Benchmark Phonics Intervention: Research Foundation for Assessments and Screeners

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Introduction

The purpose of this report is to provide justification for the assessments and screeners included with the *Benchmark Phonics Intervention* (BPI) program. This report will begin with an explanation of the types of assessments and screeners that are provided with BPI. This will be followed by an explanation of the importance of a knowledgeable examiner. Finally, there will be a brief description of each of the assessments and screeners, with supporting research.

This report focuses on assessments and screeners. Information about their usage, placement based on the assessments in BPI, and administration of the assessments and screeners can be found in the *Assessment & Screener Handbook* and the *Quick Phonics Assessment with Quick Spelling Assessment* that comes with the BPI materials. Research supporting the BPI program can be found in the document titled *Benchmark Phonics Intervention Research Foundation*.

Types of Assessments

Three terms surrounding testing are often used interchangeably but have distinct meanings. These terms are *test*, *measurement*, and *assessment*. "A test is a device or procedure in which a sample of an examinee's behavior in a specified domain is obtained and subsequently evaluated and scored using a standardized process" (American Educational Research Association [AERA], American Psychological Association [APA], & National Council on Measurement in Education [NCME], 2014, p. 2). Standardized tests fall into the test category. A measurement "can be defined as a set of rules for assigning numbers to represent objects, traits, attributes, or behaviors" (Reynolds & Livingston, 2012, p. 9). A psychological or educational test is a measuring device.

Assessment is a broader term than test (AERA et al., 2014) and "is defined as a systematic procedure for collecting information that can be used to make inferences about the characteristics of people" (Reynolds & Livingston, 2012, p. 9). Since assessment typically involves the integration of information obtained from multiple sources using multiple methods, assessment is a more comprehensive process than testing, with the goal of developing a better understanding of the people being assessed (in this case, students).

According to Dougherty Stahl, Flanagan, and McKenna (2020), tests and assessments[1] can be categorized along four dimensions:

- Group versus individually administered: Group tests are more efficient in terms of the time it takes to gather information about students. The primary reason for individually administered tests is because an oral response(s) is expected from the student. Individual administration does allow for adapting the testing based on the student's performance. It also allows the teacher to "command the student's mental engagement (to some extent) during the testing process" (p. 24).

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[1] The terms test and assessment will be used interchangeably in this report. Where a source specifically uses one or other of these terms, that term will be used in the description of the information from that source.

- Formal versus informal tests: "Tests differ with respect to how rigidly they are administered and interpreted. A formal test is one in which the directions for administration are clear-cut and allow little, if any, discretion on the teacher's part" (p. 25). An informal test "is one in which teacher discretion plays a major part" and "the teacher may exercise wide latitude in determining how to interpret the results" (p. 25).
- Norm-referenced versus criterion-referenced tests: Two major ways of bringing meaning to tests are generally used in education. One of those ways is to "compare one child's performance with what might be normally expected of other children" (p. 25), referred to as norm-referenced tests. Norms could include percentile ranks, normal curve equivalents, scale scores, etc. "Norm-referenced tests are useful in determining a child's overall developmental level with respect to those of others" (p. 25). The other way of bringing meaning to tests is to interpret a child's performance by comparing "his or her test score with a preestablished criterion or benchmark" (p. 25). "Criterion-referenced tests are useful for mastery-level learning or competency-based assessment" (p. 25).
- Screening versus diagnostic tests: "Screening tests attempt to provide a broadly defined estimate of a student's overall achievement level in a given area" (p. 25). These tests often help identify areas where additional information is needed to determine next steps. "Diagnostic tests, on the other hand, provide detailed information useful in planning instruction" (p. 26). These tests "involve multiple dimensions, possibly represented by subtests or by a variety of tasks a student is asked to perform" (p. 26). Additionally, "a test designed to tell whether a student has mastered a particular objective is also an example of a diagnostic test because the result documents progress in terms specific enough to help in planning instruction" (p. 26).

Importance of Assessment Administrator

Kilpatrick (2015) states "the best reading assessment tool is the evaluator's knowledge of research on reading acquisition and reading difficulties" (p. 151). The evaluator or administrator of assessments needs to possess this type of knowledge because there are gaps in reading research in terms of practical assessment. Assessments may not always provide answers to all the reading-related questions. This is where administrators need to be able to use experience, sound judgement, and understanding of reading acquisition when interpreting assessment scores (AERA et al., 2014).

