

Dynamic assessment for the diagnosis of developmental language disorder in children: A rapid review

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Review question

This rapid review aims to identify studies using dynamic assessment in the diagnosis of developmental language disorders (DLD). This will provide speech-language pathologists with an overview of current assessment tasks.

Therefore, the research question is as follows: What is the extent of the literature on dynamic assessment tasks for the diagnosis of developmental language disorder? Moreover, the review will focus on these sub-questions: What is the design of dynamic assessment tasks? What dynamic measures, such as modifiability or post-test measurement, are employed? What are the outcomes in terms of diagnostic accuracy? Which language domains (e.g., phonology, lexicon) do dynamic assessment tasks focus on? What language(s) are used in dynamic assessment tasks? What are the characteristics of the assessed participants (e.g., age, monolingual/bilingual, DLD group/control group)?

Searches

An initial limited search of PsycINFO/Ovid and MEDLINE ALL/Ovid was conducted in July 2023 to identify articles on the topic. The words contained in the titles and abstracts of relevant articles, as well as the indexing terms used to describe the articles, were used to develop a comprehensive search strategy for four bibliographic databases: Eric/Ovid (1965-2023), MEDLINE ALL/Ovid (1946-2023), PsycINFO (1806-2023) and Scopus (1970-2023). The search strategy included all identified keywords and index terms and was adapted for each database.

The search strategy focused on two concepts - dynamic assessment and developmental language disorders - and used a set of controlled keywords and terms.

The search strategy will be conducted for the first time in the four databases in September 2023 and will be repeated in November 2023 before the final analyses. Moreover, the reference lists of all selected articles for this rapid review will be manually searched for additional relevant articles (sometimes known as the “snowballing” technique).

Types of study to be included

All peer-reviewed articles involving comparisons between groups will be included. This methodological choice was made to compare the value of dynamic assessment in the diagnosis of DLD.

Condition or domain being studied

This rapid review will focus on dynamic assessment for the diagnosis of DLD.

a. Dynamic assessment is defined as an assessment method that aims to assess an individual's latent abilities (i.e. abilities that are not spontaneously expressed) and learning potential (i.e. an individual's ability to benefit from a learning situation) in order to reduce the environmental biases (e.g., cultural or linguistic biases) associated with static assessment (Camilleri & Law, 2014). Dynamic assessment differs from static assessment in terms of the content assessed (acquired knowledge vs. learning potential), the role of the assessor (neutral vs. interacting with the person being assessed) and the feedback given (unauthorised vs. authorised).

b. DLD refers to a neurodevelopmental disorder that affects approximately 7% of the population. It is characterised by persistent difficulties in the acquisition and use of oral language, either productive or receptive, with functional implications for daily life and learning (Bishop et al., 2016, 2017).

Participants/population

This review will focus on studies that include participants with DLD up to 18 years old. Participants must not have an associated biomedical condition (e.g. hearing loss, autism spectrum disorder, intellectual disability, genetic condition) as this is a differentiating condition for the diagnosis of DLD. Multilingualism is not considered an exclusion criterion, as the aim of this rapid review is to identify all dynamic assessment tasks in children, whether monolingual or multilingual.

To summarise,

Inclusion : monolingual or multilingual children (0-18 years) with DLD

Exclusion : adults (over 18 years) ; children with biomedical condition (e.g., hearing loss, autism spectrum disorder, intellectual disability, genetic syndrome)

Intervention(s), exposure(s)

This rapid review will focus on the design of dynamic assessment tasks for the diagnosis of DLD in children aged 0 to 18 years.

Both pre-test – learning – post-test and graduated prompting methods will be included, as well as studies combining these two study designs.

Comparator(s)/control

Studies using a dynamic assessment task without a comparison group will be excluded, as the aim of this rapid review is to identify tasks that are relevant to the diagnostic accuracy of DLD. The comparison groups may then be children without DLD (monolingual or multilingual).

Monolingual and multilingual DLD groups may also be compared with each other to consider the potential added value of dynamic assessment tasks in a multilingual context.

Context

This review will focus on studies related to dynamic assessment in the diagnosis of DLD in children (0-18 years), i.e. any task using a dynamic methodology (e.g., pre-test – learning – post-test, graduated prompting) with between-group comparisons.

