children with SLI pass NWR tests (Bishop et al. 2006, Chiat and Roy 2007, Gardner et al. 2006). The practical implication is therefore that NWR tasks should not be used in isolation as a screen for identifying SLI. ...

**Non-word repetition in adolescents with specific language impairment (SLI)**

* May 2012 - Int J Lang Comm Disord
* Susan H Ebbels Julie E Dockrell Heather K J van der Lely

... The Grammar and Phonology Screening (GAPS) Test [31] assesses sentence repetition and non-word repetition. This test was used as specified in the manual except that the child was asked to repeat items to a furry toy squirrel rather than to a cardboard cut-out alien, which had frightened some children in pilot testing. ...

**Parental phonological memory contributes to prediction of outcome of late talkers from 20 months to 4 years: A longitudinal study of precursors of specific language impairment**

Article Feb 2012 [J Neurodev Disord](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3374292/). 2012; 4(1): 3.

* Dorothy V M Bishop Georgina Holt Elizabeth Line David McDonald Helen Watt

... The results also revealed that although the population tested represented a variety of demographic regions across the UK, socio-economic status did not impact on children's performance. Thus, the percentage of impaired individuals in the poorest inner-city UK regions was the same as affluent regions [25]. One interpretation of this finding is that grammar and phonology abilities tapped by the GAPS test are relatively less affected by environmental factors, than genetic ones. ...

**An Investigation to Validate the Grammar and Phonology Screening (GAPS) Test to Identify Children with Specific Language Impairment**

Article Jul 2011 - PLOS ONE

* Heather K J van der Lely Elisabeth Payne Alastair McClelland

... Specific language impairment (SLI) involves intact nonverbal ability in the face of delayed or disordered language development (Bishop, 1997). Children with SLI have been found to demonstrate imitation deficits (e.g., Eadie, Fey, Douglas, & Parsons, 2002;Snow, 2001; Van der Meulen, Janssen, & Den Os, 1997) and imitation tasks have been effectively used to screen for children with language difficulties (Gardner, Froud, McClelland, & Van der Lely, 2006). Unsolicited imitation by children with SLI has been found to facilitate the production of the imitated words on a post-test, possibly by providing additional practice at producing these words (Schwartz & Leonard, 1985). ...

Reference: The development of the Grammar and Phonology Screening (GAPS) test to assess key markers of specific language difficulties in young children

**Socio-emotional engagement, joint attention, imitation, and conversation skill: Analysis in typical development and specific language impairment**

Article Feb 2011 First Lang

* Brad M. Farrant Murray T. Maybery Janet Fletcher

... with the scale of the remaining items and internal consistency is reported to be .85 (Gardner et al, 2006). Concurrent validity has been established with the sentence structure subscale of the Clinical Evaluation of Language Fundamentals -Preschool (CELF; Wiig, Secord & Semel, 2000) and is reported to be .53 ...

**Supporting early oral language skills for English language learners in inner city preschool provision**

Article Mar 2010 - BRIT J EDUC PSYCHOL Julie E Dockrell Morag Stuart Diane King

... In the light of these results, the acquisition of dative appears to be the prominent goal of case therapy, particularly if one considers the persistence of developmental language disorders without a specific therapy (Grimm 1995). Some authors even claim that grammatical deficits are not only resistant to enrichment of environment but also to a specific treatment (Fey et al. 1997; Gardner et al. 2006). According to a 10-year longitudinal study by Schakib-Ekbatan and Schoeler (1995), which documented the development of nine adolescents, these subjects still showed problems in dative marking, although they had attended special language school for several years. ...

**Effects of ‘Context‐Optimization’ on the acquisition of grammatical case in children with specific language impairment: an experimental evaluation in the classroom**

Article Jun 2008 - Int J Lang Comm Disord

* Hans-Joachim Motsch Stephanie Riehemann

**The Effectiveness of the Otago Screening Protocol in Identifying School-aged Students with Severe Speech-Language Impairments**

Article Jane Ann Musgrave

**Non-word repetition: An investigation of phonological complexity in children with Grammatical SLI**

* Jul 2007 - CLIN LINGUIST PHONET
* Nichola Gallon John Harris Heather van der Lely

**Sentence repetition in adolescents with specific language impairments and autism: An investigation of complex syntax**

Apr 2009 - Int J Lang Comm Disord

* N G Riches Tom Loucas Gillian Baird Tony Charman Emily Simonoff

**Assessing multilingual children in multilingual clinics. Insights from Singapore**

Chapter Jan 2010

* Madalena Cruz-Ferreira Bee Chin Ng

**A scalable tool for assessing children's language abilities within a narrative context: The NAP (Narrative Assessment Protocol)**

Article

* Apr 2010 - EARLY CHILD RES Q
* Laura M. Justice Ryan Bowles Khara Pence Carolyn Gosse

