



UNIVERSITY OF LEEDS

This is a repository copy of *Does Dynamic Assessment Offer An Alternative Approach to Identifying Reading Disorder? A Systematic Review*.

White Rose Research Online URL for this paper:

<https://eprints.whiterose.ac.uk/190933/>

Version: Accepted Version

Article:

Dixon, C, Oxley, E, Nash, H orcid.org/0000-0002-4357-945X et al. (1 more author) (2022) Does Dynamic Assessment Offer An Alternative Approach to Identifying Reading Disorder? A Systematic Review. *Journal of Learning Disabilities*. 222194221117510-. ISSN 0022-2194

<https://doi.org/10.1177/00222194221117510>

© Hammill Institute on Disabilities 2022. This is an author produced version of an article, published in *Journal of Learning Disabilities*. Uploaded in accordance with the publisher's self-archiving policy.

Reuse

Items deposited in White Rose Research Online are protected by copyright, with all rights reserved unless indicated otherwise. They may be downloaded and/or printed for private study, or other acts as permitted by national copyright laws. The publisher or other rights holders may allow further reproduction and re-use of the full text version. This is indicated by the licence information on the White Rose Research Online record for the item.

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.



eprints@whiterose.ac.uk
<https://eprints.whiterose.ac.uk/>

DYNAMIC ASSESSMENT AND READING DISORDER

Table 2

Design, Procedure, and Classification Criteria Employed by Included Studies

Reference	Construct	Study design and measures	DA Procedure	Classification criteria
Aravena et al. (2018)	Decoding	t1 only (ages 7;4 - 11;1): DA, word/nonword reading accuracy and fluency, spelling (recognition and dictation), PA (deletion), RAN (digits, letters), intelligence (analogies, vocabulary), baseline response speed	Training: children learn to match speech sounds with unfamiliar Hebrew graphemes in a computer game. Posttest 1 identification task: matching spoken speech sounds with corresponding graphemes Posttest 2 word reading task: reading as many high-frequency Dutch words written in the unfamiliar orthography as possible within 3 minutes.	A priori dyslexia diagnosis from national dyslexia centre: (1) word reading speed ≤ -1.5 SD OR reading speed ≤ -1 SD AND spelling ≤ -1.5 SD; (2) ≤ -1.5 SD on 2/6 phonology tasks; (3) showing poor response to intervention (all 3 criteria had to be met). Standardised assessments for diagnosis are not reported.
Cho et al. (2020)	Decoding	t1 (start G1): DA, intelligence (matrices, vocabulary), behavioural attention questionnaire, RAN (digits, letters), PA (elision), word reading accuracy and fluency (latent factor). t2 (May G1): word reading accuracy and fluency (latent factor).	Training: paired-associate sound-symbol learning of 6 Mandarin characters (9 trials). Part 1 Blending: children are asked to blend symbol-sound pairs into CVC (real) words (4 trials). Part 2 rule-based learning: children are prompted to infer a 'silent-e' rule and decode CVC(e) words (5 trials). Multiple learning trials with graduated prompts and a mastery test.	Scoring < -1 SD in growth AND final level of a latent word recognition factor (WRMT-R Word Identification and TOWRE SWE) during and after intervention, respectively.
Compton et al. (2010)	Decoding	t1 (start G1): DA, RAN (digits), PA (sound matching), vocabulary, word identification fluency (5-week progress monitoring), teachers' running records, oral reading	Training: Children are taught to read nonwords using three decoding skills: CVC (<i>vop</i>), CVCe (<i>vope</i>), and CVC(C)ing (<i>vopping</i>). Mastery must be met on a set of untaught nonwords (5/6 correct) before attempting the	Scoring < 85 on a composite of word reading accuracy (WRMT-R Word Identification), word and nonword reading fluency (WRMT-R Word Attack, TOWRE SWE, TOWRE PDE) and

