

The Netherlands

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History of language impairment/developmental language disorder in the Netherlands

The first group to be identified with language problems in the Netherlands were deaf children in the sixteenth century, when monks taught deaf children and children with severe hearing problems to speak. In 1692 the first book, in Latin, was published on how to teach the deaf to speak. It was titled *Surdus Loquens* and written by Johan Conrad Amman. The book was translated to English in 1694 as *Talking Deaf Man*. In 1960 the *Tijdschrift voor Doofstommen en Slechthorendenonderwijs* ('Journal for the education of the "deaf and dumb" and hearing impaired') saw the light. Initially, this journal was almost exclusively devoted to children with hearing problems. In 1963 the name was changed to *Het gehoorgestoorde kind* ('The hearing-impaired child') and in 1978 to *Van Horen Zeggen* ('From hear say'). This name better reflected the increasing number of children with speech and language difficulties, but normal hearing, in the schools.

The terminology of developmental language disorders

In 1934 the city of the Hague started a one-year pilot with a school class for children with *ernstige spraakgebreken* ('severe speech defects'). All these children came from mainstream schools and had a cleft palate. The age of these children varied between 5 and 12 years and the class was integrated in a school for children who were deaf or had severe hearing problems. Later on, when surgical techniques and health care improved, children with cleft palate no longer needed to receive special education, but went to mainstream schools instead. Their place was gradually taken up by children who would be recognized as

having developmental language disorders (DLD). These children seemed to benefit from the expertise in the special schools, the availability of small classes and the visual support. Around the mid-1980s, the term *ernstig spraakgebrek* ('severe speech defect') was replaced by *ernstige spraak- en taalmoelijkheden* ('severe speech and language difficulties'). One can see a change in terminology also observed in other countries (and languages): a move away from terms that often had a medical flavour or suggested irreversibility ('defect'). Note that the different terms for speech and language impairments discussed above were used exclusively in special education. However, speech and language therapists (SLTs) working in health care settings also used different labels for children with DLD (e.g. child with language delay, speech-language impairment, language problems or disorder). Gerrits and van Niel (2012, 2013) stressed the need to choose one label and they proposed to use *taalontwikkelingsstoornis* (TOS), which is the verbatim translation of developmental language disorder (DLD). In 2014, it was decided by the special education branch organizations and parent groups to also use TOS in educational settings (Viertaal Aktueel, 2014).

Linguistics and DLD

Until the 1970s the focus in terms of both diagnosis and treatment for children with DLD was either medical or behavioural but from then on linguistic approaches became more salient as a driver of both theory and practice. Bloom and Lahey's seminal 1978 book was very influential in the Netherlands, stressing the importance of language description – in terms of language form, content and use – it took a rather agnostic approach to etiology. The book was taught in several speech therapy courses, but its insights were primarily promoted by linguists, keen to put language centre stage and describe the linguistic symptoms, rather than the underpinning neurology. Of course, linguistic description is prefaced upon a good understanding of how different languages typically develop and two key texts addressed this for Dutch (Gillis and de Houwer 1998; Gillis and Schaerlaekens 2000). It is important to note here that these texts were concerned with the acquisition of Dutch by children in the Netherlands as well as in the Dutch-speaking part of Belgium. Dutch and Belgian research on child language also resulted in important corpora being available in the CHILDES database (<https://childes.talkbank.org/access/DutchAfrikaans>).

The study of the language of typically developing children led to identification of the linguistic markers of what has become known as DLD. Beers' (1995) study of phonological impairment has identified, apart from shortcomings in the child's set of phonemes, atypical phonological processes (in Dutch children) that are indicative of language disability. Bol and Kuiken (1990) highlighted their

limitations in basic syntax. De Jong (1999) identified difficulties in inflectional morphology (past and present tense) and verb argument structure. Zwitserlood (2014) studied grammatical development and speech disruptions in narratives of school-age children with DLD. He also pointed at the use of ‘dummy auxiliaries’, a phenomenon also found in some other Germanic languages, where auxiliaries are (semantically empty) placeholders for the finite verb (see also de Jong et al., 2013). Finally, Duinmeijer (2016) investigated inflectional morphology, gender marking and relative clauses in (older) children with DLD. In recent years, research on DLD in multilingual populations (predominantly in children with Turkish or Berber as a first language) has attracted more attention. The aim of these studies was to disentangle DLD and language delay in these populations (see the dissertations by Steenge 2006; Orgassa 2009; Julien 2017; Boerma 2017). The studies identified some domains (notably verb inflection) that marked language impairment in monolingual as well as bilingual DLD groups. In other domains it is harder to disentangle bilingualism and DLD; for those domains bilingual normative data are required.

