



CARRReader

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CALL FOR MANUSCRIPTS

We invite all those interested in literacy research to submit articles for publication. We request scholarly articles that are of interest to researchers and teachers, as well as practical articles grounded in theory and research. We invite a wide range of submissions focusing on critical issues, research, and/or instructional strategies as they relate to literacy issues both on the national level and in the state of Connecticut. *CARReader* is a juried publication that is published once a year in the fall. Inquiries and submissions should be directed to the *CARReader*, Jesse Turner, Department of Reading and Language Arts, School of Education and Professional Studies, Central Connecticut State University, 1615 Stanley Street, New Britain, CT 06050 or sending an email to TurnerJ@ccsu.edu.

GUIDELINES FOR PUBLICATION

Publications are limited to 2800 words or less and must include a title, author, statement of purpose, review of the literature, methodology, summary of findings, discussion and/or recommendations, conclusions, and references. Manuscripts should be typed double-spaced with ample margins for reviewer comments. All manuscripts should be formatted using APA 4th edition. The author needs to submit both a hardcopy manuscript and a diskette copy (or e-mail version) compatible with Microsoft Word 2000. To be considered for the Fall 2005 volume, the manuscript must be submitted for review before June 30, 2005.

CARREADER EDITOR SEARCH

The *CARReader* is searching for those interested in serving on the *CARReader* editorial board for 2005-06. If you are interested, please send inquiries to Patricia Mulcahy-Ernt, CARR President, at mulcahyp@bridgeport.edu by March 1, 2005.

Message from the President

Patricia Mulcahy-Ernt

What contributes to effective literacy instruction and successful learning in all classrooms, if we consider age, grade, ability, and learning styles? How do we as literacy educators address the learning needs of students from diverse cultural, social, economic, linguistic, and geographic backgrounds? How do we improve the literacy performance of all students in Connecticut? How do we address the literacy challenges in Connecticut schools and homes? The answers to these questions are multifaceted and complex, requiring much thought and good research.

In this era when educators, parents, and politicians are looking for data from well-designed and carefully conducted research studies, the need for good research about effective literacy practices is great. It is important to inform our literacy policies and practices with the results from research, and correspondingly, ask research questions significant to literacy practice and central to the lives of students in our classrooms.

We know from reading the results of national and state assessments that the call for good research is great. While national assessments, such as *The Nation's Report Card* (2003), reveal encouraging gains for some groups in student literacy performance, there is still an achievement gap among students in different groups. How can we as educators provide the critical resources, technologies, and contexts for helping all students learn and become productive citizens? Additionally, how can we as educators improve not just the reading and writing performance of all our students but also facilitate their intrinsic motivation and love of learning to enjoy reading across their lifespan?

We know from reading the literature in our field that we have many choices of research methodology, including experimental research, correlational studies, ethnographic approaches, and descriptive research. While each of these approaches has its own strengths and limitations, each provides a way to gain data and insights about effective literacy instruction. Each of these approaches offers different ways of collecting data that can provide rich data and fresh perspectives that are needed to understand the complexity of literacy learning among students in different contexts.

The goals and activities of the Connecticut Association for Reading Research show a focused effort in supporting and conducting good research. Through our scholarship program we support novice researchers in their work. (In this publication of the CARR Reader, you will read summaries of the research from the 2003 scholarship recipients, Carol Tempest and Adrienne Chasteen Snow.)

Through our mini-grant program we support applied research in the field.

Through our fall and spring invited speaker programs we feature researchers of international renown. Last spring we heard Dr. S. Jay Samuels describe his work on building fluency. This fall we heard Dr. MaryEllen Vogt, the current President of the International Reading Association, and learned about her research with reading specialists. Our upcoming spring program will feature Dr. Lesley Morrow, the Past President of the International Reading Association; Dr. Morrow is noted for her work about emergent literacy and the instructional practices that promote literacy development in elementary level classrooms.

As a literacy educator in Connecticut, I invite you to ask the critical questions significant for good research and central to good instruction. The CARR goals of research, professional development, advocacy, partnerships, and global literacy development speak to the need for good research in literacy and the importance of continuing lifelong learning in our profession.

As a literacy educator, you have many rich resources available to you; I encourage you to use them in your professional work and your continuing professional development. Hopefully, this publication will spark your research ideas; if you wish to apply for one of the CARR scholarships or grants, you are invited to do so.

Finally, I invite you to be active in the realization of all the CARR goals. As a result, I hope that through your involvement in the activities in the Connecticut Association for Reading Research you will enjoy an active and rewarding professional life.

Reference

National Assessment Governing Board. (2003).

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CARR Research Report

Twenty-First Century Challenges for Reading/Language Arts Specialists in Connecticut

Jean Klein and Lois Lanning
CARR Research Committee Co-Chairs

Editor's note: This article is a summary of their research for which a full report is available. (See page 16.)

The twenty-first century, once looked upon as the information age, has become the accountability age. This study was designed to find out what responsibilities reading specialists currently have, challenges of the role, and what new roles will be demanded of reading specialists as a result of increased mandates. Clearly for this century the role must be multi-tasked and a position of leadership if the achievement gap is to be diminished or, even better, eliminated entirely.

This study analyzed data derived from a questionnaire of reading professionals working in the field, interview questions for university professors who prepare reading specialists, and a random survey of principals. The triangulation of data led to common themes and to the "Recommendations in Brief" (which are listed on page 5 and 6). The recommendations are broad-ranging and are highlighted below for reading specialists, administrators, universities, and policymakers. In sum, all stakeholders need to change if they are to be effective.

Statement of Purpose

The purposes of the study were four-fold:

- To determine the effects of the No Child Left Behind Act (NCLB) on the role of reading/language arts specialists in Connecticut;
- To update the Connecticut Association for Reading Research 1997 study of reading/language arts programs and personnel;
- To determine the certification and responsibilities of Connecticut's reading/language arts teachers and consultants; and
- To identify the challenges of these roles.

