Contextual Instruction in Vocabulary Development

By Jeffrey B. Dunham
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**Note — Please see MLK for related materials, such as tables, that are not included in the web version of this paper.*

The Research Question:
Schools devote considerable time to teaching vocabulary, but it has not been clear what is the most effective method. There are presently four methods of vocabulary instruction: (1) word lists, (2) wide reading -- learning new word meanings through context without instruction, (3) triangulation -- wide reading, plus instruction in using context, knowledge, and word parts, and (4) context, plus aids such as a glossary or dictionary. Dulin argues that the last three methods may work, each in certain circumstances. Contextual instruction, also known as the use of context clues, has become the preferred method of vocabulary instruction for researchers. Many theoretical and how-to papers have also promoted the value of teaching words in context. However, more recently, the research has suggested that the use of context in teaching vocabulary is not as valuable as was originally thought. Perhaps the methods of some previous research have been flawed, but how can the conflicting evidence be accounted for? Are context clues still valuable in the teaching of vocabulary, and can students infer word meaning through repeated exposure to that word in naturally-occurring context? The past research has failed to answer these questions with any agreement. As a result of the perceived superiority of teaching vocabulary in context, instruction has been developed in which vocabulary is taught using rich context and contrived passages. Some research has attempted to discredit this practice, claiming that most unfamiliar words are not surrounded by much context. Still more research refutes both the idea that students learn new words from context and that they learn them through incidental reading. The existing literature, which focuses on these issues, will be examined here.

Review and Analysis of Previous Literature:
The apparent fact that students increase their vocabularies by thousands of words every year has led to much research which attempts to explain this increase. Nagy and Anderson propose that wide reading is the best way to improve growth in students' vocabularies. This assertion assumes that most vocabulary is learned through context and not direct instruction. However, research until 1985 had failed to overwhelmingly support this hypothesis. Nagy and Anderson acknowledge that the value of learning words from context may have been overestimated, primarily by studies that provided context clues which made determining word meaning much easier than would be found in a natural setting. In addition, students' ability to derive the meaning of the word from context was positively affected by explicit instructions in how to do so. Also, previous research had generally presented words which involved learning a new term for a familiar concept, which was much easier than learning both a new concept and a new term.

Nagy, Herman, and Anderson conducted a study in 1985 in order to provide more support for their hypothesis that learning from context accounts for a large portion of vocabulary growth in school children. The researchers characterized their hypothesis that vocabularies grew from wide reading as "incidental learning." They theorized that this incidental learning occurred slowly and in small increments. They developed a study which attempted to determine whether students do acquire measurable knowledge about unfamiliar words while reading natural text. Their goal here was to prove that, despite the fact that the evidence was not as supportive as it seemed, contextual instruction was valuable in vocabulary development. The researchers argued that substantial, if incomplete, knowledge about a word can be gained on the basis of a single encounter (237). These incidental encounters occur in small increments of time, which may produce only one nuance of word meaning (but still a substantial part of the meaning). If substantial knowledge of many words in free reading is gained over the course of time, these incidental encounters could account for the significant growth in vocabulary seen in elementary or junior high school students.

In Nagy, Herman, and Anderson's study, 57 eighth grade students of average and above average reading ability were randomly given either a narrative or expository text of about 1,000 words to read. Fifteen vocabulary words from each text were identified as the most difficult. These target words were either

single or compound words. Prior to reading the passages, students were given some general instructions by a researcher. The researcher read aloud the directions preceding the text. In order to ensure natural conditions, no mention of vocabulary was made. Students were told that they would have ten minutes to read the passages, could reread as much as they wanted during that time, and that questions about the passage would be asked later without their being able to see the text. Following the reading, students completed two vocabulary assessment exercises on the fifteen target words from both the passage that they read and the passage that they did not read. By also doing assessment exercises on the words for the passage not read, the students provided the researchers with a control for each passage. The assessment exercises consisted of an individual interview and a multiple-choice test. Following the reading, the individual interview was given. Students were quizzed on the extent to which they understood a word meaning, as the researchers wanted to assess partial word knowledge. If a clear answer was not given, interviewers used a set of prompts depending on what the student said. The prompts asked the following questions: 1) “That’s part of the meaning. Can you make it more clear?” 2) “That’s one meaning. Do you know another meaning for this word?” and 3) “Does this word remind you of anything?” (241). Raters scored the interviews by giving from zero to three points, using such criteria as no correct knowledge, minimal partial knowledge, substantial (but incomplete) knowledge, and a totally correct answer. A multiple choice test, which contained three levels of difficulty for the target word in each item, was given last. The researchers explained that “levels of difficulty” were based on “the similarity between the target word and the concepts represented by the distractors” (239). “Distractors” referred to the items in the multiple-choice selection other than the correct answer. At the highest level of difficulty, the distractors “represented concepts that were similar to or closely associated with the meaning of the target word”(239). At the lowest level of difficulty, distractors “were chosen to be as dissimilar from the target word meaning as possible, even in terms of the implied part of speech” (239). The intermediate level of difficulty had distractors that “were chosen to be mostly in the same part of speech, but otherwise fairly diverse semantically” (239).