Assessments in the Benchmark Phonics Intervention Program

The assessments and screeners included with BPI are developed to be informal, criterion-referenced assessments, designed to be used as a diagnostic assessment, based on the Dougherty Stahl et al. (2020) definition of a diagnostic test. This definition is related to when results of a particular objective show progress that is explicit enough to help in the planning process of instruction. In the case of BPI, the instruction being referenced here is Tier 3 phonics and phonological/phonemic awareness instruction.

Based on the practice guide from the Institute of Educational Sciences (IES), titled *Assisting Students Struggling with Reading: Response to Intervention and Multi-Tier Intervention for Reading in the Primary Grades* (Gersten et al., 2009), when using the Response to Intervention (RtI) framework, there are three tiers of instruction that should be used to help struggling readers. Tier 1 instruction includes the reading instruction provided to all students in the classroom. Tier 2 instruction, called interventions, is provided

to students "who demonstrate problems based on screening measures or weak progress from regular classroom instruction" (Gersten et al., 2009, p. 4). Students in this tier receive supplemental small-group instruction designed to build foundational reading skills.

Tier 3 interventions are provided for those students who do not make progress after a reasonable amount of time receiving the Tier 2 instruction. Tier 3 instruction can take the form of one-on-one tutoring or small-group instruction with a mix of instructional interventions. "Systematically collected data are used to identify successes and failures in instruction for individual students. If students still experience difficulty after receiving intensive services, they are evaluated for possible special education services" (Gersten et al., 2009, p. 4).

The assessments and screeners that are provided with BPI are not designed to identify students who are having trouble learning to read. The identification of students who need additional help, specifically Tier 3 instructional help, will be completed within Tier 1 and Tier 2 of the RtI framework. The assessments and screeners provided with BPI are designed to provide specific information about students' phonics skills, allowing for placement, progress monitoring, and instructional planning. These assessments are not designed to be a comprehensive test of reading and should not be used to make high-stakes decisions about a student.

The assessments and screeners that are provided with BPI are listed below, with a brief description of the assessment and a brief description of the research that supports the need for these assessments and screeners to be used with BPI.

Quick Phonics Assessment

Quick Phonics Assessment (QPA) is an informal, criterion-referenced, individually administered diagnostic assessment tool created by Dr. Jan Hasbrouck. QPA is designed to help teachers and specialists quickly and accurately diagnose students' strengths and instructional needs in phonics and decoding skills, and has been used successfully for over 10 years. Alternative assessment forms (A, B, and C) have been designed to be equivalent in difficulty and are available for monitoring student progress at three times during the school year.

QPA measures a student's ability to recognize, decode, and pronounce phonics elements. In seven of the 13 skill sets, there is a combination of real words and nonsense words. Nonsense words are used to determine whether a student has mastered a particular phonics element sufficiently to apply it to unfamiliar words (nonsense words). When students read most of the items in a skill set correctly, quickly, and confidently, the student has probably mastered the phonics and decoding skills in that skill set. Skill sets are organized along a continuum of phonics skill development.

Research Support for the Quick Phonics Assessment

Phonic knowledge is necessary for reading in an alphabet-based writing system (Kilpatrick, 2015). Determining what skills students have and have not mastered is also necessary to understand what instruction should come next and to avoid wasting instructional time on skills students already know. "When there is a discrepancy between real and nonsense word subtest performance, scores on nonsense word tests may be a more accurate reflection of a student's reading development" (Kilpatrick, 2015). There is a high correlation between nonsense word reading and the reading of real words,

including irregular words. While the correlation varies slightly by age, it is between $r = .70$ and .90 (Gough & Walsh, 1991; Share, 1995).

Spear-Swerling (2004) found this to be true with Grade 4 students also. With a group of 11 students who had word identification scores that were five to 19 points higher than their nonsense word reading scores, eight of the 11 students were found to have below-average reading comprehension on one or both reading comprehension tests. This indicated to Spear-Swerling that when the real-word reading subtest is average, but the nonsense subtest is not, the results should be further investigated. This also points to the importance of using the nonsense words provided in the skill sets of QPA.

Quick Spelling Assessment

Quick Spelling Assessment (QSA) is designed to be used along with QPA. The primary purpose of QSA is to help teachers and interventionists decide which students should be given QPA and on which skill set to start the assessment. Administering the QSA to a group or to a whole class before QPA can save significant one-to-one assessment time. The QSA is untimed and can be administered to a whole class, a small group of students with similar skill levels, or one-to-one.