Methodology

The study was conducted in three phases:

Phase I, Reading Specialists. A four-page questionnaire was mailed to 1648 Connecticut reading professionals with either the 102 certification as a remedial reading/language

arts teacher or the 097 certification as a reading/language arts consultant. Multiple-choice and open-ended questions focused on job responsibilities. A response rate of 36% yielded much data across all grade levels and Education Reference Groups (ERGs).

Phase II, Universities. A survey was mailed to reading/language arts department heads in the five Connecticut universities that have accredited programs for the 102 and 097 endorsements. Questions on this survey focused on determining whether the university perspective of issues faced by reading specialists supports the issues identified by the teacher/consultant survey, with particular regard to preparation for their roles. The response rate was 100%.

Phase III, Administrators. Interviews were conducted with 150 randomly selected principals across all levels (elementary, middle, and high schools) from all ERGs. Due to time constraints, phone interviews were abandoned and interview questions were then mailed, yielding a 19% response rate. Responses gave us a cross-check with the teacher/consultant responses in how administrators structure and support reading specialist positions.

Discussion of Findings

Reading Specialists

Reading specialists are spending the majority of their time, even if they are certified consultants, with intervention and remediation of students instead of guiding reading/language arts classroom instruction as well as the program as a whole. **The consultant's role must go far beyond coaching and modeling.** The role should be a shared leadership position, with the consultant forming a literacy team to develop support for, and guidance of, literacy efforts in the school.

CARR recommends at least one consultant to every school. Staff development is a priority in schools; thus the consultant must be an ongoing resource to teachers in addition to providing professional development for all staff.

Literacy is everyone's responsibility. Beyond the school, the consultant must reach out into the community to seek understanding and support of the literacy program.

Financial support for special projects needs to be sought in budget-crunching times, and consultants must have input into the budget process if they are to be effective.

Establishing relationships with preschool facilities is another way consultants can build community understanding of literacy needs prior to entering public schools and after. Clear job descriptions are needed for the multi-task role.

Administrators

Administrators need to become more knowledgeable about reading process and what good

instruction looks like. Many administrators have not had coursework in reading prior to becoming a principal. In their observations of classroom instruction, they need to know what practices are best and why. Principals are the evaluators of the effectiveness of classroom teachers, and while they may rely to some extent on their consultant's knowledge of best practices, they need to be supportive of those practices when observing.

CARR's findings indicate that many principals do not know the difference between the present two reading specialist certifications (102 remedial reading and language arts teachers 1-12, and 097 reading and language arts consultant K-12). Consequently, remedial teachers are being asked to take on a leadership role they are not trained to do, while consultants who are trained for leadership are spending the majority of their time remediating students. Principals report difficulty in finding certified individuals to take on the role of leadership. Teachers with reading specialist certification are remaining in the classroom for a variety of reasons: job security, extra responsibilities without extra compensation, role demands that are not supported by administration. Beyond a salary differential, the organizational conditions that promote success are the most important incentive for certified individuals to take on the multi-tasked role of a specialist. Principals can effect needed changes through evaluating classroom instruction, participating in staff development meetings held by the consultant, setting goals with teachers, promoting teamwork, and providing release time for professional development. Central office administrators have a role as well in promoting collaboration among staff and the public in a shared vision of literacy development.

Universities

CARR recommends only one certification for a reading specialist, i.e., the 097 reading/language arts consultant. Preparation must expand on the leadership role and particularly the "people" aspects of this position. As consultants meet with resistance to needed changes, they need to know ways in which they may be effective in bringing all participants to the table. The consultant endorsement should be obtained at the Master's level but with credits beyond the usual requirements. Pre-service training for classroom teachers must be strengthened at the Bachelor's level. At the Master's level individuals who wish to remain in the classroom should have appropriate coursework rather than the specialist endorsement. Potential administrators must have coursework in reading, and, particularly how to use their consultants effectively. Further, more consistency is needed across state universities in consultant coursework, so that credits from one university to another are honored.

Polymakers

If literacy is to become a reality for all

students, strong collaboration among all stakeholders is necessary. School districts, universities, and the Connecticut State Department of Education (CSDE) share that goal. CSDE needs to be a leader in this endeavor, as they have been. But much more needs to be done. Regulations in the near future should allow only one endorsement for a reading/language arts consultant, whatever title is finally agreed upon. Job descriptions should reflect the certification necessary for the position. "Literacy coaches" should be required to have advanced literacy training and proper certification if literacy efforts are to be successful. In-depth coursework is needed for such a role. Moreover, CSDE can take a leadership role in providing professional development for administrators in the field who lack a knowledge base in reading process and in maximizing the usefulness of their consultants.

Recommendations in Brief

The findings indicate the following recommendations for reading professionals in their specific roles.

Consultants

- Consultants should have an active role in developing the reading/language arts budget and in analyzing school and districtwide assessments, including high stakes testing results.
- Consultants should spend no more than one-third of their time in direct instruction of students and the other two-thirds developing the school and districtwide literacy program, working with classroom teachers and others.
- Staff development should be a major part of the consultant's role as a leader in ensuring best practices in literacy.
- The consultant should develop a literacy team in the school to assist with the development and implementation of the reading/language arts program.
- The literacy team should reach out into the community for support of the reading/language arts program as well as to work directly with families for understanding of the process of reading and its integration with language arts.
- A job description is essential for the consultant role in order that responsibilities are clear to all concerned, including classroom teachers. The job description should include reference to the certification requirements for the job.
- Guidelines should be developed for working with other specialists in the school and for conflict resolution.
- Consultants need release time to be able to attend conferences and workshops to upgrade their own skills as well as to provide background knowledge for professional development in their districts.

- To serve the reading and language arts needs of students effectively, the recommendation is for one consultant per 500 students at the elementary level, one consultant per 600 students at the middle school level, and one consultant per 800 students at the high school level, with collaboration between them to plan a well-articulated reading/language arts program.