The results indicated that “at each level of difficulty, for both the interview and multiple choice test, a greater proportion of the target words from a given passage were known by subjects who had read that passage than by the subjects who had not” (243). The effect of the learning from context variable was small, but significant and consistent across all methods of assessment. The authors support this claim by noting that the texts used were natural and that, of the 30 words chosen for the study, 23 occurred only once in the texts. Earlier studies are criticized for repeatedly exposing students to the unfamiliar words in the text, thus diminishing the reliability of any conclusions suggesting that words are learned from context. Since the researchers in this study have avoided these faults, they conclude that their study is more accurate in truly demonstrating their hypothesis (even though the effect of the context was small). They conclude that, even though the effect is incremental and small, learning does occur from one or a few exposures to a word in context.

Of course, though in most respects the research seems reasonable, there are a few weaknesses in Nagy, Herman, and Anderson’s study. One possible problem with the study is that the researchers chose only average and above average readers. Perhaps the results would not have been as significant with a wider range of reading abilities. The researchers do cite another study which had results similar to theirs as evidence of the “generalizability” of their findings, but they do not indicate whether or not the subject and procedures of this other study were also the same. Also, the concentrated period of time in which all of the assessment tasks were given could lead to improved performance both in the interview and the multiple choice test. Short term memory, by nature of its definition, works best when tested immediately after reading. In spite of these problems, however, the results of the study do appear to be reliable, primarily because the researchers point out that the gains in word knowledge were small. No claims of large statistically reliable gains are made. The implications of this study, however, are that contextual instruction provides a means for students to at least gain a partial knowledge of word meaning for an extremely large number of words. While the efficiency of this process is difficult to measure, students are exposed to more words than would be possible through the use of vocabulary lists concentrating on a comparatively small number of words.

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As a result of Nagy, Herman, and Anderson’s study, another study that attempted to compensate for some of the flaws of previous research in context clues was conducted by Schatz and Baldwin in 1986. Schatz and Baldwin used three different experiments in their study “to determine the extent to which context helps students infer the meanings of unknown words” (439). Each experiment used a slightly different set of circumstances than the previous one, and served to re-check some of the procedures of the previous experiment.

In experiment 1, the sample consisted of 101 students in Grades 10 and 11. The materials consisted of two 25-item tests, one which used passages of words used in context. The other exercise used words in isolation (no context passage was given). Half of the students took the context test, and half took the words-in-isolation test. A low-frequency word from each passage was selected, the word was underlined, and five choices were given following the passage which indicated the word's meaning. The other 25-item test was simply a multiple-choice vocabulary test, using the same choices given at the end of the test with the passages, minus the passage and context. In terms of choosing the words, the passages were selected from 10 novels from the school's reading lists. Low-frequency words were defined as words "which appear four times or less in a million running words" (442). An example of a low-frequency word as used in both tests is as follows:

RUEFULLY
A) sorrowfully
B) thankfully
C) fearfully
D) casually
E) longingly

The results showed that there were no statistically significant differences between the scores on either test.

The sample in Experiment 2 consisted of 39 students in Grade 11 from a private school. The materials were similar to the ones used in Experiment 1, but the test passages and target words were chosen from four content areas. The researchers wanted to determine if different content areas had any effect on the value of context. The four content areas were literature (novels, as used in Experiment 1), popular reading (newspaper and magazines), history textbooks, and science textbooks. All 39 students were given the words-in-isolation test first, then all students took the words-in-context test. The words-in-context test was given over a period of two days in order to eliminate student fatigue. Again, no statistically significant difference was found between the scores on each test.

