



DYNAMIC ASSESSMENT OF CONTEXTUAL ANALYSIS IN FOURTH- GRADE STUDENTS: A PILOT STUDY

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— ABSTRACT —

Purpose: The purpose of this study was to pilot a dynamic assessment of contextual analysis on low-income, fourth-grade students. A prior assessment, the Dynamic Assessment of Morphological Analysis (Larsen & Nippold, 2007), was modified to develop the Dynamic Assessment of Vocabulary in Context (DAVIC) for the current study. The primary objective of the DAVIC is to use graduated prompts aimed at context clues to assess the word-learning ability of fourth-grade students.

Method: Twenty-eight, typically developing English-speaking, fourth-grade children were grouped according to their performance (Pass or Non-Pass) on a standardized assessment. All participants were assessed using the DAVIC in which a series of five graduated prompts were presented until they were able to appropriately define a word from context.

Results: Using graduated prompts aimed at context clues can reveal a range of abilities regarding the amount of support a child needs to derive word meaning.

Conclusion: Clinical implications about the use of graduated prompts to measure word learning are discussed.

Keywords: dynamic Assessment, graduated prompting, vocabulary, context clues

Reading is an area of difficulty for many fourth-grade students. Data from the 2019 National Assessment of Educational Progress (NAEP) reveals that only 35% of fourth-grade students perform at or above a proficient reading level. Reading difficulties are more acute in minority and low-income populations. For example, in 2019, the average NAEP reading score for African-American fourth-grade students was 204, which was 27 points lower than that of White fourth-grade students. Further, the average score of fourth-grade students who attended low-income schools was 207, as opposed to an average score of 235 for students who did not attend low-income schools. As a result, researchers have focused on the “fourth-grade slump,” which refers to the decline in reading skills that predominantly occurs among low-income, fourth-grade children. Vocabulary is a particular area of interest for reading researchers because it is one of the five essential components of reading, along with phonics, phonemic awareness, fluency, and reading comprehension (National Reading Panel, 2000).

Conceptually, vocabulary knowledge can present complexities because words are not simply “known” or “unknown.” Rather, word knowledge exists in increments. There are three levels of word knowledge: Unknown, Acquainted, and Established (Beck et al., 1979). Word knowledge is “unknown” when the meaning and the term are completely unfamiliar. Word knowledge is “acquainted” when there is a basic understanding of the term’s meaning. Established knowledge is demonstrated when the word meaning is easily and immediately recognized, and the term can be used appropriately. Speech-Language Pathologists (SLPs) often use assessments such as the Expressive Vocabulary Test (Williams, 2019) and the Expressive One-Word Picture Vocabulary Test (Martin & Brownell, 2011) to determine a child’s vocabulary abilities. However, these tests do not address the three levels of word knowledge. Instead, standardized assessments measure whether the word is established (fully known) or not.

Low-income fourth-grade students and academic vocabulary

Assessing vocabulary can be complex due to the incremental nature of word-learning, as well as the impact of income and exposure. Children from low-income homes tend to experience a decline in vocabulary skills (as measured by standardized tests) when they enter the fourth grade (Chall et al., 1990). This may be the result of a lack of experience with academic vocabulary and expository text in primary grades (Duke et al., 2003). For example, Yopp and Yopp (2000) found that only fourteen percent of ma-

terials read aloud in class by primary grade teachers were expository. Further research shows that first-grade students in low-income schools are exposed to informational texts for an average of 1.9 minutes per day (Duke, 2000). The impact of minimal early exposure to informational texts becomes evident in the fourth grade, which is when 1.) children begin to “read to learn” and 2.) low-income children experience a significant drop in reading performance (Chall et al., 1990).

Dynamic Assessment and Graduated Prompting

Unlike standardized tests, performance on Dynamic Assessment measures has shown to be uninfluenced by income. Rather than assessing a child’s prior exposure to a word, Dynamic Assessment allows the examiner to evaluate a child’s learning process and their responsiveness to different levels of intervention. Graduated prompting is a Dynamic Assessment method in which a series of predetermined probing questions or prompts are presented to determine a student’s immediate learning potential, their level of independence in answering a question, and their ability to transfer concepts to a similar but different task. Through graduated prompting, learning ability is measured by transfer, which is the distance between the child’s ability to perform the original task and their application of concepts to new tasks.