Administrators

- Administrators need to deepen their understanding of the distinctions between the qualifications of teachers who hold a Connecticut certification with a 102 endorsement (remedial reading/language arts teacher) and a 097 endorsement (reading/language arts consultant).
- Administrators need to support the multiple responsibilities of reading/language arts consultants and provide the organizational conditions necessary for reading/language arts consultants to function effectively, including workload, time, and scheduling.
- Administrators need to find ways to provide more effective incentives to attract reading/language arts consultants and to retain them.
- Administrators need to become more knowledgeable about what good reading instruction looks like.

Policymakers

- Universities value their uniqueness, yet more consistency is needed in designing reading/language arts consultant program coursework of the highest standards so that consultants meet the essential competencies for the twenty-first century.
- University programs should place more emphasis on preparing reading/language consultants for the leadership roles they are expected to assume.
- University programs for potential administrators should include a course in reading and language arts that will develop their understanding of the process by which literacy is acquired and to learn how to use their consultants effectively.
- Personnel from the universities that offer a reading certification program need to work closely with state reading organizations, school leaders, and the State Department of Education to address reading/language arts consultant shortages.
- State policymakers need to exert strong leadership in the area of literacy.

Regulations

- New regulations should provide for one reading/language arts specialist endorsement; i.e., the reading/language arts consultant endorsement.
- This consultant endorsement should be given with significant graduate study beyond the Master's

Degree, with competencies developed jointly by the universities and the State Department of Education.

- New regulations should also remove the obstacle of ten months as a remedial teacher prior to becoming a consultant, since clinical experience already meets this requirement.
- As part of a Master's Degree program, graduate study in reading and language arts should be developed for classroom teachers who want more training in reading but who do not want to become reading/language arts consultants.
- At the Bachelor's Degree level, better alignment is needed between the pre-service university program in reading and language arts and the expectations for beginning classroom teachers.
- Regulations should mandate professional development in reading and language arts as part of the renewal of requirements for administrative certification.

Conclusion

The full report is intended to be read by all constituents in the hope that further productive dialogue may ensue in the interests of all concerned. No one group can improve literacy on its own. Our students deserve no less than our best efforts to help them succeed.

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CARR Wirth-Santoro Scholarship Research Report

Writing to Learn: The Effects of Summary Writing and Learning Log Strategies on Achievement in and Attitude Toward Biology Among Ninth Grade Students

Carol Tempest

The purpose of this study was to determine the effects selected writing-to-learn approaches would have on secondary high school students' achievement in and attitudes toward biology. Previous studies have found that writing to learn has significantly enhanced student knowledge in content areas (Daniels, 1989; Dyer, 1988; Johnson, 1991; McGinley & Tierney, 1989; Newell, 1986; Sharp, 1987; Tierney & Soter, 1989; Willey, 1988).

Background of the Study

Researchers suggest that summarization activity is beneficial for comprehension and retention of information (Irwin, 1991; Kintch & VanDijk, 1978). Furthermore, Meyer (1980) demonstrated that students who used textual structure to organize summaries recalled more than those who did not.

It has been suggested that readers who elaborate recall more than those who do not (Irwin, 1991; Reder, 1980). With learning logs students elaborate on text. Maintaining a learning log can increase writing fluency, stimulate cognitive growth, and reinforce learning (Atwell, 1990; Calkins, 1986; Jacobson, 1987; Vacca & Vacca, 1989).

Some researchers claim that student attitude is significantly correlated to achievement (Hayes, 1984; Khan & Weiss, 1973; Punch, 1989). However, there is no substantial body of empirical research that supports the assumption that a favorable attitude toward science by ninth grade students contributes to learning, nor has previous research demonstrated that the combined effects of a traditional instructional program and summary writing or learning log strategies are more effective than traditional instruction alone in teaching biology to ninth grade students.

Statement of Purpose

This study was designed to address the following

research questions:

1. Is there a significant difference among the teaching methods (traditional, traditional with a learning log component, traditional with a summary writing component) with respect to science achievement after adjustment for initial differences in reading ability?
2. Is there a significant difference among the teaching methods (traditional, traditional with a learning log component, traditional with a summary writing component) with respect to attitude toward science after adjustment for initial differences in attitude?
3. Is there a significant difference among the teaching methods (traditional, traditional with a learning log component, traditional with a summary writing component) with respect to long-term retention of content information in biology after adjustment for initial differences in achievement?

Methodology

To answer these questions, the following procedures were followed.

A teacher and 57 subjects were selected to participate in the study. Permission from administrators was granted for the use of both the teacher and subjects for the six-week period. The purpose and procedures of the experiment were explained to the administrators.

The investigator met with the participating teacher to explain the rationale, treatment procedures, test measures, and the amount of time required to complete the study. The investigator also provided training for the classroom teacher, along with materials needed to conduct the study.

The investigator administered the Degrees of Reading Power test prior to the six-week unit. The classroom teacher provided three lessons to each experimental group to clarify writing strategies to be used. He also administered the *Attitudes Toward Science* instrument as a pretest measure of attitude toward science.

Each group included in the study met for one 45 minute period per day, five days per week, for biology instruction with the same teacher. The unit of study required six weeks of instructional time. During this time the learning log group was assigned entries as homework, to be written following the completion of each reading assignment in the unit. The summary writing group wrote summaries of text material as homework, following the completion of each reading assignment. Reading assignments were given three times per week. The traditional group wrote answers to factual, literal-level, end-of-chapter questions as homework on three separate occasions during the six-week period.

Following the six-week unit, the investigator administered the *Attitudes Toward Science* instrument to each student as a post-test measure of attitude change. The classroom teacher administered the post-test measure of

achievement, "Muscles, Bones, and Blood" unit test to each student. Six months following the unit of study the classroom teacher administered the retention measure of achievement, "Muscles, Bones, and Blood" unit test to 27 of the subjects.

All data were analyzed statistically by analysis of covariance. An informal analysis of student written performance was undertaken by the investigator and conclusions were developed based upon the results of the data analysis.

Hypothesis 1 Results

Hypothesis 1 dealt with the differences between different teaching methods with respect to academic achievement. More specifically, the groups consisted of one control group involved in traditional instruction, and two experimental groups engaged in specific writing-to-learn activities.

