Article:
Dixon, C, Oxley, E, Nash, H orcid.org/0000-0002-4357-945X et al. (1 more author) (2023) Does Dynamic Assessment Offer An Alternative Approach to Identifying Reading Disorder? A Systematic Review. Journal of Learning Disabilities, 56 (6). 423 -439. ISSN 0022-2194

https://doi.org/10.1177/00222194221117510

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 (*vop*), CVCe (*vope*), and CVC(C)ing (*vopping*). 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

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 < 45th percentile on a composite of word and nonword reading (Elbro & Petersen, 2004) at t2.

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. *tad*, *zad*). Teaching: children are taught a sound-by-sound (*z-a-d*), or onset-rime (*z-ad*) decoding strategy. Posttest: children decode the same words in a different order.	A DA modifiability score ≤ 2 at t1 AND scoring ≤ 20th percentile for school district on DIBELS NWF or ORF OR scoring ≤ 20th 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 < 10th 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 ≤ 7th percentile on DIBELS ORF (t2-t5).

Reference	Construct	Study design and measures	DA Procedure	Classification criteria
Gellert & Elbro (2017a)	PA	**t1** (Nov K): DA, phoneme ID, letter knowledge **t2** (end K): DA, phoneme ID, word reading accuracy **t3** (Nov G1), **t4** (end G1): word and nonword reading accuracy	Children are readministered incorrect items from a static phoneme identification task using graduated prompts (score of 0-4 for each item).	Scoring ≤ 45th percentile on a word and nonword reading composite (Elbro & Petersen, 2004) at t3 and t4.
Krenca et al. (2020)	PA	**t1** (start G1): DA, intelligence (matrices), PA (elision) **t2** (Spring G1): word reading accuracy and fluency	Computerised lexical specificity training (Ziggy's Word Game). Children are presented with plates of 4 pictures (2 unfamiliar minimal-pair targets, e.g. *foal* and *sole*, 1 unfamiliar control e.g. *knoll*, and 1 familiar control e.g. *bowl*) 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.	Scoring ≤ 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).
Bridges & Catts (2011) Study 1	PA	**t1** (start K): DA, static PA (deletion) **t2** (Apr K): word and nonword accuracy and fluency	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.	Scoring ≤ 25th percentile in word reading accuracy (WRMT-R Word Identification) or nonword reading fluency (WRMT-R Word Attack).

Reference	Construct	Study design and measures	DA Procedure	Classification criteria
Bridges & Catts (2011) Study 2	PA	**t1** (start K): DA, initial sound fluency **t2** (Apr K): word and nonword accuracy and fluency	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	**t1** (start K): vocabulary, sound repetition, PA (syllable blending, segmentation, deletion; phoneme blending and segmentation, first sound isolation, rhyme production), RAN (letters) **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 **t3** (May G1): word reading accuracy, nonword reading fluency	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 < 25th percentile in reading AND > 40th 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 < 25th percentile in word recognition (WRAT-R) AND > 25th percentile in

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)