The Graduated Prompting Dynamic Assessment method has been shown to be useful when assessing word-learning. However, it has primarily been used during non-reading or single-word reading tasks (Larsen & Nippold, 2007; Camilleri & Botting, 2013; Wolter & Pike, 2015; Peterson et al., 2018; Wolter et al., 2020). One task that has been examined is morphological analysis (Ram et al., 2013). Morphological analysis is an independent word-learning strategy that involves the use of individual word parts (i.e., prefixes and suffixes) to derive word meaning. Larsen and Nippold (2007) used the Dynamic Assessment Task of Morphological Analysis (DATMA) to assess morphological analysis in typically developing sixth-grade children. The participants were provided with predetermined verbal prompts presented in a hierarchy (from minimal to maximal) until the participants were able to define 15 target words. Results showed that using the DATMA could reveal a wide range of abilities.

Although studies show that word-learning strategies can be successfully implemented outside of a reading task, strategies focused on vocabulary may be particularly instrumental when reading an expository passage. This is because readers tend to focus on vocabulary in order to read an expository text.

Kletzien (1991) examined the reading strategies of high school students who were reading expository text passages. Results showed that “focusing on vocabulary” was the strategy most used by all participants. Despite this, there is little research on using word-learning strategies during an actual reading task.

Contextual Analysis Strategies

One word-learning strategy that can be examined during a reading task is contextual analysis. Contextual analysis is an independent word-learning strategy that involves the use of context clues to derive word meaning. Current research about providing vocabulary instruction specifically in the area of context clues is mixed and scarce. Results from a meta-analysis (Kuhn & Stahl, 1998) indicated that making children aware of unknown words in their reading was equally effective as teaching a specific context clue strategy. In another meta-analysis (Elleman et al., 2019), seventeen studies about vocabulary interventions for middle school students were reviewed, but none addressed contextual analysis. A review of contextual analysis studies was completed and based on efficacy, two evidence-based contextual analysis strategies were selected to be examined in this pilot study.

According to the Word Learning Strategy (WLS) curriculum, direct strategies to teach context include the following 1.) Pause when you find an unknown word 2.) Read the surrounding words and sentences to look for context clues 3.) Use the clues to infer the meaning of the unknown word, and 4.) Try out your inference to see if it makes sense (Graves, et al, 2017). The two evidence-based contextual analysis strategies used in this pilot study: Forward and Backward Cues (Gardner, 2007) and SCANR (Jenkins et al., 1989) are in line with the WLS curriculum. Specifically, the Forward and Backward Cues strategy is in line with WLS strategy number 2 and the SCANR strategy is in line with WLS strategy number 4.

Forward and Backward Cues (Gardner, 2007)

Teaching children to locate forward and backward cues is a specific context clue strategy that has been shown to be effective (Gardner, 2007). Forward cues are those which occur after the target word in context, and Backward cues are those which occur before the target word in context.

SCANR (Jenkins et al., 1989)

Another specific context clue strategy that has shown to be effective involves teaching a child to substitute the unknown word for a known word if it makes sense in the context. This strategy is called

SCANR (Jenkins et al., 1989), which is an acronym that stands for: Substitute a word or expression for the unknown word; Check to find context clues that support your idea; Ask if the substitution fits all of the context clues, Need a new idea?; and Revise the idea to fit the context.

Purpose of Current Study

Currently, there is limited research on the use of graduated prompting and word-learning with contextual analysis strategies. Prior research indicates that graduated prompting can be useful in observing word-learning ability, but studies on this method of Dynamic Assessment have been largely focused on morphological analysis as a word-learning strategy (Larsen & Nippold, 2007, Ram et al., 2013, Wolter & Pike, 2015, Wolter et al., 2020). Research is needed to examine the implementation of Graduated Prompting during a reading task.