The ANCOVA (analysis of covariance) resulted in a significant difference between the three levels of the independent variable. Therefore, it was possible to reject the first null hypothesis at the .05 level.

The differences were then statistically analyzed using the Tukey post hoc test. An examination of the results revealed that the adjusted means for achievement for the learning log group (Group 1) were significantly greater than the adjusted means for the summary writing group (Group 3). The adjusted means for the learning log group (Group 1) and for the summary writing group (Group 3) did not differ significantly from the adjusted means for the traditional group (Group 2).

Summary Writing Group Test Results

These findings suggest that the application of learning log and summary writing strategies does not lead to an increase in knowledge of biology on multiple-choice examinations based upon the objectives of a single unit of study. Summary writing was intended to provide students with a method to increase their ability to retain information from their reading. This strategy enables students to use the top-level structure of expository text. Summarizing allows readers to continuously synthesize and reduce the amount of information stored in short-term memory for the purpose of interpreting incoming text. This ongoing process of summarizing, called macroprocessing, is considered valuable to comprehension (Irwin, 1991; Kintch & VanDijk, 1978). It is also viewed as a means of connecting central ideas of a text, thereby making these ideas more accessible to recall.

In this study students who engaged in summary writing did not demonstrate greater ability to recall content material, as evidenced on the achievement test, than those students who did not write summaries. Several factors may have been responsible for these results. Students may not have improved because of the novelty of the strategy. Though the teacher provided guidance and training, the

task of summarizing text material is difficult. Summarizers have different concepts of the task, different levels of summarizing skill, and different levels of content knowledge relative to the text to be summarized (Hare, 1992).

Also, some students have little regard for the value of summarizing, or do not see how this strategy can influence their academic performance. Therefore, many students will attempt to complete the task of writing a summary as quickly as possible. Brown and Day (1983) found that many subjects in their study deleted low-level information provided by the author and then merely copied text into their summaries (Hare, 1992). The availability of the text to the student makes this copying behavior more apparent. Hare (1992) also believes that the purpose for summarizing seems to significantly affect the summarizing enterprise. When the purpose is understood, students are apt to produce better summaries. In the present study, even though the methods and procedures for summarizing were detailed by the teacher, he may not have clearly explained the purpose of summarizing to the subjects.

Another issue relative to success in summarizing is text familiarity. Researchers have determined that narrative text is more comprehensible and easier to summarize than expository text (Hare, 1992). Science text may be even more difficult to summarize than expository text from other disciplines. For example, Daniels (1989) conducted a study in which students summarized social studies text. The study revealed that the students who summarized performed significantly better on an achievement measure than those who did not. Social studies text is generally more similar to narrative material than science text. Thus, in Daniel's study, this factor may have given students greater ease in summarizing and perhaps contributed to the success of the summary writing groups.

There are other difficulties relative to summarization of expository text. Students find it difficult to summarize completely novel text-content because all ideas seem equally important (Hare, 1992). Although the students involved in the present investigation had been using the biology text previously, the topics in the unit of study were new to them. This may have had an effect on their ability to summarize the material successfully. Indeed, it may be that summarizing is only effective as a combined reading and writing process, as Taylor (1986) discovered in his study. According to Hare (1992), selection and condensation of information occur recursively from the moment of encoding a text, to the completion of a written summary. Students involved in the present study had little training in the process of summarizing, and may not have been involved in on-line summarization and summarizing while reading. In this case, the difficulty of the task of summary writing may have been further compounded. Again, this possible limitation may have resulted from the teacher's lack of

experience in teaching writing, along with his omission of instruction to students regarding the usefulness of the strategies. Further difficulty may have resulted from students focusing their attention on the process of summarizing rather than on the content of the material being summarized.

Finally, because the act of summarizing is a complex one, with many factors influencing success, it may be necessary to engage in the process for a longer period of time in order to gain mastery. The relative brevity of the "Muscles, Bones, and Blood" unit may have hindered student ability to produce quality summaries that would allow them to reap the benefits of enhanced recall ability as a result.

Learning Log Group Test Results

The other writing to learn strategy, learning logs, was intended to provide students with a means for elaborating text material. Irwin (1991) and Reder (1980) state that elaboration of text content facilitates recall and makes information more useful to students. According to Weinstein (1989) use of elaboration strategies improves future recall and helps students to store new information with related knowledge. Many of the proponents of writing to learn believe that it is this facet, the ability to personalize the material being learned, which enhances academic achievement (Fulwiler & Young, 1982; Mayer & Lester, 1983; Mitchell, 1989). Many professionals believe that the act of combining text information in various ways is another aspect of writing which is beneficial to students learning new content (Giroux, 1979; Kurfiss, 1985; Nostrand, 1979). Learning logs provided the students in the present study with the opportunity to engage in this personalizing and manipulative activity with respect to their text reading. The researcher therefore anticipated that students who wrote elaborative learning log entries would recall more of the information from the text than those who did not.

This belief however did not hold true in the present investigation. The learning log group was unable to attain significantly higher scores than the traditional group on the test of achievement. Several factors may have been responsible for these results. Students' unfamiliarity with the learning log strategy may have contributed to a lack of improvement. The researcher found evidence of improvement in learning log entries as the study progressed. Students chose most often to respond to prompt five, "This reading was important because...", when elaborating on text material in their learning logs. However further analysis of student selection of particular prompts, indicated that prompt selection did not reflect differences in scores on the achievement measure.

With respect to the writing strategies themselves, the learning log group did significantly better than the summary writers. This finding suggests that perhaps

learning logs are more beneficial to students than summary writing. Two explanations can be offered for this outcome. First, summarizing text is more difficult than elaborating on the material. Second, elaboration is a more personal writing activity than summarizing. While engaged in elaboration, the students are metacognitively involved in creating meaning from text. Because the nature of learning logs allows for more personal involvement, it may be more motivational to students than summarizing text. This motivational factor was evident in the present study. In conversations with his students, the teacher discovered that students who were assigned summary writing felt as though they were being treated unfairly; that the learning log and traditional groups were involved in more interesting activities.