**Assessing Component Language Deficits in the Early Detection of Reading Difficulty Risk**

Article

* Jul 2010 - J LEARN DISABIL-US
* Heather K J van der Lely & Chloë R Marshall

**Sentence Repetition Test for Measurement of Grammatical Development in Farsi Speaking Children**

Article Jun 2011

Fatemeh Hasanati Zahra Agharasouli Behrouz Mahmoudi Bakhtiyari Mohammad Kamali

Background and Aim: valid identification, prevention, and treatment of language disorders are a high priority for the speech and language professionals. One method for studying language development is sentence repetition that is faster to implement and analysis than other procedures. The aim of this project was constructing sentence repetition test as a quick measure of grammatical potency in 2.5 to 4 year old children. Methods: Sentences appropriate for 2.5 to 4 year old children were selected during several stages by speech and language pathologist and linguists. The validity of sentences was assessed by professional masters in this theme. Subsequently, 41 sentences including those with 80% high validity were selected as the test sentences. Appropriate pictures were also provided with sentences. The test was administrated to 72 children in 3 groups (2.5-3, 3-3.5, and 3.5-4 year olds, gender matched). The reliability was administered with a test-retest design across a 2 weeks interval. Results: Content validity Index for this test was 80%. "Test-retest reliability" was used for reliability of this test. The Interclass correlation coefficient for this test was 0.95 and standard error measurement was 7.45. The average of scores for sentence repetition, between groups was significant (p<0.001, p<0.001, p= 0.014). Conclusion: This sentence repetition test has the appropriate validity and reliability as well as the capability of proper and quick assessment (screening) of grammatical development in 2.5 to 4 year old Persian speaking children.

**Providing the Non-Word Repetition Test in 4-Year-Old Persian Children and Determining its Validity and Reliability**

Article Jun 2011

* Fateme Sayyahi Zahra Soleymani Behrouz Mahmoudi Bakhtiyari Shohreh Jalaie

<http://aud.tums.ac.ir/files/site1/user_files_b0104b/tums-A-10-25-65-f79c6a0.pdf>

Background and Aim: Phonological working memory is an important factor in speech and language development and the treatment of related disorders. Assessment of this kind of memory is based on non word repetition. The aim of this study was providing a non word repetition test to examine the capacity of phonological working memory and determining its validity and reliability. Methods: This is a cross-sectional study. Initially 60 words were selected based on common Persian syllable structures. Then non words were created by changing one or two phonemes in each of the words. Words and non words were assessed by experts for the content validity and 25 non words were selected. 16 boys and 14 girls aged 4 years to 4 years and eleven months were selected by nonprobability sampling from the childcares centers in regions 2 and 6 of Tehran. The test was performed twice by a single examiner to evaluate the reliability of test. Children non word repetition scores were determined and correlation analysis was conducted using the Pearson's correlation coefficient. Results: Our results show that a high coefficient correlation between different performances 0.76

**Evaluating the GAPS test as a screener for language impairment in young children**

Article Nov 2011 - Int J Lang Comm Disord

* Hannah Nash Ruth Leavett Helen Childs

**Direct object relative clauses. The acquisition of a variable construction**

Chapter Jan 2012 Sevcenco L. Avram I. Stoicescu

**Does formal assessment of comprehension by SLT agree with teachers' perceptions of functional comprehension skills in the classroom?**

Article Oct 2013 - Child Lang Teach Ther Katie Purse Hilary Gardner

**Providing the Non-Word Repetition test and determining its validity and reliability and comparing phonological working memory in 4 to 6 Farsi-speaking normal and SSD children in Tehran City**

Article Jan 2014 Mohammad Reza Afsharali Ghorbani Nahid Jalilevand Mohammad Kamali

Introduction: Speech Sound Disorders (SSD) is a common childhood disorder characterized by developmentally inappropriate errors in speech production that can reduce intelligibility. Some data suggests that a deficit in phonological working memory may contribute to the disorder. Phonological working memory as a part of the working memory system which is responsible for coding and storage of phonological information. Many researchers have employed Non-Word Repetition (NWR) to measure phonological working memory. The aim of this study was to providing a Non-Word Repetition test and determining its validity and reliability and explore differences the phonological working memory in 4 to 6 years old Farsi-speaking normal and SSD children. Material and Methods: The participants in this study were 32 SSD children and 32 normal children-matched for age and sex- as a control group. Phonological working memory was examined in both groups with NWR task. For this purpose, NWR task was designed, and after determining its validity and reliability, was employed in both groups. Mann-Whitney U Test was conducted to examine the differences in mean scores in NWR task. Results: 25 non-words in this test, has content validity. Coefficient correlation between consecutive performances was obtained .997

**School health screening: History, principles and analysis**

Chapter Jan 2014 School Health Screening Systems, Publisher: Nova Science, Editors: B. McPherson, Carlie J Driscoll