In Experiment 3, the sample consisted of 84 students in Grades 10 and 11 from another private school. The materials in Experiment 3 were identical to the materials in Experiment 1, except for the vocabulary test. Students were instructed to write out a brief definition for the low-frequency word rather than take a multiple choice test. The procedures were also the same, except that the answers were graded as right or wrong using a double blind procedure between two raters. The answer sheets for both the context and no-context tests were placed in folders marked A and B. The raters determined the accuracy of the definitions without knowing the scores assigned by the other, and the raters did not know which test they were scoring. The researchers were interested in "full denotative meanings" or "accurate synonyms" only, which allowed the raters to judge answers as right or wrong (446). Again, the results indicated that "there was no statistically significant difference between the means of the no-context group and the context group" (446). Schatz and Baldwin, by looking only for denotative meanings and synonyms, do not appear concerned with partial word knowledge, which Nagy, Herman, and Anderson were clearly looking for.

The researchers conclude the following: 1) "in general, context clues do not reveal the meanings of low-frequency words in naturally-occurring prose," 2) "context clues appear to be just as likely to result in confusion as in the correct identification of word meaning," and 3) "context clues work best when the target word is redundant with the rest of the context and contributes little new information to the passage" (451). Schatz and Baldwin do not dispute the idea that children can use context clues effectively when presented in contrived, context-rich passages. Instead, they argue that "the real issue is not whether or not children can use context clues, but whether or not difficult words in naturally occurring prose are usually amenable to such analysis" (447). Therefore, there would appear to be little point in conducting research on context clues if there usually aren't any context clues.
One possible problem with the study by Schatz and Baldwin is that their choices of words could be flawed. For example, just because the word "ruefully" is a low-frequency word does not mean that its other forms (rue, rueful) do not occur more regularly. Thus, the words may have been too easy, making it difficult to detect any real learning or statistical significance. Curiously, Schatz and Baldwin do not address this issue in their article.

The implications of this study are significant in that many research studies performed by persons of respect and authority are being disputed. Schatz and Baldwin acknowledge that Nagy, Herman, and Anderson "seem to have come the closest to approximating the normal reading situation when

investigating the issue of the effects of context on word meaning" (447-448). Perhaps Nagy, Herman, and Anderson made the mistake of subconsciously creating the circumstances for their studies to succeed. In terms of vocabulary instruction, it may be necessary to reexamine the role of context clues. Context clues may play an important role, but only as one facet of instruction. Repeated exposures to a word, combined with effective use of a dictionary, could be used in conjunction with context clues and, therefore, result in deeper understanding of word meaning.

Although the research by Nagy, Herman, and Anderson attempted to adjust for explicit instructions in the use of context clues, Buikema and Graves developed an instructional unit to increase students' ability to use context clues through reading. Buikema and Graves proposed that teaching students how to use context clues could allow them to know what to look for when encountering unknown words in the future.

Following Dulin's guidelines, the unit was introduced incidentally and informally. On day one, students were informed that they would be given instruction in how to use context clues to learn words. For motivation, Buikema introduced a riddle as an example of combining clues found in the text to solve a puzzle. An example given in the article uses the word purple:

"I am a color which symbolizes wealth. I am often seen on the robes of kings and queens. I am also seen on the petals of flowers which have African in their name. My name is included in the title of Prince's most famous movie. What word am I?" (451)

Students were encouraged to guess as to the proper word and to give reasons for their guesses, citing examples in the surrounding text. Students then constructed their own riddles, using the above example as a model. As the unit progressed, Buikema introduced made-up words which were given in a passage with many context clues. Students were given a worksheet in which they had to identify the made-up word, list the clues from which the meaning of the word could be inferred, and give a possible definition based on their findings. More difficult words were gradually given over a period of time, with Buikema carefully guiding students through the procedure of using context clues. Students reviewed, rehearsed, and demonstrated the strategy themselves through the use of an overhead projector towards the end of the unit. This type of active student participation in learning is important, and is an area that critics of contextual instruction have overlooked.