A strong positive correlation between teacher explanation and student awareness was found in an earlier study (Duffy, G. G., Roehler, L. R., Meloth, M. S., Vavrus, L. G., Book, C., Putnam, J., & Wessleman, R., 1986). These researchers suggested that instructional talk has a powerful effect on what students remember and understand. In the present study, the teacher provided practice in both strategies, but did not explicitly explain the purpose for engaging in either summary writing or maintaining learning logs. As a result, student awareness of the purpose of engaging in these writing strategies was not evident.

Other Factors

Also, the time of day may have attributed to the findings of the present study. The summary writing group, with the lowest mean on the achievement measure, was the only group who met for biology instruction in the afternoon. Perhaps the students' ability to attend to and benefit from lectures was affected by this time variable.

A final consideration relevant to the findings was the nature of the measure of academic achievement. The "Muscles, Bones, and Blood" unit test consisted of 50 multiple-choice items which reflected the established objectives for the unit of study. One explanation for the lack of statistical significance between the writing groups and the traditional group may be that the unit test addressed simple recall and recognition. These processes are perhaps best learned through memorization. A traditional approach to instruction which emphasizes knowledge as the gathering of facts would be sufficient in promoting student mastery on tests of recall and recognition. A post hoc comparison of text questions answered by the traditional group and the test questions on the achievement measure, demonstrated that the cognitive demands of these two tasks were similar. Therefore, the traditional group was actually provided with the opportunity to practice prior to the unit test by answering factual, literal-level, end-of-chapter questions on three separate occasions during the unit of study.

Hypothesis 2 Results

Hypothesis 2 dealt with differences among the three groups in attitudes toward science content and learning. This construct was measured through the administration of a pre- and post-attitude survey. The ANCOVA results indicated no significant differences between the groups with respect to the dependent variable, attitude. Therefore, it was not possible to reject the second null hypothesis. Attitudes were found to vary greatly both before and after treatments. This inconsistency made further interpretation of the attitude results inappropriate. The findings confirmed that attitude was not significantly different between the experimental and control groups.

Hypothesis 3 Results

Hypothesis 3 dealt with differences among the three groups with respect to long-term retention of content information in biology. The ANCOVA results indicated no significant differences between the groups with respect to long-term retention. Therefore, it was not possible to reject the third null hypothesis. Because the results of the ANCOVA neared significance, the experimenter examined the differences in group means and noted that the learning log group performed substantially better than the traditional group, though this was not revealed as statistically significant. The small sample-size for the retention measure, 27 students, may account for this lack of significance.

Personalizing content information through elaboration, as students did in the learning logs employed in the present study, may have an effect on a student's ability to remember text information for longer periods of time. Because of the lack of statistical significance no further interpretation of the retention results was conducted.

Discussion

This study suggests that the writing-to-learn strategies (learning logs and summary writing) do not have a significant effect on biology achievement as measured by an end-of-unit, multiple-choice objective test following a six-week unit of study. However, the novelty of the strategies to the students involved in the present study may have inhibited the ability of these students to benefit from the writing activities. Further, the limited experience that the teacher had with writing instruction and the use of writing in his teaching, may have influenced his ability to effectively use the writing-to-learn techniques in the instruction of biology.

The nature of the test may also have been an inhibiting factor. The current focus on measures such as recall and recognition maintains a narrow emphasis on knowledge-change as simply the gathering of facts. This knowledge accretion seems to be a peripheral outcome of writing. Instead, the power of writing would appear to be in reconceptualizing certain aspects of knowledge and

internalizing information. These processes would enhance the learners' ability to apply that knowledge in future academic undertakings (Schumacher & Nash, 1991). The results of the attitude survey indicate that attitude is variable for ninth grade students with respect to science. The incorporation of writing-to-learn strategies did not effect attitude change in any of the groups over the six week period. Perhaps in a more longitudinal study, findings would be different. The short-term effect of the writing strategies on attitude toward science was insignificant.

On the other hand, the data revealed that long-term retention of content information may be improved through the use of learning logs. The students who were actively involved in manipulating information and making it relevant to their own experiences could recall this information more successfully than those who wrote more objectively in summary writing and answering literal-level comprehension questions following the reading of a text. Though this finding did not prove to be statistically significant, it suggests that elaboration may play a role in retention of content information.

An informal analysis of the students' written work revealed that most students who were successful at adhering to strategy guidelines for summary writing and learning logs scored at or above the mean on the achievement test. Students whose writing was of a lesser quality, and were not able to adhere to guidelines provided, performed less well on the achievement measure. Though it is inconclusive, this observation suggests that a student's academic achievement may be enhanced as the student becomes more proficient in writing summaries and learning log entries.

Conclusions

The ease of implementing these writing-to-learn strategies makes them appealing for daily classroom use. These strategies may also be used by students in interdisciplinary endeavors as they are not content specific. Though the writing groups did not significantly outperform the traditional group on the test of academic achievement, the students who wrote were provided with the opportunity to increase writing fluency (Jacobson, 1987; Vacca & Vacca, 1989).

The fact that students who wrote in learning logs were most successful in retaining content information six months following the unit of study, suggests that learning logs might be used to enhance long-term retention of information. Further, the learning log group scored significantly higher than the summary writing group on the measure of academic achievement. This finding suggests that of the two writing strategies, learning logs may be more effective for enhancing academic achievement over a short-term period. Because the study focused on a single six-week unit of study and the students who wrote summaries had not mastered this task, it may be that

summary writing is more beneficial once students have perfected their ability to summarize.

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Upcoming CARR Events

Wednesday, March 23, 2005

Spring Meeting Invited Speaker:

Lesley Morrow

Best Practice in Literacy Instruction: What We've Learned From Exemplary Teachers

Saturday, May 21, 2005

Annual Scholarship Breakfast

CARR Scholarship Research Report

Intergenerational Journal Buddies and Cross-Age Tutoring: Connections Worth Making

Adrienne Chasteen Snow

In this study, nine high school juniors and seniors enrolled in a remedial reading course designed to enhance their literacy skills were paired up with sixteen kindergarten students in a cross-age intergenerational dialogue journal exchange project. The journals were used as a vehicle to put the high school students into the role of "literacy expert" for their kindergarten buddies. Through this project, the high school students focused on learning about children's literature, improving their oral reading abilities, writing autobiographies, and increasing their communication skills. This researcher examined the students' attitudes about literacy before and after the exchange, self-evaluations that the students completed throughout the project, and the affect of authentic audience and purpose on reluctant readers and writers.