DYNAMIC ASSESSMENT AND READING DISORDER

Reference	Construct	Study design and measures	DA Procedure	Classification criteria
		fluency (passages), word and nonword reading fluency, word reading accuracy, reading comprehension t2 (Spring G2): word and nonword reading fluency, word reading accuracy, reading comprehension	next stage. Failure to reach mastery results in reteaching of each skill using a more explicit (graduated) level of instruction.	reading comprehension (WRMT-R Passage Comprehension).
Gellert & Elbro (2018)	Decoding	t1 (end K): DA (form A), word reading accuracy, letter knowledge, PA (identification), RAN (objects) t2 (Nov G1): DA (form B), word and nonword reading accuracy, letter knowledge, PA (synthesis), RAN (digits) t3 (end G2): word and nonword reading accuracy and fluency	Training 1: children are taught to associate three novel letter shapes with their sounds. Training 2: blending: children read two-letter nonwords made with the novel letter shapes. Posttest: independent reading: if mastery is achieved on posttest 1, children are asked to read 12 novel words ranging from 3 to 5 novel letters in length.	Group 1: scoring in the bottom 17% for reading accuracy composite (words and nonwords; Elbro & Petersen, 2004) at t3. Group 2: scoring in the bottom 17% for reading fluency composite (words and nonwords; Elbro & Petersen, 2004) at t3.
Gellert & Elbro (2017b)	Decoding	t1 (end K): DA, letter knowledge, phoneme identification and synthesis, RAN (objects), word reading accuracy, vocabulary, intelligence (matrices)	Dynamic test of decoding as in Gellert & Elbro (2018).	Scoring < 45 th percentile on a composite of word and nonword reading (Elbro & Petersen, 2004) at t2.

DYNAMIC ASSESSMENT AND READING DISORDER

Reference	Construct	Study design and measures	DA Procedure	Classification criteria
		t2 (end G1): word and nonword reading accuracy		
Petersen & Gillam (2015)	Decoding	t1 (K): DA, initial sound fluency, letter naming fluency t2 (end G1): nonsense word fluency (NWF), oral reading fluency (ORF), word reading accuracy (WID)	Predictive Early Assessment of Reading and Language (PEARL). Pretest: children try to decode 4 nonsense words (e.g. <i>tad</i> , <i>zad</i>). Teaching: children are taught a sound-by-sound (<i>z-a-d</i>), or onset-rime (<i>z-ad</i>) decoding strategy. Posttest: children decode the same words in a different order.	A DA modifiability score ≤ 2 at t1 AND scoring $\leq 20^{\text{th}}$ percentile for school district on DIBELS NWF or ORF OR scoring $\leq 20^{\text{th}}$ percentile on WRMT-R Word Identification at t2 based on test norms.
Petersen et al. (2016)	Decoding	t1 (start K): DA, letter naming fluency, first sound fluency, DIBELS dichotomous risk status t2 (end G1): word and nonword reading fluency, letter naming fluency (LNF), nonsense word fluency (NWF), phoneme segmentation fluency (PSF)	Predictive Early Assessment of Reading and Language (PEARL) as in Petersen & Gillam (2015).	Scoring at DIBELS 'intensive' level OR $< 10^{\text{th}}$ percentile on at least 3 of the following at t2: TOWRE SWE, TOWRE PDE, DIBELS NWF, DIBELS LNF, DIBELS PSF.
Petersen et al. (2018)	Decoding	t1 (start K): DA, letter naming fluency, first sound fluency t2 (end G2), t3 (end G3), t4 (end G4), t5 (end G5): oral reading fluency.	Predictive Early Assessment of Reading and Language (PEARL) as in Petersen & Gillam (2015).	Scoring $\leq 7^{\text{th}}$ percentile on DIBELS ORF (t2-t5).

