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ABSTRACT

A study examined the training of students to use context clues more effectively. Subjects were five fifth and sixth grade remedial students identified as low verbal students. The subjects were met with individually for 9 sessions of approximately 30 minutes each, prior to or following the school day. Two sessions were devoted to testing and seven sessions to training. Between 6 and 12 training items were used in each session and a variety of context types, difficulty level, function in sentence, and clarity levels were presented. Training tasks consisted of five steps: read/paraphrase; query/discussion; identification/rationale; other possible word meanings; and inferences of meaning. Results indicated that all five students improved on every component--improvement ranged from impressive to dramatic. Qualitative analysis revealed three situations characteristic of students' initial approaches to context: limited use of the context; confounding the meaning of the target word with that of the entire context; and going beyond the limits of meaning set by the context to hypothesize a situation into which a meaning might fit. Findings suggest that four of the five students appeared to internalize the training task, as demonstrated by their ability to think aloud about their own reasoning and correct themselves when they realized their reasoning was faulty. The training task is a useful tool to help students develop a more productive process for dealing with contexts. A follow-up study conducted with 16 fifth grade students yielded similar results and reinforced earlier findings. (Contains 10 references and 4 tables of data.) (CR)

STUDY TO TRAIN ELEMENTARY STUDENTS TO BECOME MORE SENSITIVE TO CONTEXT CLUES

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Study to Train Remedial Elementary Students to Become More Sensitive to Context Clues

Purpose of the Study

The work that I am going to report today was targeted toward helping students use context clues more effectively. Although there is evidence indicating that children learn new words by reading them in natural context, research seems to suggest that students whose vocabulary is most in need of being increased are least likely to be able to get information from context. Furthermore, several studies confirm that deriving word meaning from context is a complex process and not necessarily automatic or efficient. This leads to the notion that teaching students how to use context to derive word meaning is quite important. In our study we developed a training task for helping students use context clues that employs teacher modeling of the process in all its complexities, followed by interactive practice.

Overview of the Study

Since the focus of our study was the training task, we included only five subjects in order to track growth over time and in depth. I met individually with students for nine sessions of approximately one-half hour each, prior to or following the school day. Two sessions were devoted to a pretest and a posttest and seven sessions to training. Between six and twelve training items were used in each session, based on the amount of time students' responses took. A variety of context types, difficulty level, function in sentence, and clarity level were presented in each training session.

Subjects

The subjects for this study were fifth and sixth grade remedial students from a suburban, parochial school. They were identified as remedial readers, based on scoring at least one and one-half grade levels below their grade placement on the Metropolitan Achievement Tests (1986), and receiving remedial instruction through Chapter I. In addition, the subjects were further identified as low verbal students from their scores on the vocabulary subtest of the Gates MacGinitie Reading Tests (1989). I read the test orally to nine students in order to eliminate decoding difficulties as the cause of their remedial designation. Five of the six students scoring the lowest on this screening device were used in the study, based on availability for training.

Materials

The training items consisted of unfamiliar words presented in contexts of one to three sentences taken from fifth and sixth grade basal stories. The target words were preselected by basal programs as vocabulary for specific stories in fifth and sixth grade basal readers and as such were assumed to be unfamiliar to fifth and sixth grade students. In addition, at least one training item was presented during each session that contained a pseudoword substituted for a word that would probably be a part of the student's vocabulary. This assured a training opportunity in which the student definitely did not know the word. The materials included one hundred three training items, a pretest, and a posttest.

The pretest and posttest each consisted of six items based on those used by McKeown (1985), which were designed to probe students' ability to identify useful

context. The pretest and posttest asked students to select or reject meaning choices for a pseudoword, justify those choices using context clues, and use additional context to narrow the meaning of the pseudoword.

Procedure

Now I am going to tell you about each step of a five-step training task that we developed. As each training item was presented either the student or I read it. This first step was read/paraphrase. For example: (Overhead 1-top)

> As for Rusty, he scowled at Mary before stamping out of the room. "And I'm not coming back either, see!"

Then the item was paraphrased by the student or by me. An example of a possible dialogue in this step is (Overhead 1-middle):

> Rusty does this *scowled* thing at Mary and then stamps out of the room. As he does this he says, "And I'm not coming back either, see!"