Statement of Purpose

The primary questions in this research project were:

1. What are the different structures involved in cross-age tutoring?
2. What is known about the benefits of cross-age tutoring and how does this partnership benefit both students?
3. What types of roles does the tutor play?
4. How does cross-age tutoring aid the construction of literary understanding?
5. How does being a cross-age tutor or tutee benefit a high school student?
6. Does cross-age tutoring improve one's self-concept?

Background Literature Review

Question 1: Cross-Age Tutoring Structures

The first question that I wanted to examine as I read through the research articles on cross-age tutoring was: *What are the different structures involved in cross-age tutoring?* Structures in a cross-age tutoring program can take on many different forms. One researcher described the relationship between the tutee and the tutor as being on either a teeter-totter or a tandem bike (Zukowski, 1997). In both of these scenarios the tutor is an active partner with his or her tutee. In the teeter-totter

analogy the tutor serves as an equal mate with his or her tutee in that the action of the teeter-totter, the learning, relies on the interaction of the two individuals, both giving to and taking from the other. In the analogy of the tandem bike the tutor takes on a definite role as leader. It is the tutor who is sitting up front, leading the way through the path of study. Yet, a tandem bike needs two people to work correctly. Without the tutee in the rear, the trip would be pointless, and certainly much less fun.

The structure of a cross-age tutoring program is not only personal but is professional as well. In most studies of cross-age tutoring, a bond forms between tutor and tutee. This bond is quite unique in that it has both professional and personal connections. The professional connections come from the structured program in which the pair is participating and the responsibility for learning implicit in such a relationship. Yet the personal connections can extend much farther. These connections may be built over time or initially through the discovery of a common interest or goal. The personal connections are the ones that enable the instructional material to really matter to both the tutor and the tutee. They also directly influence the responsibility for learning that is shared in a cross-age tutoring pair.

A performer/audience structure may also be observed throughout many instances of cross-age tutoring. This structure is a positive one in that it suggests a mutual respect both for the partner and the learning objective (Maring, Boxie, & Wiseman, 2000; Schall, 1995; Zukowski, 1997). In a rather formal structure, the performer/audience structure allows for much learning to take place and for assessment, both of other and self, to take place.

Another structure of a cross-age tutoring program is that of reciprocity. This results from the give and take element present in such a partnership. While the tutor is unquestionably at the helm of the instructional aspect of the relationship, the tutee's participation and willingness to learn are also central to the development and progression of learning for both the tutee and the tutor (Bean & Rigoni, 2001; Jacobson, et al., 2001; Kaiser, 1995; Maring, Boxie, & Wiseman, 2000; Zukowski, 1997).

With that reciprocity element in play, the structural necessity of total dedication becomes really central to a successful cross-age tutoring program (Bean & Rigoni, 2001; Cavanaugh, Johnson, Kaiser, 1995; Kitay, & Yuratovac, 1997; Fisher, 2001). Although certain system requirements may necessitate the occasional missed session, without consistent participation from both parties involved, the learning simply cannot take place and the bonding will not be able to happen.

Cross-age tutoring builds upon the traditional structures and roles within the classroom. Yet, cross-age tutoring departs from the norm and allows an element of uncertainty to enter the classroom environment. It is this decentralization process that allows students a freedom to

expand their own learning and to draw from the knowledge and experience (or lack of experience) of a partner (Zukowski, 1997).

In addition to having its own structure, in some cases the partnership program becomes an underlying structure for the whole school. Then, the first cross-age tutoring program becomes the example from which other like-minded programs are built and developed. In one program college-level tutors were paired with 5th graders in a cross-age tutoring project that focused on common interests. The researcher said that she knew that the program had been well accepted into the norms of the school when a 5th grader asked the school counselor, "Mrs. Yuratovac, could I have a big kid to help me with my work this year?" (Cavanaugh, Johnson, Kitay, & Yuratovac, 1997, p. 57).

Cross-age tutoring is often combined with another learning objective to create a new educational structure. It has been combined with various programs such as small group intervention (Taylor & Hanson, 1997), special education (Thrope & Wood, 2000), teacher education courses (Kaiser, 1995; Maring, Boxie, & Wiseman, 2000; Marahall, 1999), international pen pals (Allen, 1995; McClanahan, 2001), authentic audience type projects (Irvin, 1997; Kaiser, 1995; Keiser, 1991; Marshall, 1999; Schall, 1995), strategic reading (Jacobson, et al., 2001), the reading resource room (Fisher, 2001), extensive reading (Jacobs & Gallo, 2002), intergenerational dialogue discussion journals (Bean & Rigoni, 2001), reader response (Bean & Rigoni, 2001), and school-university partnerships involving technology (Allen, 1995; Bauer & Anderson, 2001; Maring, Boxie, & Wiseman, 2000).

The structure of a cross-age tutoring program can have many variables. Often researchers or teachers will look to include students who meet specific criteria (Cavanaugh, Johnson, Kitay, & Yuratovac, 1997; Jacobson, et al., 2001; Maring, Boxie, & Wiseman, 2000; Schneider & Barone, 1997; Taylor & Hanson, 1997). In addition they will pair students according to common interests or talents (Bean & Rigoni, 2001; Cavanaugh, Johnson, Kitay, & Yuratovac, 1997; Fisher, 2001; Marious, 2000). Another structure that really underlies an accomplished cross-age tutoring program is that of training sessions for the tutors. In these training sessions a multitude of subjects may be broached, but some common subjects include interpersonal skills, management skills, and content skills.

Question 2: Benefits of Cross-Age Tutoring

The second question researched was: What is known about the benefits of cross-age tutoring and how does this partnership benefit both students?