The purpose of this study is to expand the current body of literature on Dynamic Assessment by piloting a graduated prompting protocol focused on contextual analysis. This study also aimed to determine how well fourth-grade children could use graduated prompts focused on contextual analysis to derive word meaning. By focusing on word-learning ability, this study has the potential to demonstrate a process for educators to examine a child’s response to intervention in the area of vocabulary.

The following research questions were asked:

Can a Graduated Prompting Dynamic Assessment aimed at context cues reveal a range of performance levels in fourth-grade students?

Is there a relationship between word knowledge (as measured by standardized assessment) and word learning ability (as measured by graduated prompting)?

Method

Setting

All procedures involved in this study were approved by the Institutional Review Board (IRB) of the University of Cincinnati before the initiation of data collection. Data for this study was collected and published as part of a dissertation. This study was conducted at a public school in a southern Ohio county in the middle of the academic year. According to public records, this school serves a primarily low-income population, with over 95% of the students receiving free or reduced lunches. This school serves grades Kindergarten-8. Additionally, public data reveals that the school population is primarily African American (93.3% Black and 6.7% non-Black). Each participant was tested individually in a quiet envi-

ronment in the school.

Participants

Consent to participate was sent to the families of all students in the fourth grade (75 students). Parent consent and child assent to participate in this study were received from thirty fourth-grade students. Twenty-eight typically developing, English-speaking, fourth-grade students participated in and completed all phases of the study. All participants were African-American. Individual data regarding participant socio-economic status (SES) was not collected. However, public SES data (reported above) suggests that the participants in this study were primarily from low-income households.

The fourth-grade participants in this study ranged in age from 9;3 (9 years 3 months) to 11;1 (11 years, 1 month). The mean age of participants was 9;9. There were 19 female participants and 9 male participants. School records indicated that all participants presented with normal hearing acuity.

Procedure

Standardized Vocabulary Testing

The Expressive One-Word Picture Vocabulary Test, fourth edition (EOWPVT-4) was administered to thirty fourth-grade children who consented to participate in the study. Due to attrition and exclusionary criteria, the data of twenty-eight participants were analyzed. Participants were divided into two groups based on their performance on the EOWPVT-4. One group consisted of participants who scored within one standard deviation ($SD=15$) of the mean ($M=100$) on the EOWPVT-4. This group was referred to as the Pass group. The second group consisted of participants who scored more than one standard deviation below the mean on this assessment. This group was referred to as the Non-Pass group. Based on EOWPVT-4 scores, 14 participants were placed into the Pass group (scored 85-115, $M=95.5$), and 14 participants were placed into the Non-Pass group (scored below 85, $M=75.4$). The even number of participants per group occurred naturally.

Dynamic Assessment

Twenty-eight Pass and Non-Pass participants were assessed using a graduated prompting Dynamic Assessment. The DATMA (Larsen & Nippold, 2007) was adapted to be appropriate for assessing context clue usage with fourth-grade children. The Dynamic Assessment for the current study is entitled: Dynamic Assessment of Vocabulary in Context (DAVIC). The purpose of the DAVIC was to determine the level of prompting required for a participant to successfully

express the meaning of a word using context clues.

Preparation of text. The DAVIC was used to determine the level of support that a child needs to derive the meaning of unknown words in a given context. The target words in the DAVIC were presented in two expository reading passages created for this study. All vocabulary words used in the DAVIC passages were selected from a fourth-grade science textbook. Each passage contained five target words that are listed in Appendix A. The subject matter of the reading passage was selected based on Ohio learning standards, and the readability of each passage was determined using the Flesch-Kincaid Grade Level Readability Formula (Flesch, 1948; Kincaid et al., 1975), which was calculated to be a 4.3 using computer software.