Research Support for the Quick Spelling Assessment
The ability to spell words accurately is important as a necessary foundation for both reading and writing (Graham, Harris, & Chorzempa, 2002: Moats, 2005/2006, 2019; Treiman, Kessler, Cury Pollo, Byrne, & Olson, 2016). Kilpatrick (2015) states "in reading research, orthography is used to refer to the correct spelling of words" (p. 82). There are two levels of orthography: recall and recognition.

Orthographic recognition "is the essence of word recognition—a particular orthographic sequence is instantly recognized as a familiar word" (Kilpatrick, 2015, pp. 82–83). In reading, word recognition requires sufficient detail to distinguish between the many look-alike words in English. Orthographic recall is necessary to correctly spell words. Words that are or can be easily recognized (e.g., tongue, bouquet, colonel, rendezvous, licorice) are not easy to spell. "Spelling is an index of orthographic knowledge. It demonstrates that a student knows the correct orthographic representation of a given word" (Kilpatrick, 2015, p. 186). "Spelling can sometimes be a window into a student's phonological and orthographic skills" (Kilpatrick, 2015, p. 187).

Phonological and Phonemic Awareness Assessment

The Phonological and Phonemic Awareness Assessment, created by Wiley Blevins, examines a student's range of phonological and phonemic awareness skills in a one-on-one setting. This assessment is designed to determine whether students need or would benefit from more intensive instruction and practice using the additional instruction provided within the Phonological and Phonemic Awareness activities and routines provided in BPI.

The range of skills assessed on the Phonological and Phonemic Awareness Assessment extends from word awareness, identifying rhyme, blending syllables, and deleting syllables skills in Level 1 to the more complex phonological and phonemic awareness proficiency skills of substituting sounds and adding and deleting sounds in Level 4. A suggested schedule of skills that should be assessed is provided by program level and time of the school year. The Phonological Awareness Assessment Next Steps table can be used to adjust or add phonological and phonemic awareness instruction. Students need to be proficient at

orally blending and orally segmenting words by phoneme in order for reading and spelling instruction to have high impact. These "power skills" are focused on in each level of BPI.

Research Support for the Phonological and Phonemic Awareness Assessment

Phonological awareness is defined by Kilpatrick (2015) as "having an awareness of sounds in spoken words, whether syllables, onsets, rimes, or individual phonemes" (p. 363). Phonemic awareness is a subset of phonological awareness and is related to the distinct sounds or phonemes in words (Blevins, 2017). "Activities that teach phonological awareness cultivate a student's ability to think about the internal details of the spoken word" (Moats, 2010, p. 56). "Direct teaching of phonological skills … is necessary from when children begin school until they become proficient readers and writers" (Moats, 2010, p. 17).

Phonological awareness can be broken into three levels of development:

- Early phonological awareness (Adams, 1990; Cassady, Smith, & Putman, 2008; Kilpatrick, 2015), usually developing in preschoolers, includes rhyming, alliteration, segmenting words into syllables, and identifying the first sounds in words.
- Basic phonological awareness (Adams, 1990; Kilpatrick, 2012; Swank & Catts, 1994; Wagner, Torgesen, & Rashotte, 1994) develops through Grades K–1 and includes phoneme blending and segmenting. These skills are necessary for growth in reading and spelling. Instruction at the phoneme level has the highest impact on student reading achievement.
- Advanced phonological awareness proficiency develops through Grades 2–4, appears to be needed for efficient sight vocabulary development (Caravolas, Volín, & Hulme, 2005; Vaessen & Blomert, 2010), and includes deleting, substituting, or reversing phonemes within words. More research is needed on the necessity of teaching these skills for all students past Grade 1 (Shanahan, 2021).

One-Minute Oral Reading Fluency Assessment

One-Minute Oral Reading Fluency Assessments are used to evaluate students' reading rate compared to national fluency norms, and provide another way to document progress over time. Scores are based on words read correctly within one minute, minus any errors, such as mispronounced words, word substitutions, omissions or skipped words, and hesitations that turn into supplying the word so the student can continue. The fluency norms provided to give context to the oral reading fluency rate come from the 2017 study by Hasbrouck and Tindal.