Cross-age tutoring proved to be feasible in situations with the brightest of students as well as with the struggling students. This research supports the Dixon-Krauss (1996) description of the benefits of tutoring to

students:

The lower achiever benefits from modeling and interacting with the higher achiever whereas the higher achiever learns how to be tolerant and understanding of individual differences. He learns to respect others for who they are and what they are able to do. While learning to organize and teach what he knows, he also learns to reflect on and monitor his own thought process. (p.89)

This study supports previous research about the positive benefits of cross-age tutoring for the students' construction of literary understanding and for the student's self-concept. Both students in the partnership gain personal as well as academic benefits. They can both feel a sense of accomplishment and competence. Through the tutoring process, the pair grows in their understanding and compassion for each other (Bean & Rigoni, 2001; Thrope & Wood, 2000). This healthy way of relating to another person has many positive implications for personal relationships outside of school.

Because cross-age tutoring is an active cooperative learning strategy, tutees receive immediate feedback that results in the ability for identifying and correcting basic misunderstandings in a timely fashion, moving on immediately to areas which the tutee or tutor designate as weak or needing practice, and then the rapid introduction of more difficult material when the learner is most ready for it (Maring, Boxie, & Wiseman, 2000; Thrope & Wood, 2000; Zukowski, 1997). Rather than progressing along steadily with a regular class, a cross-age tutoring pair is able to progress at their own, individually determined rate.

Cross-age tutoring is particularly efficient with literary partnerships because of the discussion of social issues, for instance in a novel. Cross-age tutoring is itself a social process; much of the best learning takes place within a social atmosphere, including the study of a novel, short story, or even poetry.

Cross-age tutoring allows for creativity in the students that is often encouraged and fostered in the regular classroom, but is not always accomplished. By breaking out of the traditional roles held by teacher and student, an open space is created. By using this creativity, students process information in different modes and use parts of their brains that are ready to absorb new information. The decentralization (Zukowski, 1997) of the typical classroom environment allows fresh ideas and independent, fulfilling study to take place.

Question 3: Types of Tutor Roles

A third question that I researched investigated the *types of roles that the tutor plays throughout a cross-age tutoring experience*. In much of the research the role of mentor is discussed, particularly in studies where the older of the pair, the tutor, was three or more years older than the tutee (Bauer & Anderson, 2001; Bean & Rigoni, 2001;

Cavanaugh, Johnson, Kitay, & Yuratovac, 1997; Elbaum, Vaughn, Hughes, & Moody, 1999; Schneider & Barone, 1997; Thrope and Wood, 2000; Zukowski, 1997). This role of mentor leads the tutor towards many positive possible experiences outside the academic world.

The role of audience is also found to be a common theme in much of the research (Bean & Rigoni, 2001; Cavanaugh, Johnson, Kitay, & Yuratovac, 1997; Elbaum, Vaughn, Hughes, & Moody, 1999; Taylor & Hanson, 1997; Zukowski, 1997). As an audience for the tutee, the tutor learns to assess both the tutee and him/herself in seeing the development of the instructional material. By paying attention to his or her tutee, the tutor is demonstrating awareness of the importance of the learning of that individual as well as a high level of respect that may serve to strengthen the tutee's self-concept.

Tutors in a cross-age partnership are also quite conscious of their role as role models for their young friends (Bean & Rigoni, 2001; Thrope & Wood, 2000; Zukowski, 1997). The tutor as role model may possibly have the most lasting effect on the tutee. Because we naturally participate in activities that are demonstrated by those we respect, like, or admire, if the tutor is demonstrating a positive attitude towards literacy or learning and then develops a role model type relationship with their tutee, the likelihood that the tutee will continue in a path of literacy or learning is greatly increased.

The remaining three questions of the research were addressed in the study and are discussed in the Results.

Participants and Context

The objectives of the study were to assess and observe behaviors and opinions regarding reading and writing in the high school students, designated the "literacy experts," prior to the study, during the study, and then at the completion of the study to see if those behaviors changed throughout the process of keeping exchange journals. Observations included the effect of cross-age tutoring on the construction of literary understanding, on the benefit of cross-age tutoring on high school students, and on the influence on enthusiasm and motivation. Other observations included the development of authentic purpose and audience for reluctant readers, the development of the reader's voice, the improvement of diction, pronunciation, and inflection in the reader; and the quality of the responses during the cross-age exchanges.

A total of twenty-five students were involved in this case study. The participants consisted of nine high school students (5 male, 4 female), all of which were students of the researcher, and sixteen kindergarten students (9 male, 7 female).

High School Students

The high school students were 16 to 18 years old and had reading levels 3rd grade to 9th grade. They were all

students in a remedial reading class designed to improve their reading levels and to enhance their learning throughout their curriculum. Seventy-eight percent of the students were also identified as special education students. The students attended a high school that has approximately 1,000 students and is set in a lower-middle-class community; sixty percent of the students are currently employed an average of 18 hours per week.

Students in the high school reading class completed a unit investigating children's literature prior to beginning the cross-age dialogue journal exchange project. In that unit students learned about the different types of children's literature, explored the different types of children's literature, selected a favorite type of children's literature, went on a field trip to the local library where they had a tour of the children's literature section, completed critiques of ten children's literature books, and then selected a favorite book and created a PowerPoint presentation on that book using before, during, and after reading strategies.

For the cross-age dialogue journal exchange project the researcher worked with the local library and selected a wide variety of texts to create a temporary mini-children's literature library in her classroom from which her students could self select books to use with the project. A general theme of friendship and multiculturalism was selected in discussions with the cooperating teacher.

Kindergarten Students

The kindergarten students were between the ages of 4 and 6. They came from an average middle class population. They were in a heterogeneously mixed ability classroom. There were three ESL students and three special education students. Their reading levels varied from early emergent to transitional.

Procedure

A qualitative multiple case study design was used to observe and assess the students. The design used a pre- and post-questionnaire and writing sample, observations by the teacher/researcher, and cross-age dialogue journals, which consisted of an introductory page, letters, responses to texts, pre-reading activities, cards, and drawings/decorations made especially for the paired "buddy."