Text Preparation Coding and Reliability. Four raters read the texts to determine the level of supportiveness of each context clue (Beck et al., 1983). For consistency, each context clue in the reading passages was written to be rated as either “general” or “directive” based on the Beck et al. (1983) descriptions. A general context provides basic information that may lead a reader in determining a basic category for a target word. A directive context leads a reader to the appropriate meaning of the target word. Four raters found each context clue to be either general or directive with an agreement of 100%.

Testing Procedures. The administration of the DAVIC occurred in three stages: Pretest, Reading Passage and Prompting phase, and Transfer task.

Pretest. The first stage of the DAVIC was a pretest. The purpose of the pretest was to determine participants’ prior knowledge of each target word’s meaning. During the pretest, participants were asked to provide the meaning of each of the ten words (out of context) that would be encountered in the text. For each pretest item, participants were asked, “What does ___ mean?” All responses were audio-recorded for coding purposes.

Pretest Coding and Reliability. The pretest responses were coded for word knowledge based on levels defined by Beck et al. (1979), which are: Unknown, Acquainted, and Established. A coding key (Appendix A) was used to score all responses. Participants could score up to 3 points for each pretest item for a possible total of 30 points on the pretest. Responses coded as Unknown, Acquainted and Established, were scored as 1, 2, or 3, respectively. All responses were scored by two coders. The agreement between coders for the pretest was calculated at 97%.

Reading Passage and Prompting Phase. After pretesting, each participant was presented with the expository text passages one at a time. Participants

were instructed to read the passage aloud. When a participant demonstrated that they were unable to decode a word, the word was stated for them one time.

Graduated Prompts. The DATMA (Larsen & Nipold, 2007) was adapted to develop the procedure, prompting, and scoring system used for the DAVIC. The prompts selected were based on research (Gardner, 2007; Jenkins et al., 1989; Kuhn & Stahl, 1998), the Ohio learning standards, and the general prompt hierarchy. After a participant read a passage, they were presented with a scripted series of five graduated prompts to determine the amount of prompting necessary for each participant to successfully express the meaning of each target word. Participants who successfully defined the target word at a given Prompt level were awarded the specified number of points, and the next item was administered. Research-based strategies were modified for this study. The methods listed below were presented in a scripted format. The prompting structure and scoring procedure were as follows:

1. Prompt One: Incidental Word Learning (5 Points). Because incidental word learning is a reader's ability to derive the meaning of an unknown word during the reading process, no scaffolding was provided by the clinician. After reading the passage, the paragraph containing the target word was removed from the child's sight. Participants were asked to define the word. The purpose of this prompt was to assess incidental word learning after one exposure in context (Wagovich & Newhoff, 2004).

2. Prompt Two: Context clue reminder. (4 Points) After not responding to prompt 1, participants were shown the word in context by pointing and were verbally instructed to use context clues to derive word meaning. The purpose of this prompt was to allow the fourth-grade participants to utilize their independent (or classroom-based) knowledge of the use of context clues based on academic content standards.

3. Prompt Three: Direct instruction in Forward and Backward Cues (3 Points). After not responding to Prompt 2, instruction in the forward and backward cue strategy (Gardner, 2007) was provided. All participants were required to successfully locate the forward and backward cue in an unrelated passage before being presented with the DAVIC passage. The forward and backward cue treatment was developed based on Gardner's (2007) procedures and is outlined in Appendix B. The purpose of this prompt was to provide evidence-based instruction in deriving word meaning.

4. Prompt Four: Modeling (2 Points). After not responding to Prompt 3, a modeling technique was

used in which the clinician pointed to the context clue and said, "This is the context clue. The clinician then read the context clue aloud and said, "Now tell me what the word means." This prompt was used to provide a higher-level prompt as defined in general prompt hierarchies.

5. Prompt Five: Instruction in Substitution strategy (1 Point) After not responding to Prompt 4, a modified version of SCANR (Jenkins et al., 1989) was implemented. To ensure that participants understood how to use the strategy, instruction was provided. The SCANR treatment was developed based on Jenkins et al.'s (1989) procedures and is outlined in Appendix B. All participants were able to successfully substitute a word at the trial level prior to completing the DAVIC task. The purpose of this prompt was to provide evidence-based instruction in deriving word meaning.