The second step, query/discussion, was to focus on finding clues to the meaning of the unfamiliar word. (overhead 1-bottom)

> Investigator: What is happening in these sentences?
>
> Student: Rusty is mad at Mary about something and he stamped out of the room.
>
> Investigator: Good, is there anything else?
>
> Student: Well, he yelled at her as he went out the door that he wasn't coming back.

Note that I questioned the student to guide his/her understanding of the sentences and to focus on context clues that would be helpful in generating possible meanings for the unfamiliar word.

Moving to Step 3, here the student was asked to provide an initial identification of the word and rationale for the decision. You will notice In an example of this step the student is able to generate a plausible meaning, *yelled,* with rationale that includes helpful context. (Overhead 2-top)

Investigator: What do you think scowled might mean?

Student: *Yelled*

Investigator: Why do you think it is *yelled?*

Student: Well, he is mad at her and then he yelled that he wasn't coming back.

If a student did not have a response at this point or failed to use context clues, I guided the student by reviewing the query/discussion step of the task, perhaps drawing attention to relevant context clues. Then the student was encouraged to provide an idea for the meaning, not necessarily an exact word. In this typical dialogue, notice that I return to the context and ask a specific question to guide the student in generating possible meanings. (Overhead 2-bottom)

Investigator: What do you think *scowled* means?

Student: (no response)

Investigator: Let's look at the sentence containing *scowled.*

"As for Rusty, he *scowled* at Mary before stamping

out of the room." When someone stamps out of a room, what do you think they are feeling?

Student: Mad or upset

Investigator: Right, so if Rust is mad or upset, what are some things he might do at Mary?

Student: *Yell or throw something*

Now the fourth step called placing constraints, was to help students examine more possibilities and refrain from the expectation that it is necessary or even possible to find one right meaning for every familiar word. This step might proceed something like the dialogue presented here (Overhead 3).

Investigator: Can you think of some other possible meanings?

Student: *Make faces at her*

Investigator: Why do you say make faces at her?

Student: If you are mad at someone, you might make a face at them before you stamp out of the room.

Investigator: Can you think of anything else scowled might mean?

Student: *Shake his fist*

Investigator: What made you say that?

Student: I shake my fist when I am mad at my sister.

Notice the student was able to generate two other possible meanings using the context and his/her prior knowledge.

The last or summary step was to pull all the information together about the unfamiliar word helping the student focus on what could be inferred about the word and what it might mean. In this example of how dialogue might proceed, the student is able to focus on the idea that *scowled* was an angry action Rusty was doing at Mary.

Investigator: What do we know about scowled?

Student: It is something Rusty did at Mary. He was mad because he stamped out of the room telling her that he wasn't coming back. It could be *yelled* or *shook his fist* or m*ade an angry face at her.*

Investigator: Any one of those might be possible meanings for *scowled* based on these sentences.

This is the type of dialogue that occurred in the training sessions with the five students.

Results

Now let me share with you some results of the study. We evaluated the effectiveness of the training using both quantitative data from the pretest and posttest measures and a qualitative analysis of the in-progress data as well as the pretest and posttest. Both quantitative and qualitative results demonstrated remarkable progress by each of the five students.

The quantitative analysis of the pretest and posttest revealed that all five students improved on every component with this improvement ranging from impressive to dramatic. For example, (Overhead 5) Brad improved by 13 percentage points in the selection/rejection component while JD improved by 58 percentage points on the same

component. On the justification of choices component (Overhead 6) improvement ranged from 13 (Charles) to 47 (JD) percentage points and on context discrimination (Overhead 7) the range of improvement was from 17 (Charles) to 47 (Lisa) percentage points. There was a tendency for those who scored the lowest on the pretest to make the most gains.

The qualitative analysis revealed three situations that were characteristic of students' initial approaches to context. The first was marked by limited use of the context. The student simply did not consider all aspects of the context that were needed to derive the meaning of a target word. All students at least occasionally exhibited this tendency. The training that the students received was successful in intervening in the tendency to limit contextual focus. An example that illustrates how the training addressed this issue comes from the third session with Sheila. I presented Sheila with this context that used *laked* as a pseudoword for *dragged*. (Overhead 8)

> Mr. Jones *laked* several scraps of lumber to the middle of
> the garage and leaned them against an old table.