Two fluency passages, one fiction and one informational, are provided for each BPI level to give a quick snapshot of each student's reading fluency as compared to grade-level students for that level. For example, the Level 1 passages are written at a Kindergarten grade level, the Level 2 passages are written at a Grade 1 level, the Level 3 passages are written at a Grade 2 level, and the Level 4 passages are written at a Grade 3 level. This indicates how students are performing and progressing in their reading growth as compared to age and grade-level peers.

Research Support for the One-Minute Oral Reading Fluency Assessment

Kilpatrick (2015) indicates that passage fluency has been in use for quite some time. "Passage fluency appears to require the integration of multiple reading-related skills and be a facilitator of reading

comprehension" (Kilpatrick, 2015, p. 216). Fluency, according to Kilpatrick, is important because "students who can effortlessly read the words in a passage can focus their attentional and working memory resources on the meaning of that passage" (p. 216). "Oral reading fluency is a reliable and remarkably efficient predictor of elementary-school students' scores on more traditional (and more lengthy) measures of reading ability" (Roberts, Good, & Corcoran, 2005, p. 305). "The reality is that children who read with greater speed and accuracy (i.e., with greater fluency) tend to read more skillfully and with greater comprehension than children who read less fluently" (Roberts et al., 2005, p. 306).

According to Hasbrouck and Tindal (2017), oral reading fluency (ORF) words correct per minute (WCPM) can be used for screening and progress-monitoring purposes. "ORF norms that identify performance benchmarks at the beginning (fall), middle (winter), and end (spring) of the year" (Hasbrouck & Tindal, 2017, p. 2) can be used to determine how an individual student's score compares to those of students in his/her grade level. Norms can also be used to determine if a student is making progress across the school year and if that progress is enough to maintain or accelerate progress as needed.

In 2017, Hasbrouck and Tindal created the third set of ORF norms using three large sets of data with a total of 6,663,423 scores representing students across the United States. Only students in Grades 1 to 6 are included in this set of norms since only one of the data sets had any Grade 7 and 8 scores. "Across all the six grades, the overall increase in WCPM was 5" (p. 11) when comparing the ORF Norms from 2006 to those for 2017. Hasbrouck and Tidal conclude "it is hoped that this set of three studies, conducted over a period of 25 years, can also give educators a perspective of the stability of ORF scores across materials and grades and nearly three decades of reading instruction in schools in the United States" (p. 14).

Assessments Embedded within Unit Instruction

Embedded in each unit are multiple opportunities to assess students' proficiency and mastery of skills taught within the current unit and skills taught in previous units. The following assessments are designed to allow teachers and interventionists to gather data necessary to make instructional adjustments on a unit-by-unit basis, as appropriate.

- Monitoring Mastery: Cumulative Assessments are provided to assist teachers in determining skill mastery versus skill decay and to make immediate course corrections before learning issues develop. The Cumulative Assessments provide information on students' progress towards mastery based on accuracy and fluency of decoding, high-frequency words, and dictation skills of the current unit's target skill as well as of the target skills from the previous few units.
- Cumulative Review: Opportunities to continually assess have been embedded in the Student Book. In Lessons 3 and 6 of each unit, students read Cumulative Sentences. These are carefully constructed sentences with no picture support that use words with the focus skill and high-frequency words from the unit, as well as focus skills from previous units.
- Pacing Adjustment and Repetition: At Lesson 5 in each unit, a formative assessment prompts the teacher to stop and assess. For students showing basic proficiency reading and writing words with the current unit's targeted phonics skills, the recommendation is to move the students to the next unit of instruction. If students are not able to apply the skills yet, the

recommendation is to complete Lessons 6 to 10 for additional instruction and practice. Making the informed decision to move on to the next unit or provide additional instruction and practice enables individualization and intensification of instruction based on student needs.

Research Support for the Assessments Embedded within Unit Instruction

The assessments that are embedded in the unit instruction serve a couple of purposes. The most obvious includes providing the assessment that will confirm the instruction is working or that additional instruction is needed. The less obvious purpose is providing additional practice and reminders to practice the skills that were presented not only in the current unit but also in previous units.

When describing the basics of effective reading instruction in the *Introductory Guide to Structured Literacy* (Spear-Swerling, 2019), practicing what is learned, with many practice opportunities, is necessary for learning to occur. Additionally, assessment targeting specific skills that students are doing well on, or that need to be addressed, is another important basic element of reading instruction. Instructional activities for independent practice should allow children to apply their newly developing skills in a variety of ways and with much repetition (Cunningham, 2007).