At each prompting level, the participants were asked to define the term based on what they found in the context. All participants had to demonstrate an Established Level (as defined in the Coding Key in Appendix A) of knowledge before completing a transfer task for that word. Participants who did not answer with an Established response for a prompt were provided with graduated prompts until this occurred. If an established response was not elicited after being presented with all five prompts, the participant was given a score of 0 (No Level of Successful Prompting [NLSP]) and did not complete a transfer task for that item. The reading passage and prompting phase were audio recorded.

Transfer/Application Task. When a participant correctly defined a word, they moved on to Stage Three, which was the transfer (or application) task. The transfer task was an application task in which each participant was asked to apply the word knowledge gained through graduated prompting by using the target word in a new sentence. If the participant was unable to define the target word using the graduated prompting system, then an application task was not completed for that target word, and it was automatically coded as "Unknown" for scoring purposes. The application task was audio recorded to ensure that the integrity of the responses was maintained during analysis.

Coding and Reliability for the transfer task. Coding for the DAVIC transfer task (sentence production) was similar to that of the DAVIC pretest (definition production). Responses were coded as Unknown, Acquainted, and Established, and were scored as 1, 2, and 3 respectively for each of the ten items. If the participant did not complete the transfer task because their successful prompting level could not be determined for the word, then this occurrence was

automatically coded as Unknown. Because sentence productions may not contain information commonly found in definitions (e.g., “We may get a lot of precipitation this week.”), both syntactic and semantic knowledge were considered when determining the level of word knowledge for the transfer task. All responses were scored by two coders. Agreement for the transfer task was calculated at 90%.

Scoring. The DAVIC procedure consisted of three phases yielding three separate scores. The pretest had a total possible score of 30. The graduated prompting phase had a total possible score of 50. This phase consisted of ten target words worth a possible five points each. The post-test had a total possible score of 30.

Results

The aim of this study was to pilot a graduated prompting protocol focused on contextual analysis. There was a potential confounding variable (supportiveness of text) in this study. Therefore, an analysis was performed to examine whether this variable contributed to the outcomes. A chi-square test of independence was performed to examine the relationship between the supportiveness of text (general or directive) and the frequency of responses at each prompting level. The relationship between these variables was not significant, $\chi^2=7.347$, $df=5$, $p<.196$. The above analysis suggests that changes observed in this study are not due to a confounding variable.

DAVIC and Word Learning Ability

Multiple analyses were completed to examine word learning ability. First, it was necessary to determine if there was a relationship between the DAVIC pretest and the EOWPVT-4 because both were assessments of word knowledge instead of word learning ability. A Pearson Correlation indicated that scores on EOWPVT-4 and DAVIC pretest scores were significantly correlated, $r=.599$, $p=0.01$. This positive correlation means that students who scored higher on the EOWPVT-4 also scored higher on the DAVIC pretest. Conversely, it was found that after completing the graduated prompting procedure, no signifi-

cant correlation ($r=.184$ $p=.184$) was found between EOWPVT-4 (word knowledge) and the DAVIC post-test scores (word learning ability).

Next, the relationship between word knowledge and word learning ability was examined by analyzing the participants’ performance on the standardized assessment (Pass and Non-Pass) and the Dynamic Assessment. Levene’s test was used to test whether the groups (Pass $N=14$ and Non-Pass $N=14$) had equal variances on the DAVIC. The result ($F=2.308$, $p=.141$) suggested that the two groups had equal variances, so the assumption was met. An independent measures t-test showed that there was no significant difference between the Pass group ($M=67.00$, $SD=14.502$) and the Non-Pass group ($M=64.57$, $SD=9.525$) on the DAVIC graduated prompting task, $t(26)=.524$, $p=.605$, $d=.19$.