To evaluate the instructional unit, students were given four tests: 1) a 10-word multiple choice test using words from the instruction, 2) a short answer test using three words from a passage from Edgar Allen Poe's "The Black Cat," 3) a short answer test on two words in context-rich passages constructed by the authors, and 4) a 10-word, multiple choice test on difficult words from a passage constructed by other researchers (454). Two groups were given the exam: a context group and a control (no context) group. The context group, which received the instructional unit, significantly outperformed the control group on each exercise (most notably on the Poe passage). Based on the results which showed that students given the instructional unit performed better on all tests, Buikema and Graves conclude that their unit was a success. They outlined eight aspects that contributed to their success (aspects which should be applied to all contextual instruction to ensure success):

1) The instruction was planned with a goal in mind and how that goal would be carried out.
2) The instruction was concentrated (their unit was a week long).
3) The materials were prepared in advance: worksheets, overhead transparencies, and reading passages were used.
4) The instruction was closely monitored and guided by the teacher.
5) Instructions were explicitly given by the teacher; students knew what was expected of them.
6) Students worked in pairs to solve problems, demonstrating cooperative learning.
7) Students were instructed under the scaffolding principle defined by Wood, Bruner, and Ross in 1976. After modeling the exercises, responsibility was gradually given to the students to perform on their own.
8) As exemplified by using the exercise with riddles, motivational activities were included.

In addition, Buikema and Graves urge that this procedure be reviewed in order to reinforce the process with students. They seem to encourage direct instruction of context clues, which is in contradiction to what Dulin argued. In fact, Dulin went as far as to discourage using lessons or units on context clues, instead preferring to expose students incidentally through their regular reading. Dulin, in discouraging direct instruction, advised teachers to occasionally remind students to "ask yourself what word or meaning ought to make sense at this point" (440). Clearly, the role of the teacher is much less defined in Dulin's approach.

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Although the research has largely ignored the role of the dictionary in terms of vocabulary development, looking up words in the dictionary is often considered to be the last resort in determining word meaning. In the review of the literature portion of a 1995 study involving college students, Nist and Olejnik noted that there is little research in the area of vocabulary development in older students, and even less research on using the dictionary in general. Since students on the college level learn vocabulary primarily without direct instruction, Nist and Olejnik pose the following question: “If there has been little past research to suggest anything at all about using dictionary definitions as a way of improving vocabulary knowledge, where has the idea come from that looking words up in the dictionary is the worst way for students to learn vocabulary?” (172). Nist and Olejnik are particularly critical of the research results on context. Therefore, they designed a study to examine “the contextual and definitional factors that determine whether and to what extent college students learn unknown words without instruction” (173). They also note that previous research has not addressed how context and dictionary instructional methods may interact.

The sample for Nist and Olejnik’s study consisted of 186 college freshmen, divided into four randomly-assigned groups. Each group received a set of ten words with a combination of two of the following conditions: weak context, strong context, inadequate dictionary definitions, and adequate dictionary definitions. Group 1 received the words in weak context plus inadequate dictionary definitions, Group 2 received the words in weak context plus adequate dictionary definitions, Group 3 received the words in strong context accompanied by inadequate dictionary definitions, and Group 4 received the words in strong context plus adequate dictionary definitions. The objective was to answer two basic questions:

• Are there significant differences in subjects’ abilities to learn and remember new vocabulary words depending on strength of context and adequacy of dictionary definitions?

• Can significant differences in subjects’ abilities to learn and remember new vocabulary words as a function of context and dictionary definitions be replicated across four levels of word knowledge? (Nist and Olejnik 179)

In order to ensure that the test words would be unfamiliar to all students, nonsense words were constructed. However, the nonsense words were related in meaning and structure to real words. “For example, the real word aberration became jadration, which students, of course, were unfamiliar with” (179). The researchers did not create overly obvious differences in the strong and weak context examples, which they claim other studies have tended to do. “Weak context provided little or misleading information about the word, whereas strong context provided more implicit, but not necessarily explicit, clues” (180). The main difference between inadequate and adequate dictionary definitions was that more specific, less vague, language was used. Also, the adequate dictionary definitions contained a sentence which provided an example of the meaning of the word, without focusing on word usage. Students were allowed to study the words for 20 minutes prior to all four groups taking the same assessment test.