While profiles were developed for several linguistic levels, the grammatical analysis, LARSP (Crystal et al., 1976) proved the most useful and a Dutch version, GRAMAT, was created by Bol and Kuiken (1990), and an alternative one, TARSP, by Schlichting (1987/2013), who also adapted the method for Frisian. In addition, Beers (1995) wrote a profile-like analysis for phonology (phoneme inventory and phonological processes), *Fonologische Analyseprocedure voor het Nederlands* (‘A method for phonological analysis of Dutch’, FAN). STAP focuses on children from 4–8 years of age, profiling grammatical complexity as well as grammatical accuracy. Originally developed by van Ierland (1980), STAP was published in 1999 by van den Dungen and Verbeek.

The influence of linguistics was strongly felt in the important work of van den Dungen, who, together with Verboog, wrote a monograph on children with language disorders (1991), which took Bloom and Lahey’s work as its inspiration. Diagnostically, two routes were taken in that book: spontaneous language analysis (guided by profile analysis) and a critical evaluation of standardized language tests, calling for a task analysis to establish the conceptual validity of language tests. A newly written handbook (edited by Gerrits, Beers, et al.), presented as an update of the 1991 book, appeared in 2017. Van den Dungen (2007) also took steps to apply these insights in intervention, leading to a structured programme for language therapy, again organized in a linguistically coherent manner. Verhulst-Schlichting and de Koning (1988) developed an intervention programme based on the structures in the TARSP profile, which served as target structures in therapy. Another programme with a strong linguistic basis is MetaTaal, conceptualized by Zwitserlood (2014). This intervention programme includes a visual manner of representing sentence structure.

The prevalence of language impairment

The prevalence of children with language delay in the Netherlands is estimated at 5 per cent at ages 2 to 3 years, with an increasing prevalence for children aged 4 to 7 years (Reep-van den Bergh et al., 1998). This study aimed at estimating the number of children that would be identified if systematic language screening would be introduced in child health care. The authors identified eight Dutch studies with language delay prevalence rates between 2.8 per cent to 27 per cent for children of 0 to 7 years old. In three out of eight studies prevalence was estimated using a Dutch language-screening instrument (TSI, *Taalscreeningsinstrument*, Gerritsen 1994). Differences between the prevalence rates in Reep and colleagues can be explained by differences in instruments used, clinical versus at-risk groups, ages of children and differences in cut-off scores. These prevalence rates seem lower than expected based on prevalence reported for children with DLD (and only a subgroup of children signalled with language delay is expected to have DLD). To plan services the Tomblin et al. (1997) figure of 7 per cent is used.

In 2013 a protocol for the identification of language delay in children was developed including the use of the *Taalscreeningsinstrument* at age 2 (Carmiggelt et al., 2013). The protocol was implemented in *consultatiebureaus* ('child well-being clinics'). The child well-being clinics monitor children's development from birth to age 4. Children aged 2 years old with a low score are referred to speech and hearing centres for further assessment of their language skills, hearing and general behaviour and functioning. Implementation of language screening was motivated by the need for early identification of language delay to be able to reduce the impact on the child's learning, behaviour, self-esteem and long-term prospects, and to reduce variation in referrals that existed without the protocol. For example, Stephan et al. (2015) found a gender bias, showing that without the language screening protocol, boys with language delay were referred to speech and hearing centres ten months younger than girls. Overall, referral age was one year earlier in the region using the language-screening protocol (average age 41 months versus 53 months old) (Stephan et al., 2015).

Evidence-based practice

Evidence-based practice (EBP) is recognized as an important framework in making decisions about the care for children with DLD and an important competence that Dutch SLT students have to master. Spek et al. (2013) notes that some barriers that SLTs experience when adopting EBP include limited access to research publications, lack of time, knowledge and support. Other barriers seem to be

specific for the speech and language therapy (SLT) profession and are part of the professional culture, like a tradition to respect authorities in the field and rely on their own professional expertise (Spek et al., 2013). Access to the best available evidence is key. The Dutch Association for Logopaedics and Phoniatics (NVLF) supports this and contributes to the implementation of EBP by publication of evidence fact sheets, evidence summaries and clinical guidelines. In 2017, the Dutch evidence-based clinical guideline on SLT for children with DLD was published (Gerrits, Visser-Bochane et al., 2017). This guideline was developed by a panel of SLT researchers, practitioners and a representative of a parents' organization. Stakeholders like SEN teachers, ENT doctors, GPs and child psychologists were consulted and invited to comment on the draft guideline. The guideline systematically describes the best evidence for identification, assessment and therapy for children with DLD. It contains a critical appraisal of the international research literature and a translation of this evidence to actionable recommendations for SLTs. To stimulate the use of the guidelines, a dissemination and implementation working group developed a Toolkit DLD with factsheets for practitioners and parents, a poster that visualizes the recommendations, active learning tools, such as (web)lectures, and FAQ pages. The guideline is incorporated in the electronic system for personal health records used in SLT practices.