Sheila seemed to understand the sentence as indicated in her explanation of the situation, as she began to try out some possible meanings.

> He's getting scraps of lumber and leaning them against
> the old table, it could be *put*.

I then asked Sheila what else it might mean, to which she replied, "*burned.*" Her rationale was that "you can burn wood." I suggested that Sheila use the rest of the sentence. Sheila then tried *burned* in the sentence and quickly realized her error.

Mr. Jones burned several scraps in the middle of the

garage--whoops, no!

Sheila was then able to generate *lay* and *push* as possible meanings for *laked.*

The two other situations characteristic of student responses were misuses of the context to derive meaning. In one of these, students confounded the meaning of the target word with that of the entire context. This way of dealing with context was prominent in the classic Werner and Kaplan (1952) study. They referred to it as "sentence-core concept." An example might be using the sentence (Overhead 9-top): "Frank felt *giddy* as he walked along with all the change in his pocket," to hypothesize that *giddy* meant "feeling like you have a lot of change in your pocket." Three of the students, JD, Lisa, and Charles exhibited this tendency in early training sessions. All three appeared to eliminate this problem as there were no instances of this difficulty in the last few sessions or on the posttest.

The other misuse of context involved going beyond the limits of meaning set by the context in order to hypothesize a situation or "scenario" into which a meaning might fit. As such, students more or less free associated between the context and meaning possibilities for the word rather than considering the appropriateness of a meaning to its use in the context. This tendency was noted in McKeown's (1985) study of context use, especially in lower ability students. Four of the five students--Lisa, Sheila, JD, and Charles--exhibited the tendency to build scenarios to evaluate word meaning and for Lisa and Sheila, it was the characteristic way of dealing with context. The tendency virtually disappeared for everyone but Lisa, and the frequency of use declined

dramatically even for her, the most tenacious scenario builder. An example of scenario building comes from Lisa's response on the pretest to *sell* as a meaning for the pseudoword *steen* in the sentence, "Because I love corn on the cob, I would like to *steen* some." (Overhead 9-bottom)

> Lisa: Yes, [it could be *sell]* because if you make some money, you could grow some corn and sell it.

An example that illustrates how well students were able to put things together in training comes from Lisa's final training session. Lisa was presented with this context for *conscientious:* (Overhead 10-top)

> She wouldn't have forgotten. Sister Frances isn't like that. She's very *conscientious;* in fact, she says so herself and expects all of us to be too.

First Lisa began to think through the context, suggesting that "Sister Frances, forgotten, and expects all of us to be" were clues to the meaning of *conscientious*. Lisa then went on to explore what these clues might yield as a meaning for the word. As she did so, she was able to discern the most meaningful aspect of the context--that *conscientious* is a quality that Sister Frances has and expects others to have--and keep her focus on it as she generated possible meanings. (Overhead 10-bottom)

> *Conscientious* could be *nice* because she said so herself and expects everyone to be like that. Or *caring* because it is how she wants everyone else to be. *Friendly*, because she is telling everybody that she is like that and she wants everybody to be

like, that's how they'd like to be treated back. *Conscientious* is how she, the way she told people to act.

It seems the training helped students to stick with the context in trying to generate and evaluate possible meanings. It was apparent in later training sessions and in the posttest that students were able to remain focused and explore the context for clues rather than jump beyond the context to a scenario, or overstep the bounds of the word meaning to incorporate the entire sentence. The students also became more able to explore the full range of the context presented rather than limiting their focus to a single aspect.

Major Findings

A comparison of students in this study with those in McKeown's (1985) study is one way of assessing the effectiveness of the training. All five students in this study were comparable with McKeown's low verbal students in terms of percentage of correct responses and the kinds of errors made on the pretest. (Overhead 11) Following training, four of the five students were similar to the high ability students in McKeown in terms of percentage of correct responses on the posttest.

An additional way to look at the effectiveness of the training is in terms of students' reaction to the training. Four of the five students appeared to internalize the training task, as demonstrated by their ability to think aloud about their own reasoning and self-correct when they realized their reasoning was faulty. It seems that the training task is a useful tool to help students develop a more productive process for dealing with contexts.