Finally, participants’ word learning from pretest to post-test was examined by converting the pretest and transfer task scores to a percentage (30 total points possible, 30 points=100%). A paired-samples t-test was used to determine if there was a significant difference between the variables. Cohen’s D was computed to determine effect size. A paired samples t-test showed that the participants scored significantly higher on the transfer task ($M=62.32$, $SD=10.61$) than on the pretest ($M=37.96$, $SD=5.87$); $t=-10.73$, $p<.001$, $d=2.84$.

Level of Successful Prompting

To examine the range of abilities demonstrated at each prompt level, a frequency of occurrence was calculated at each prompt level. The results of this study revealed that participants were able to derive word meaning more frequently at Prompt 2 than at any other prompt level. As shown in Table 1, Pass and Non-Pass participants performed almost equally at Prompt Level 2, in which they were given the passage, shown the target word, and instructed to “Re-read this to find context clues.” Conversely, the prompt that was successfully responded to the fewest amount of times was Prompt 5 (SCANR/Substitution). Out of a total of 280 responses from the participants, only one response was correct at Prompt 5.

Table 1

Frequency of successful responses at each prompt level

	Prompt 1	Prompt 2	Prompt 3	Prompt 4	Prompt 5	*NLSP
Pass Participants (n=14)	16	69	18	29	1	7
Non-Pass Participants (n=14)	8	70	28	24	0	10

Note. *A word was coded as NLSP when a successful prompt was never elicited.

Prompt five was reached a total of 18 times by participants. Out of 18 opportunities, only one resulted in a successful prompt. The other 17 occurrences did not result in a correct definition production and were consequently given a code of NLSP (No level of Successful Prompting) for that item.

A Pearson Correlation was used to determine if there was a significant relationship between the EOWPVT-4 standard score and the frequency of responses at each Level of Successful Prompting. The analysis revealed the following correlations: EOWPVT-4 scores and Prompt 1 frequency were significantly and positively correlated, $r=.429$, ($p=0.05$). The correlation between EOWPVT-4 score and Prompt 2 (context only) frequency was not significant, $r=.123$ ($p=.535$). The EOWPVT-4 score and Prompt 3 (direct instruction) frequency were significantly correlated, $r=-.376$, ($p=0.05$). The correlation between EOWPVT-4 score and Prompt 4 (modeling) frequency was not significant, $r=-.038$ ($p=.850$). The correlation between EOWPVT-4 scores and Prompt 5 (substitution) frequency was not significant, $r=.008$ ($p=.968$). The correlation between EOWPVT-4 score and NLSP (no level of successful prompting) frequency was not significant $r=-.335$ ($p=.082$).

DAVIC and Level of Word Knowledge

Using the “Unknown, Acquainted, Established” coding system, several word-learning patterns were observed among the participants within the DAVIC pretest and DAVIC transfer tasks. Table 2 shows the average level of word knowledge for the pretest and the transfer task for the population ($n=28$). During the DAVIC pretest (Definition) portion of the assessment, most participant answers (89%) displayed an Unknown level of knowledge for the target words (i.e., Cycle- “A person that you just be, act like.”). Few answers (8%) displayed an Acquainted level of word knowledge for the target words (i.e., Glacier- “Big ice.”), and even fewer (3%) demonstrated an Established level of word knowledge for the target words (i.e., Cycle- “Something that repeats.”). Following exposure in context and with scaffolding provided through Graduated Prompting, most participant productions (55%) demonstrated an Acquainted level of knowledge (i.e., “I see evaporation when my mom makes tea.”). Additionally, more productions were

found to exhibit an Established level of word knowledge (i.e., “The story has the word evaporation which means to turn liquid into gas.”) after Graduated Prompting (16%) than before Graduated Prompting (3%). Finally, the number of productions that showed an Unknown level of word knowledge (i.e., “If it erosion I wouldn’t know what to do.”) greatly decreased from 89% to 29%. The DAVIC graduated prompting phase had a large effect ($d=2.84$) on the observed improvement.