Policy and legislation

The professional body

The SLT, or '*logopedist*', in the Netherlands is represented by their professional body, *Nederlandse Vereniging voor Logopedie en Foniatrie* ('Dutch Association for Logopaedics and Phoniatics' (NVLF, see www.NVLF.nl). NVLF is a membership organization as well as a trade union. It sets professional standards and facilitates the ability of its members to adhere to these professional standards. It is actively engaged in lobbying the government and other agencies on behalf of the profession and the clients/patients it serves. The NVLF was founded in 1927 and has over 6,000 members. To practise as an SLT, Dutch SLTs have to be registered with the Register for Allied Health Professions (Kwaliteitsregister Paramedici). There are 8,564 registered SLTs in the Netherlands (Ewijk et al., 2018).

Funding

SLT for children with DLD is usually funded by health insurance, which is obligatory in the Netherlands and all citizens have access to health services. Special

day-care groups for children at risk of, or diagnosed with DLD are also funded by health insurance. There are no extra costs for parents. Special schools for children with DLD between the ages of 4 and 18 years are funded by the Ministry of Education. A mixed model with health insurance and education contributing also exists and children in schools can also access additional services in SLT practices, or other forms of special care, such as psychotherapy or psycho-education.

Access

All children in the Netherlands have access to SLT, special day care and special education. There is no limit to the number of SLT sessions in primary care, but health insurance companies can ask SLTs to substantiate duration and number of sessions. To be admitted to special day-care groups, as well as to special education facilities for children with DLD, children have to meet a set of criteria. There must be a diagnosis of DLD provided by a multidisciplinary assessment team, and routine SLT has to have been shown not to have worked. To diagnose speech and language disorders, a number of tests currently exist. Some tests are translations (and re-normed) versions of tests that were originally developed in the UK and USA, such as the CELF-IV-NL (Kort et al., 2010), CELF Preschool-2-NL (Wiig et al., 2012), PPVT-III-NL (Schlichting, 2005), and the Dutch version of the Renfrew Language Scales (Jansonius et al., 2014). Other tests were specifically constructed for Dutch/Flemish children, such as the Schlichting Tests for Language Comprehension and Language Production (Schlichting, 2010a, 2010b). The Language Proficiency Test for All Children (TAK-R, Verhoeven and Vermeer, 2001) has norms for bilingual children speaking Surinam, Turkish or Moroccan languages, and Schlichting (2006) developed the *Lexiconlijsten* ('lexicon lists') for the language assessment of young Turkish and Moroccan bilingual children. The Test-DLD (T-TOS, Verhoeven et al., 2013) is a recently developed language test tailored to meet current procedures in the Netherlands for referral and admission to special education. All behavioural diagnostic tests, including language tests, receive a quality rating based on their psychometric values from the Dutch Association of Psychology (NIP). SLTs only use tests that are rated as sufficient or good. NIP test ratings are based on seven criteria (test construction, quality of test materials and test manuals, norms, reliability, content validity and criterion validity).

Who delivers services and where?

The SLT is the primary professional delivering services for children with DLD and is involved in identification, diagnosis, intervention, and discharge. In SLT practice, children are usually seen once a week for 30 minutes. Access to speech

and language services is based on referral by 'gatekeeper' professionals such as general practitioners, specialists and nurses in child well-being clinics and professionals in day-care centres and schools. It is also possible for parents to consult SLTs without referral. The diagnosis of DLD is made by a multidisciplinary team at a speech and hearing centre, consisting of an assessment of language, hearing, behaviour and general functioning of the child.

SLT for these children is delivered in SLT practices, at special day-care groups, or in special schools for children with severe speech, language and/or hearing problems. In special day-care groups intervention is delivered by a multidisciplinary team consisting of pedagogical assistants, SLTs and child psychologists. Children between the ages 4 and 18 years with severe DLD can attend special education or go to mainstream schools with support from ambulant teachers from these special schools. The team in special education for children with DLD consist of special education needs (SEN) teachers, remedial teachers, SLTs and child psychologists. In the lower grades of primary special education children are treated individually or in groups once or twice a week, but often in shorter sessions than in SLT practices. The children in the higher grades in primary and secondary special schools receive less SLT, which is often given in small groups (pull-out) or in the classroom for the whole class. More than 50 per cent of children with DLD are enrolled in mainstream schools with support (Stichting Koninklijke Auris Groep, 2018). Ambulant teachers from the DLD schools coach school staff, and teachers to support the child with DLD. These children often also visit SLT practices after school hours. Children enrolled in special education or in mainstream schools with specialized help from ambulant teachers can continue to receive this support until age 18. Multidisciplinary diagnostic teams from special education and care institutions evaluate the children and treatment plans and decide, based on eligibility criteria, how long support is needed.