DYNAMIC ASSESSMENT AND READING DISORDER

Reference	Construct	Study design and measures	DA Procedure	Classification criteria
Gellert & Elbro (2017a)	PA	<p>t1 (Nov K): DA, phoneme ID, letter knowledge</p> <p>t2 (end K): DA, phoneme ID, word reading accuracy</p> <p>t3 (Nov G1), t4 (end G1): word and nonword reading accuracy</p>	<p>Children are readministered incorrect items from a static phoneme identification task using graduated prompts (score of 0-4 for each item).</p>	<p>Scoring \leq 45th percentile on a word and nonword reading composite (Elbro & Petersen, 2004) at t3 and t4.</p>
Krenca et al. (2020)	PA	<p>t1 (start G1): DA, intelligence (matrices), PA (elision)</p> <p>t2 (Spring G1): word reading accuracy and fluency</p>	<p>Computerised lexical specificity training (Ziggy's Word Game). Children are presented with plates of 4 pictures (2 unfamiliar minimal-pair targets, e.g. <i>foal</i> and <i>sole</i>, 1 unfamiliar control e.g. <i>knoll</i>, and 1 familiar control e.g. <i>bowl</i>) and asked to "show me the [target]". 5 practice trials, 40 training trials, and 20 test trials. The task is conducted in English and French.</p>	<p>Scoring \leq 25th percentile on composite scores of word reading accuracy and fluency in English (Letter-Word Identification subtest of Woodcock-Johnson III and TOWRE SWE, respectively) and in French (experimental parallel measures).</p>
Bridges & Catts (2011) Study 1	PA	<p>t1 (start K): DA, static PA (deletion)</p> <p>t2 (Apr K): word and nonword accuracy and fluency</p>	<p>The Dynamic Screening of Phonological Awareness (DSPA): dynamic version of static phoneme deletion task at t1, using only items which a child did not answer correctly. Children are asked to produce words without particular syllables and phonemes and provided with a series of graduated prompts for incorrect answers.</p>	<p>Scoring \leq 25th percentile in word reading accuracy (WRMT-R Word Identification) or nonword reading fluency (WRMT-R Word Attack).</p>

DYNAMIC ASSESSMENT AND READING DISORDER

Reference	Construct	Study design and measures	DA Procedure	Classification criteria
Bridges & Catts (2011) Study 2	PA	<p>t1 (start K): DA, initial sound fluency</p> <p>t2 (Apr K): word and nonword accuracy and fluency</p>	Dynamic Screening of Phonological Awareness (DSPA) as in Bridges and Catts (2011 Study 1).	As in Bridges & Catts (2011) Study 1 above.
O'Connor & Jenkins (1999) Cohort 3	PA	<p>t1 (start K): vocabulary, sound repetition, PA (syllable blending, segmentation, deletion; phoneme blending and segmentation, first sound isolation, rhyme production), RAN (letters)</p> <p>t2 (Oct G1): test battery as at t1 but with the addition of the DA and a 10-item high-frequency word reading accuracy task</p> <p>t3 (May G1): word reading accuracy, nonword reading fluency</p>	Children are taught to segment words into onsets and rimes. The task was administered only to children scoring less than 80% on the static phoneme segmentation test at t2. For children who fail to segment at least 4/5 new words in an initial testing trial, three teaching phases are administered until mastery is achieved (prompts become less explicit from phase 1 to 2; no prompts in phase 3).	Reading disability identification through special education services by May of G1 OR scoring < – 1.4 SD on a composite of word reading accuracy (WRMT Word Identification) and nonword reading fluency (WRMT Word Attack) at t3.
Swanson (1994)	WM	t1 only (mean age 10;9): DA, reading achievement	Four subtests of the Swanson-Cognitive Processing Test (S-CPT): visual matrix, mapping/directions, rhyming, auditory digit sequence. Hints are provided if an item is failed, and are tailored to the child's response.	Scoring < 25 th percentile in reading AND > 40 th percentile in reading and mathematics subtests of the WRAT-R, respectively.
Swanson (1995) Study 2	WM	t1 only (mean age 10;6): DA, reading achievement	The Swanson-Cognitive Processing Test (S-CPT) as in Swanson (1994), using all 11 subtests.	Scoring < 25 th percentile in word recognition (WRAT-R) AND > 25 th percentile in

DYNAMIC ASSESSMENT AND READING DISORDER

Reference	Construct	Study design and measures	DA Procedure	Classification criteria
				mathematics (WRAT-R), and > 85 SS in FSIQ (WISC-R).

Note: t1 = time point 1; t2 = time point 2; t3 = time point 3; G1 = grade 1; AUC = area under the receiver operator characteristic curve; WM = working memory; PA = phonological awareness; TOWRE SWE = Test of Word Reading Efficiency Sight Word Reading subtest; DIBELS = Dynamic Indicators of Basic Early Literacy Skills; FSIQ = full scale IQ; WRAT(-R) = Wide Range Achievement Test (Revised)