According to Nist and Olejnik, “one of the major strengths of this study is that [they] measured vocabulary knowledge in a variety of ways, reflecting different levels of knowing a word” (181). Four different tests were given for each word. The first was a multiple choice exercise in which students picked the meaning of the word, the second was a multiple choice exercise in which an example of the word was chosen, the third required the students to write a sentence using the word in context (and in which the meaning of the word could be clearly seen), and the fourth was a sentence completion exercise. One point was awarded for each correct answer on each test.

The researchers found that “there was no interaction between the levels of context and levels of definitions, indicating that the combination of strong context and adequate dictionary definitions together did not have a significantly greater effect on word knowledge than did the simple additive effects of context and dictionary” (187). The second major finding was that “for all four tests, those who had the adequate dictionary definition performed better than those who received the inadequate definition, indicating that the quality of the definition appears to determine the extent to which students are able to learn unknown words” (173). Nist and Olejnik also noted that context had only a minor effect on exercises measuring varying levels of word knowledge. Therefore, as long as adequate dictionary definitions were presented, the strength the context in which the word appeared was not significant.
As a result of the above findings, Nist and Olejnik have little confidence in the effectiveness of contextual instruction alone. The study by Schatz and Baldwin described earlier in this review is cited as evidence that context clues are ineffective even when students are taught to use them properly. Anderson and

Nagy's (written in 1992) assertion in "The Vocabulary Conundrum" that vocabulary is best learned through wide reading is also criticized, as the learning of low-frequency words is not explained. Research on context is criticized for providing examples that contain an unnaturally high frequency of context clues that would not be found in a natural setting (an issue addressed by Nagy, Herman, and Anderson). In other words, examples in studies are written to contain the necessary context clues for success. Students will not encounter context clues of this frequency. Nist and Olejnik also criticize researchers who have asserted that all vocabulary is learned from context, claiming that incorrect assumptions about word meaning could occur from weak context. Again, the idea is that college-level students are more likely to encounter weak contexts, leading to confusion in trying to infer word meaning from context alone.

Nist and Olejnik cite research that suggests learning words from dictionary definitions alone is not significantly inferior to contextual instruction. Students sometimes perform equally as well on quizzes by looking the words up as they do when given instruction in context clues. Do the students who use only context clues to determine word meaning really "know" the word, at least in the sense that Nagy, Herman, and Anderson define "knowing a word?" Nist and Olejnik argue that they do not, as often only one nuance of word meaning comes from a particular context. As far as problems associated with using the dictionary, the structure and language of dictionary definitions may be the problem for students when looking up words. McKeown has identified four categories of problems with dictionary definitions that could lead to misinterpretation of a word: weak differentiation, likely interpretation, vague language, and disjointed components (29). Weak differentiation "leads to categorization that is too broad," likely interpretation "includes words that are likely to lead students to the wrong interpretation of the word," vague language consists of "words that lack enough explaining power to develop a meaningful representation," and disjointed components are when "several pieces of information are presented," with no clues given as to how to integrate them (Nist and Olejnik 177). By taking these weaknesses into account, better dictionary definitions could be written.

Nist and Olejnik conclude that the strengths of combining contextual instruction and definitions have yet to be fully explored. They say, "Researchers have examined vocabulary learning from an either/or perspective, when in fact the more common situation is for students to encounter an unknown word in context and then look it up in the dictionary in an attempt to gain a deeper understanding" (Nist and Olejnik 178). Once again, a synthesis of two approaches appears to be superior to one of them alone, based upon Nist and Olejnik's research.

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Basis for the Present Study:
The researchers are in general agreement that word lists are not effective in vocabulary instruction. Wide reading, with no instruction in using context, is claimed to be the most far-reaching way to expose students to new words. However, proof for the correlation between wide reading and the learning of the meanings of new words is weak, at best. The difficulty in measuring the effectiveness of wide reading for learning vocabulary is the problem here -- we know it occurs (because children learn thousands of new words yearly), but at what rate? Instruction in using context is valuable, but, unfortunately, the methods of assessing the instruction are often biased towards proving this hypothesis, as contrived, context-rich passages are often used as materials. When these variables are controlled for, as in Schatz and Baldwin's study, no correlation between context and learning new words is found. However, Nagy, Herman, and Anderson did find at least a small correlation. Also, perhaps dictionary definitions are simply inadequate in terms of looking words up. If dictionary content could be restructured to be more "user friendly," students may gain more from looking words up.