Follow-up Pilot Study

A follow-up study was conducted during the winter of 1995 in a language arts classroom setting. The subjects for this pilot study were sixteen fifth grade students in a classroom designated as inclusion. However, each student in the class scored at or below the 35th percentile in language arts on the Iowa Test of Basic Skills so this designation appears to be inappropriate. Four of these students are diagnosed with specific learning disabilities, one is labeled as obsessive compulsive, and two are labeled with multi-factor handicaps. The classroom teacher is certified in elementary and special education. Another special education teacher collaborated with her during the language arts block.

The same pre and post test materials were used in this context clue pilot study as were used for the individual training study. In addition, the Gates MacGinitie (1989) vocabulary test was administered orally, form K before training and form L following the training. Training items for this study were selected from a trade book that was being used for language arts during the time of the training, There is a Boy in the Girl's Bathroom by Louis Sachar. The target words were selected by the classroom teacher as words she felt most of her students would not know. I reviewed choices to verify that a variety of context types, difficulty levels, function in sentence, and clarity level were included. Training sessions occurred three times a week over a four week period for a total of ten training sessions. This number was selected as adequate since it appeared most of the students were able to use the context clue procedure independently at that time.

Prior to the beginning of the study, the classroom teacher was trained by the researcher in the five-step context clue procedure. She modeled it completely for the students with one training item on the first day of the training sessions and then guided practice in the procedure with three more items. The teacher continued to guide the practice in whole group sessions for three more days. On the fourth day of training she guided practice for one training item and then the students practiced the strategy in pairs using target items pre-selected by the teacher. The student pairs were assigned by the classroom teacher in an attempt to match a student who was more confident in his/her use of the strategy with one who appeared not to be as confident. The special education teacher, the classroom teacher, and the researcher moved about the classroom monitoring and guiding the partner practice. After each set of partners had time to practice the strategy and determine some possible meanings for the target words, the teacher led a discussion in which some partners shared their answers with the whole class along with the rationale for the meanings chosen.

On the seventh day of training students practiced the strategy in partners without any whole group guided practice. The teacher began the session with a discussion of the text read on the previous day, then she assigned target words and partners. Following the partner practice of the strategy, ideas were shared with the whole class as before. This type of partner practice continued through the tenth session.

The post test was administered individually over three days following the training. Change from pre to post test were compared using a paired t-test and found to be significant at the $p<.01$ in the three areas measured by the pre and post tests:

selection/rejection of possible meanings; justification of those meanings; use of additional context to discriminate among meaning choices. The vocabulary subtest of Gates MacGinitie change was significant at the

level. Table 4 indicates the changes from pre to post test.

These findings are particularly powerful when one considers that there were few students in this classroom to provide models for their partners in the use of the context clue strategy. Future research should include a comparison between this strategy and traditional instruction in the use of context clues in a heterogeneous classroom.

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Table 1

Percentage of Correct Responses

Selection/Rejection of Choices

Student	Pretest	Posttest
Lisa	47	72
JD	39	97
Sheila	53	92
Brad	81	94
Charles	64	89

Table 2

Percentage of Correct Responses

Justification of Choices

Student	Pretest	Posttest
Lisa	36	53
JD	29	76
Sheila	42	86
Brad	63	86
Charles	56	69

Table 3

Percentage of Correct Responses

Context Discrimination

Student	Pretest	Posttest
Lisa	6	53
JD	36	72
Sheila	39	67
Brad	58	78
Charles	8	25

Table 4

PAIRED T-TEST

MTB > ttest of the differences in c10-c13

TEST OF MU = 0.000 VS MU N.E. 0.000

	N	MEAN	STDEV	SE MEAN	T	P VALUE
just	16	12.500	10.589	2.647	4.72	0.0000
condis	16	4.062	3.568	0.892	4.55	0.0000
sel/rej	16	5.000	6.088	1.522	3.29	0.0050
Gates	16	2.063	2.863	0.716	2.88	0.011

MTB > tinterval 99% confidence using the differences in c10 c11 c12 c13

	N	MEAN	STDEV	SE MEAN	99.0 PERCENT C.I.
just	16	12.50	10.59	2.65	(4.70, 20.30)
condis	16	4.062	3.568	0.892	(1.434, 6.691)
sel/rej	16	5.00	6.09	1.52	(0.51, 9.49)
Gates	16	2.063	2.863	0.716	(-0.047, 4.172)