Discussion

The purpose of this study was to expand the current body of literature on dynamic assessment by piloting a graduated prompting protocol focused on contextual analysis. This study also aimed to determine how well fourth-grade children could use graduated prompts focused on contextual analysis to derive word meaning. Results from the current investigation suggest that the typically developing participants in this study knew how to use context clues to find word meaning before being exposed to the graduated prompting procedure. This is evidenced by the fact that most of the participants were able to demonstrate an Established level of word knowledge after Prompt 2 (given the reading passage and told to use context clues). It is possible that contextual analysis is a skill that is covered in the classroom setting due to the inclusion of context clues on Common Core and state academic learning standards. Therefore, the current study provides more information about the amount of support the participants needed to demonstrate word learning as opposed to the specific contextual analysis strategies used. Results from this study support the Kuhn and Stahl (1998) meta-analysis in that the “specific strategy instruction in deriving words from context does not have any advantage over merely providing children with practice in deriving word meanings.”

Although this study does not provide evidence for teaching any specific contextual analysis strategy, the current study demonstrates that 1.) A graduated prompting task can reveal practical information about the level of word knowledge obtained from context 2.) Graduated prompts can reveal practical knowledge regarding the amount of support needed to derive word meaning from context, and 3.) Dynam-

Table 2

Average Level of Word Knowledge by Pretest and Transfer Task Percentage $n=28$

	Unknown	Acquainted	Established
Pretest	89%	8%	3%
Transfer task	29%	55%	16%

ic Assessment can play a part in closing the achievement gap found with Standardized Assessments.

Graduated prompting and level of word knowledge

Word knowledge is based on exposure, and the complexity of vocabulary knowledge can be revealed within levels: Unknown, Acquainted, and Established (Beck et al., 1979). Standardized assessments such as the EOWPVT-4 measure vocabulary knowledge but do not provide information regarding the specific level of word knowledge. Instead, standardized vocabulary assessments indicate whether a word is known or not. However, words are not simply “known” or “unknown” because knowledge about a term’s meaning occurs in stages. For example, having a child name or point to a picture of an item does not reveal information about the child’s ability to use the word. Further, having a child define a word does not provide information about that child’s knowledge of the word in context. Finally, neither of those evaluation methods informs intervention by providing information about the amount of support a child needs to derive meaning. Graduated prompting provides practical word-learning information that is not captured by traditional standardized tests. This study showed that graduated prompting could be used to examine both vocabulary knowledge and word-learning potential. Before the graduated prompting procedure, most participants displayed an Unknown level of knowledge of the target words. Following the DAVIC procedure, most participants could appropriately use the target words in a sentence, demonstrating an increased number of Acquainted and Established responses.

Graduated prompting and level of support

In the current study, the DAVIC provided information about the amount of scaffolding necessary for a child to learn the meaning of a word. The results revealed that the participants were able to derive word meaning more frequently at Prompt 2 than at any other prompt level. At this level, participants were given the passage to look at and were told to use context clues to define the word. Participants were not told how to find a context clue and were not instructed on what a context clue was. Despite the lack of instruction provided, Pass and Non-Pass group participants performed almost equally in the Prompt 2 category. The data collected shows that most participants, despite their performance on a standardized test, were able to derive word meaning after being exposed to the target word in context (Prompt 2). This provides clinical implications regarding the amount of support a child may need to derive word meaning

from context. Specifically, information from the earlier mentioned Table 1 reveals that most children in this study could derive word meaning from context, and those that could not, were generally able to respond when given higher levels of support.

Word Knowledge vs. Word Learning Ability

The research site for this study was a low-income school per public records. Studies show that low-income children perform poorly on standardized vocabulary tests (Burton & Watkins, 2007; Washington and Craig, 1992). Because children with language disorders were excluded from this study, it was presumed that the current study sample only consisted of children with typical language abilities. Despite this, out of the twenty-eight participants, half (n=14) had a standard score lower than 85 on the EOWPVT-4. Current findings are consistent with prior research, which found that the majority of low-income African American children assessed with a standardized vocabulary test scored below the mean (Washington and Craig, 1992).