A problem with the previous research is that, with the exception of the study by Nist and Olejnik, little attention has been paid to whether or not the words in the exercises were really unfamiliar to students in the samples. Perhaps the words need to be tested for this possibility prior to administering the exercises in a study.

Hypothesis:
The present study was conducted to add to the larger body of knowledge on the issue of teaching vocabulary words through context versus teaching them with dictionary definitions. One improvement over previous research was to attempt to ensure that the words used in the study were actually unfamiliar to students. Once the words were established as unfamiliar, passages of naturally-occurring context were used in the study. Also, actual dictionary definitions were used in order to replicate circumstances that students are likely to encounter in the future. Under these conditions, it was hypothesized that learning a new word from receiving the definition would be more successful than learning the word from context.

Methods for the Present Study

Subjects:
The present study was conducted at a small middle school in upstate New York during an eight week student teaching assignment. The sample consisted of one heterogeneously grouped eighth grade English class consisting of 24 students and four heterogeneously grouped seventh grade English classes consisting of 60 students. Ages ranged from 12 - 14. Special needs students were not included in the results of the study, although they were allowed to participate. The sample was divided as follows (each sample was given a different set of words): Sample A consisted of the 24 eighth grade students, Sample B consisted of two of the seventh grade classes (28 students), and Sample C consisted of the remaining two seventh grade classes (32 students).

Design:
In order to assess the value of studying words in context compared to studying only the word and a definition, two reading samples were composed. Each class participating in the study received either a sheet containing 10 vocabulary words in a short passage of context, or 10 vocabulary words and a short definition. The short passage of context consisted of two to three sentences, one of which contained the word being tested. The sheet with the word definitions was simply a numbered list of the ten words, followed by a concise, three to four word definition. The passages of context were actual passages taken from reading selections the students either had read or were going to read, allowing the study to relate to the students' classroom learning. The passages were not altered in any way, allowing for the words to appear in natural context. The following is an example of an item from the context exercise:

1. They even asked him to dinner. Once he asked some of them to dinner, and served a splendid repast, with silver, crystal, damask, roast goose, sparkling Andrades '639, and plum pudding with hard sauce; but he was so nervous all through the meal that it took the joy out of it, and besides, everybody was hungry again half an hour afterward.
The same words from the context passages were used in the list of ten words plus short definitions. The following is an example of an item from the definition exercise:
1. repast: a feast or meal.
*The definitions were taken from Webster's New World Dictionary.

Procedures:
To ensure that the words used in the exercise were unfamiliar to students, all sample groups were interviewed one day prior to receiving either the context or the definition exercise. Three separate lists, consisting of 40 words each, were compiled for each of the three testing groups in order to allow for a sufficient pool of potentially unknown words to be used in the study. Each word was read aloud to the groups as a whole, and students were asked to raise their hands if the word seemed familiar to them or if they knew the word meaning. For example, students were asked if they knew the meaning of the word "sagacity." By visually assessing students' reactions, the researcher concluded that the word was unknown if no hands were raised or no acknowledgement was expressed. However, there were a few cases where one or two students made very tentative gestures to suggest that they knew a word (usually by raising their hands). Based upon the obvious uncertainty of these responses, a word was not necessarily eliminated under these circumstances. A word may sound familiar to a student, who may then indicate that he or she "knows" the word, but the difficulty of the word for the grade level was taken into consideration when compiling the list of words for the study. Through this process, a list of presumably unknown words was formed. Again, the students had encountered, or would encounter, all of the words in the study through classroom reading.

Once the words had been selected, the exercises for the study were composed. All words for the context exercise were taken directly from reading passages and were unaltered. Sufficient context was reproduced to allow students to infer at least a nuance of the word meaning. In some cases, one or two sentences were provided both before and after the appearance of the word in order to provide students with adequate context clues. The definition of the word was not necessarily restated in an obvious manner, but enough information was given to provide an image or general idea. A concise, brief definition followed the words in the exercise which contained only the list of words. A test was then composed which contained all ten words to be used for that particular group in a multiple-choice format. Attention was paid to the alternate definitions in the multiple choice exercise, in order to prevent too much similarity between the definitions. While the results of the study may have been affected by including too many obviously incorrect definitions, no attempt was made to make the definitions overlap or to be too precise. If possible, where multiple word meanings existed, the meaning suggested by the context of the passage

contained in the context exercise was represented in the multiple choice test. Using the same word as in the examples of the two reading exercises, the following is an example of one of the multiple-choice items:

REPAST:
a) a feast or meal.
b) gold applied in a thin layer.
c) a pale complexion.
d) happening in the recent past.