The Tier 3 recommendation provided in an IES practice guide (Gersten et al., 2009) states schools should "provide intensive instruction on a daily basis that promotes the development of the various components of reading proficiency to students who show minimal progress after reasonable time in tier 2 small group instruction" (p. 10). Some of the suggestions for carrying out this recommendation are to "implement concentrated instruction that is focused on a small but targeted set of reading skills", "include opportunities for extensive practice and high-quality feedback", and "ensure that tier 3 students master a reading skill or strategy before moving on" (Gersten et al., 2009, p. 10).

High-Frequency Word Screener

The High-Frequency Word Screener examines students' mastery of the top 250 most frequent words in printed English, including many irregularly spelled words that typically pose issues for students, thus hindering reading fluency. Words students hesitate to pronounce quickly or words that are pronounced incorrectly, are counted as incorrect. High-frequency words are not taught as a separate category of words in BPI, but rather are part of the overall instruction.

Research Support for the High-Frequency Word Screener Assessment

In a summarization of the importance of automatic word recognition, Adams (1990) states "human attention is limited. To understand connected text, our attention cannot be directed to the identities of individual words and letters. In reading as in listening, the process of individual word perception must proceed with relative automaticity" (pp. 228–229). Adams continues the thought process by indicating that when the individual words are perceived, we can "direct our attention to the relationship between them. Only as their perception has become relatively automatic can we devote our active attention to the process of understanding them" (p. 229).

Adams (1990) points out that the 105 words that occur most frequently in English account for about 50 percent of running text. Adams continues by saying high-frequency words are unique to the reader's reading experience. High-frequency words for a highly experienced, skillful reader may be infrequent words for a young or poor reader. Johns and Lenski (2019) determined 13 words account for

approximately 25 percent of all words in school texts and the materials adults read. Johns and Wilke (2018) emphasize the importance of mastery of high-frequency words. To know which words have been mastered, they need to be assessed. Practice in reading high-frequency words also occurs during assessment.

Progress Monitoring Assessments and Student Observation Form

To make sure schools and districts that use BPI have a full suite of assessments related to early reading foundations, additional assessments are provided. These assessments are to be used as needed to further explore each student's instructional needs. These assessments include a Print Concepts Quick Check, additional Letter-Name Assessment, additional Letter-Sound Assessment, Handwriting Assessment, and cumulative High-Frequency Words by Unit.

The Student Observation Form is an easy-to-use tool to collect daily information about students. This information could be gathered on a daily basis while teachers observe students during instructional activities, while listening to students read, and when evaluating students' writing. This information adds to the data that a teacher can use to adjust or modify instruction.

Research Support for the Progress Monitoring Assessments and Student Observation Form

Reading and learning to read is complex. There are many areas where assessment is necessary. Concepts of print are "fundamental to an appreciation of how print works, and they are the foundation for the development of decoding skills" (Dougherty Stahl et al., 2020, p. 17). Ehri (2005) suggests children must learn the alphabet before a reliable system of remembering words becomes established. McCarroll and Fletcher (2017) found a significant positive relationship between the quality of handwriting and academic success in writing and reading. James (2017) found "handwriting experience can have significant effects on the ability of young children to recognize letters" (p. 1).

Kilpatrick (2015) identifies "a useful set of three developmental levels that helps organize and integrate research related to phonological awareness development, reading acquisition, and reading difficulties" (p. 91). At level 1, students learn letter names and letter sounds. Phonic decoding comes with level 2 when students combine letter-sound knowledge with phonological blending to sound out unfamiliar words. Orthographic mapping comes at level 3 when students expand their sight word vocabulary. These three areas overlap as they are being learned. However, these three levels of development are important to successful, skillful reading and thus it is important to identify students' abilities and needs surrounding instruction.

Summary

This report briefly describes the assessments and screeners that are part of the BPI program. It also provides justification for the inclusion of these assessments and screeners based on the importance of the skills being assessed. There is a full suite of assessments for those schools and districts that do not have their own. For districts that already have an established set of assessments, the BPI assessments are available if needed to fill in any gaps.

The QPA/QSA are instrumental in determining the best starting unit when placing students in BPI, making these assessments essential to administer at the start of instruction. The diagnostic nature of these tools provides the explicit information needed to ensure that the instruction is appropriate. The different forms can be used across the school year to determine if instruction is working.

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