Main outcome(s)

The primary aim is to identify the dynamic evaluation tasks within the scope of DLD diagnosis and to extract information regarding:

-the design of dynamic assessment tasks

- the dynamic measures used
- the results in terms of diagnostic accuracy
- the language domains targeted by the dynamic assessment tasks
- the language(s) of dynamic assessment tasks
- the characteristics of the participants assessed

Additional outcome(s)

The secondary aim is to analyse the quality of studies using the QUADAS-2 (Quality Assessment of Diagnostic Accuracy Studies)

Data extraction (selection and coding)

All identified records will be uploaded into Covidence and duplicates will be removed. Following a pilot test, the review process will be conducted in two stages. First, titles and abstracts will be screened by one reviewer (P. M.) to determine their potential eligibility according to the inclusion criteria. A second reviewer (A.-L. L.) will check the accuracy of 20% of a random sample. Second, the full text of the selected papers will be retrieved and screened in detail according to the inclusion criteria by one reviewer (P. M.). Reasons for excluding sources of evidence at the full-text reading stage will be recorded. A second reviewer (A.-L. L.) will verify 20% of a random sample for accuracy. At both stages, if the two reviewers (A.-L. L. and P. M.) do not agree by at least 90%, a larger number of articles will be screened by the second reviewer (A.-L. L.). Also, discrepancies between the two reviewers' opinions during the selection process will be resolved by consulting an additional reviewer (A. C.). Before beginning the selection of studies, the review process will be tested using 10% of the identified articles. The results of the search and study selection will be reported and presented in a PRISMA-P flow diagram

The Excel data extraction form will contain the following items:

- Study characteristics: author(s), year of publication, design, country
- Design of dynamic assessment tasks : type of methods used, characteristics of the dynamic assessment targets, instructions given during the dynamic assessment tasks, number of sessions, session duration, assessor's profile
- Outcomes in terms of diagnostic accuracy: number of measures performed, type of measures, results obtained
- Language domains targeted by the dynamic assessment tasks: number and type of language domains
- Language(s) of dynamic assessment tasks
- Participant characteristics: sample size, age, gender, language(s) spoken, academic level, presence of a developmental disorder

Risk of bias (quality) assessment

One reviewer (P. M.) will assess the quality of all included studies after the study selection stage. A second reviewer (A.-L.L.) will check 20% of the sample for accuracy. Conflicting opinions will be discussed with a third reviewer (A. C.) until a consensus is reached. The Quality Assessment of Diagnosis Accuracy Studies (QUADAS-2; Whiting et al., 2011) tool will allow for more transparent rating of bias and diagnostic accuracy in studies. Seven sets of standard QUADAS-2 questions are asked in four domains: patient selection, index test, reference standard, and flow and timing. Each domain will be assessed for risk of bias, and the first three domains will be also assessed for applicability concerns.

Strategy for data synthesis

The results of research on dynamic assessment in the diagnosis of DLD will be presented in a summary table that aims to identify, characterise, and summarise relevant information. The table will include several sections relating to study characteristics, design, outcomes in terms of diagnostic accuracy, language domains assessed, language(s) used in the dynamic assessment tasks, and participant characteristics.

The results will also be presented as a narrative summary that links them to the review's goals and questions. Any additional analysis added will be identified as such in the rapid review manuscript.

Analysis of subgroups or subsets

No subgroup analysis was pre-planned.

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Type and method of review

Diagnostic, Narrative synthesis, Systematic review, Other

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Conflicts of interest

The authors declare no conflict of interest

None known

Language

English, French

Country

Belgium

Stage of review

Review Ongoing

Subject index terms status

Subject indexing assigned by CRD

Subject index terms

Child; Humans; Language; Linguistics; Multilingualism; Pathologists; Speech-Language Pathology

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Stage of review at time of this submission

Stage	Started	Completed
Preliminary searches	Yes	Yes
Piloting of the study selection process	Yes	No
Formal screening of search results against eligibility criteria	No	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

The record owner confirms that the information they have supplied for this submission is accurate and complete and they understand that deliberate provision of inaccurate information or omission of data may be construed as scientific misconduct.

The record owner confirms that they will update the status of the review when it is completed and will add publication details in due course.

Versions

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