On the second day of the study, students were asked for their participation in a research project. Inevitably, numerous questions were raised by the students as to the purpose of the study and whether or not they would be graded on the exercise. The researcher assured students that the purpose of the study would be explained to them after they had participated in it and that, although their careful attention was requested, no grade would be assigned. This process consumed approximately five minutes of each testing session. Half of the students were then given the context exercise and half were given the definition exercise to examine for ten minutes in class. After students examined the exercises, all papers were collected. Students were informed that there would be a follow-up exercise on the next day, and most appeared eager to cooperate with the requirements of the study. Special needs students, who were included in each class involved in the study, were allowed to participate in order to promote a sense of involvement. Since an aide often assists the special needs students, their test exercises were not included in the study, however.

On the third day, students were all given the same multiple-choice test. They were asked to record their names on the tests (just as they had been asked to record names on the reading samples) only so that their tests could be matched up with the reading samples they were given. This procedure eliminated the need for an elaborate system of coding each exercise. Students were given approximately ten minutes to choose the correct definition for the word given. Words were not presented in the same order, and the correct definition matched the definition given for the word on the definition-only exercise.

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Methods for Analysis:
Once all exercises had been collected, each was matched to the reading or definition sample given on the previous day. The tests were then graded by awarding one point for each correct answer. Means were then calculated for the context exercise and the definition exercise within each of the three groups.

Results:
The results of this study demonstrate that exposure to words in natural context is not as effective as exposure to words and their definitions.

As demonstrated in Table 1, the students who received the definition exercise performed better in each sample. Group A, which comprised the eighth grade students, showed the largest difference. Groups B and C showed approximately one half as much difference between the two exercises as Group A. Clearly, students retained more word knowledge from exposure to the definitions than any word understanding inferred from the context passages. However, if we could assume that random guessing could allow for 25% of the answers to be correct (since there were four possible answers on the multiple-choice test), students did gain some word knowledge from the context exercise. The means for the context exercise were all greater than 25%.

Analysis/Conclusions:
The lower degree of difference seen in the seventh grade students' performance could perhaps be attributed to less commitment or diligence in performance on the multiple choice test, as the eighth grade students appeared to approach the study more seriously. Another factor involved in this process is the effect of short-term memory. As only one day passed between exposure to the words and the multiple-choice exercise, short-term memory may have played a large factor in student recollection of word meaning from the definition-only exercise. Therefore, students can at least retain a definition over the short term, as evidenced by the mean scores in this study. Since the students who received the context exercise had to infer word meaning, as opposed to attempting to memorize a definition, they were clearly at a disadvantage when approaching the multiple-choice exercise. However, as the results showed more than 25% of correct answers on the context exercise, students do gain some understanding from context. As Nist and Olejnik suggest in analyzing their study, the students receiving the context exercise may have

gained some level of understanding of the unknown word by encountering it in natural context, but students could not formulate a definition based upon that single encounter. An easily understood dictionary definition elucidates nuances of word meaning that cannot be obtained from exposure to the word in context. If a student gains sufficient knowledge of a word from a dictionary definition, word understanding is reinforced to the extent that if parts of a known word are encountered in a new word in the future, more complete understanding will occur. The reinforcement provided by an adequate dictionary definition has a significant effect on “knowing” a word. As evidenced in this study, students may gain some understanding of word meaning by a single encounter in context. Indeed, most partial understanding of new words may occur in this manner. However, the interaction of the two processes is a more valid method of teaching vocabulary, as one method complements the other. Based upon the results of this study, students may need more instruction in how to use context clues. The passages of context used in this study contained fairly rich context clues. Clearly, students did not gain as much word knowledge as they could have. Explicit instruction in recognizing context clues would be beneficial. Students need varied and repetitive exposures to the words being taught, including using the new words in student-created contexts and determining new ways to use the new word.

REFERENCES

None available

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