In the Netherlands, many different professional organizations are involved in special care and education for children with DLD (e.g. FENAC and Siméa). FOSS is the organization for parents of children with DLD in the Netherlands. They provide information for parents through brochures, a website and meetings. There also is an organization for children and adolescents with DLD, called *SpraakSaam*.

What do people do with children with DLD?

Almost all SLTs deliver their therapy directly to children with DLD (Dutch COST survey, 2017). Approximately 50 per cent of the SLTs combine a direct approach with an indirect approach (Dutch COST survey, 2017). An indirect approach can be SLTs advising parents how to use language stimulating strategies and or working with parents, for example using the Hanen

programme's 'It takes two to talk' (Pepper and Weitzman, 2009). SLTs who work at special day-care groups or special schools coach pedagogical workers and teachers how to use language enhancing techniques. SLTs conduct their direct therapy in a hybrid way (Fey, 1986) using language-stimulating techniques such as recasting, modelling, cueing, focused stimulation and joint action routines (Dutch COST survey, 2017). The intervention approach *Communicatieve taaltherapie* ('Language in interaction therapy', van den Dungen, 2007) supports SLTs in using these techniques in a structured way. The vocabulary approach *Met Woorden in de Weer* ('Busy with words', van den Nulft and Verhallen, 2009) is commonly used in special education classrooms (this programme is often mentioned by respondents in the Dutch COST survey, 2017). This didactic approach guides teachers in the selection, presentation, consolidation and evaluation of new vocabulary items (*Viertaktmodel*, Verhallen and Verhallen 1994). Frequently used programmes for phonological problems are the 'cycle approach' of Hodson and Paden (1991) and 'Metaphon' by Howell and Dean (1998) and for grammatical problems *MetaTaal* ('MetaLanguage', Zwitserlood et al., 2015)

Looking to the future: what would make a difference?

To prioritise and plan future research the NVLF is developing a research agenda (van Ewijk et al., 2018), funded by the Dutch Organization for Health Research and Development. Researchers, practitioners and patients were asked for input via an online survey. Three priorities emerged:

1. Effective approaches and interventions, and specifically understanding of optimal intervention dosage, effective approaches for subgroups of children with poor prognosis such as children with language comprehension disorders and effective interventions for 'older' children with DLD (10–18 years old).
2. Multi-professional and inter-professional interventions, and particularly training pedagogical assistants to use language stimulating strategies such as recasting and modelling, co-teaching with teachers in primary and secondary education. We include here parental involvement and the need for better understanding of the important role that parent–child interaction therapy can play in intervention.
3. The need to develop innovative interventions and especially the development of telepractice-based exercises and eHealth applications, using virtual reality games in therapy and automation of spontaneous language sample analysis. In addition, more knowledge is needed on DLD in adolescence and adulthood to create interventions that can support this group.

SLT researchers, practitioners and patients stressed the need for appropriate assessments and therapies for multilingual populations. The three largest minority ethnic populations in the Netherlands are Turkish, Moroccan and Polish, with children using home languages that usually are not spoken by the SLT. In pioneering books by Julien (2008) and Blumenthal (2009) guidelines have been provided for multilingual diagnosis and therapy. Blumenthal also trained interpreters to assist in language assessment, e.g. by analysing language samples in the first language of the child. Assessment tools created in the BiSli COST Action IS0804 on bilingualism and DLD (Armon-Lotem et al., 2015) have been further investigated for clinical use by Boerma (e.g. Boerma, 2017). Yet there are still no validated assessments available for languages others than Turkish and Moroccan.

The survey also revealed that there is an urgent need for the dissemination and implementation of scientific results into clinical practice.

And, finally, we would highlight the need to strengthen the position of parents of children with DLD. Associations of parents of children with DLD should get more support and help. The use of social media could play a positive part here, because of their accessibility and user-friendliness. Furthermore, it would be very helpful to have a famous Dutch DLD ‘champion’ to aid in raising more awareness of DLD in the Netherlands.

As this chapter showed, services for children with DLD in the Netherlands have undergone major changes. The research interest of academic disciplines in language pathology has added to improved empirical underpinnings for assessment and intervention. The introduction of evidence-based practice has resulted in more use of scientific evidence in services for children with DLD and in a more critical approach of assessment tools and didactic and therapy programmes and materials. This development is ongoing and will contribute to a higher quality of services in care and education for these children in the future.

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