Graduated prompting with contextual analysis may be a useful tool to address the achievement gap found when administering standardized assessments to marginalized populations. A significant finding in this study was that there is no relationship between word knowledge as measured by the EOWPVT-4 and word-learning potential as measured by the DAVIC. Participants who scored poorly on the standardized test also scored lower on the Dynamic Assessment pretest. Both of these were assessments of word knowledge as opposed to word learning ability. However, when word-learning potential (or ability) was evaluated with the DAVIC, the children from Pass and Non-Pass groups performed similarly.

Clinical Implications

A basic tenet of Dynamic Assessment is that the information obtained can be used to plan intervention. Therefore, the current study presents clinical implications. First, a feature of the DAVIC is that in addition to determining whether a child has learned a word or not, information gained from the DAVIC process can be used to identify how well a child knows a word (Unknown, Acquainted, Established). Clinicians and educators may find this system more informative than the traditional binary (right or wrong) system of assessing word knowledge.

Next, Graduated Prompts aimed at context clues may assist educators with determining the amount of instruction that a child requires to derive word meaning successfully. This instruction can be implemented practically to determine if the child responds

to intervention.

Finally, a practical model for evaluating word knowledge from sentence production was developed. This was necessary because the requirements for producing a sentence are quite different than the requirements for producing a definition. For example, according to Appendix A, in order to demonstrate an established level of knowledge of “precipitation”, the participant had to mention rain, sleet, or snow. However, many students used the word appropriately in a sentence but did not refer to an actual form of precipitation. For example: “In the winter precipitation happens”; and “There was a lot of precipitation during December and January.” These productions are acceptable uses of the term. Therefore, syntactic appropriateness should be considered when determining the level of word knowledge during a sentence production task. This is supported by the lexical quality hypothesis, which states that the semantic constituent of a word includes word meaning in addition to grammatical information (Perfetti & Hart, 2002). In this study, a production was deemed Unknown when it displayed no knowledge of the target word; a production was deemed Acquainted when it demonstrated either semantic or syntactic knowledge, and a production was deemed Established when it demonstrated both semantic and syntactic knowledge. This information may be useful in the educational setting because it illustrates that children can show knowledge about a word without providing a specific definition. Further, if a child can use a word appropriately, then they are demonstrating that they have at least an Acquainted level of word knowledge.

Limitations and Future Research

One aim of this study was to determine how well fourth-grade children could use graduated prompts focused on contextual analysis to derive word meaning. While the current study did show that graduated prompts aimed at context clues could provide information about word learning with the sample used, more research is necessary before findings can be generalized to other populations. This study examined primarily low-income, African-American students. More research is needed with a larger sample of children from various backgrounds.

Future research should examine the substitution strategy in a graduated prompting model. The method of substitution used in this study may not have been an effective strategy when examining academic vocabulary. Most participants (17 out of 18) who attempted Prompt 5 were not able to derive word meaning. Although prior research regarding the SCANR method (Jenkins et al., 1989) has shown substitution to be effective as a word-learning strategy, the current study used a modified substitution

procedure which may have decreased its effectiveness. Another reason for the ineffectiveness of the substitution strategy during this study could be the use of content-specific (academic) words. Academic vocabulary words such as “erosion, condensation, and weathering” are not easily substituted by other words. Therefore, successful implementation of the substitution strategy may have been influenced by the type of words chosen. Also, because of the challenging nature of substitution (find a synonym), this strategy may have been more appropriately placed earlier in the graduated prompting hierarchy.

The current study provides information about the level of immediate word learning. However, future research should longitudinally examine the effectiveness of word learning gained through the Graduated Prompting process.

In conclusion, using graduated prompts aimed at context clues can reveal a range of abilities with regards to the amount of support a child needs to derive word meaning. Additionally, by using the DAVIC to assess word learning ability, the incremental nature of word learning (Unknown, Acquainted, Established) can be evaluated. Using a graduated prompting Dynamic Assessment such as the DAVIC can also close the achievement gap found on standardized vocabulary tests by measuring what a child can learn as opposed to assessing what a child already knows.

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