The cross-age dialogue journal exchanges began with an introductory page that was created by the kindergarten students. The kindergarten class created the journal booklets and wrote on the first page. The students filled in the blanks for three sentences that told simple biographical information. They drew a picture of something they liked to do and signed their name on it. The journal books were then sent to the high school students.

For the first exchange the high school students wrote mini-autobiographies as a way of introducing

themselves. The students first composed the biographies using pen and composition paper in the classroom and then typed them onto the computer in the computer lab, so that the students could insert appropriate clip art and pictures from the Internet. The high school students also self-selected a book to share with each of their buddies. They first read the book and did a critique. Then they practiced reading it silently and checked for unknown words or ideas. Next they read it aloud to a peer who listened and advised them of any trouble spots. Finally, the high school students got into small groups or pairings and recorded themselves reading the text, complete with an introduction and bells indicating when the kindergarten buddy should turn the pages.

The cross-age dialogue journals were exchanged back and forth four times during the study. Each exchange brought a new text for the kindergarten to listen and respond to and new ideas for the high school students to employ when selecting the next text for their buddies and in writing back to them. The overall theme of friendship was kept throughout the duration of the project. The high school students acted as cross-age literacy tutors as they became the resident "literacy experts" in the project.

The researcher decided to pair one high school buddy per two kindergarten students so that there was one tape and book set per two students. This proved to be much more efficient for the kindergarten teacher as she could pair two students to listen to the story and tape simultaneously.

The kindergarten teacher chose to read each student's cross-age dialogue journal aloud to the whole class. This introductory activity motivated the kindergarteners to listen to the tape and follow the story. Throughout the week the kindergarten students listened to their story on the tape set. After they finished, the story was discussed with the teacher (one to one), and then they wrote on the response sheet in the journal. The students dictated to the kindergarten teacher what they wanted to say about the story. They illustrated the story on their own.

In addition to the exchanges of tapes and written responses, the paired students had a face-to-face meeting after the fourth exchange of materials.

Results

Throughout the exchange process the kindergarten students became more independent in their responses, using their kindergarten writing skills (letters and sounds) to respond. The high school students advanced in their critiques of the books, their reading skills, and their writing skills as they responded to their buddies. Both groups had an authentic audience to respond to; both groups felt the power of having an audience.

The results indicated that the high school students as a collective group had difficulties with oral reading and wanted real, authentic reasons to read and write. They felt

they had not been offered many authentic experiences to explore literacy thus far throughout their high school experience. As a group they expressed dissatisfaction with traditional worksheet and textbook-type activities.

In introducing the program to the high school students, the teacher/researcher felt apprehensive about the responses that many of these tough or "problem" students might have when told that they would be working with kindergarten students. Yet, these students were excited about the project and approached it with a decidedly positive attitude. This positive attitude prevailed throughout the duration of the project. This was evidenced by their willingness to participate, responses and reflections in their daily journals, and thoughtful writings that they made to their actual buddies.

In becoming the "literacy experts" in this cross-age exchange, the high school students learned about children's literature from both an adult and a child's perspective. They made decisions about theme and editorial content when selecting the texts for their buddies. They took a look at themselves from an observer's point of view as they wrote their mini-biographies. They practiced letter writing and etiquette skills as they sent two sets of holiday cards to their buddies. They worked in pairs or small groups as they discussed their potential text selections for their buddies and as they practice read. They further developed their sense of voice as they read to their buddies and practiced reading to each other. Pronunciation, enunciation, and diction were all improved, as was an overall view of themselves as readers and learners. This last item, dealing with their attitudes, was evidenced in their post-observation reflections, which they completed the day following the visit to the elementary school.

In each instance a bond was formed between the buddies. This bond, based on shared literacy experiences, was a result of the cross-age pairings. This project had a positive effect on how the students viewed themselves as individuals and the way in which they presented themselves to others. This was demonstrated in the cross-age dialogue journals as the high school students corresponded with their kindergarten journal buddies.

Through the process of keeping dialogue journals, both groups of students, particularly the high school students, experienced many of the benefits of cross-age tutoring:

- Fostering relationships and enhancing enjoyment of working with others;
- Developing a sense of community;
- Blending intrinsic and extrinsic motivation;
- Increasing self-esteem, self-respect, and self-confidence;
- Gaining significantly in reading skills (vocabulary, fluency, oral reading);
- Improving attitudes about engaging in reading and writing activities;
- Improving study skills (such as attending to

- important information and organizing materials);
- Reducing absenteeism and disciplinary referrals;
- Learning the value of independence and cooperation.

The experience of keeping the cross-age dialogue journals benefited both groups. Both sets of students increased their motivation to read and write as a result of having an authentic audience. The journals showed that the students took their writing seriously and developed a sense of personal relationships within their writings. The dialogue journals allowed for many different roles to be played throughout the experience. These roles are common in tutoring pairings, especially those of cross-age tutoring. Some of the most common roles were audience, observer, volunteer, role model, and leader.

The high school students discovered that having an authentic audience (their kindergarten buddies) gave new and real motivation for them to read effectively and with purpose. This was demonstrated in numerous ways. Their daily in-school journals recorded that they felt positive pressure to record their story reading with perfection where they normally wouldn't have. They found themselves being more and more careful in their recordings and making sure that as the "literacy experts" for their kindergarten buddies they carefully pronounced the words and read the story with meaning. They had to visualize and put themselves in the place of their younger buddy and rate their performance. In their journals they noted the difficulties they experienced in vocabulary, diction, voice, and confidence; these were once the students who were very self-conscious of their oral reading abilities, especially in front of peers.

The high school students also learned the importance of selecting appropriate literature for their audience. As the high school students researched, selected, and rehearsed their readings, they found that they needed to practice reading the text aloud. The awareness of voice, diction, pronunciation, articulation, intonation, and flow were central to a successful recording of each book. The students read silently, practiced reading to a partner, and then recorded in their journal key elements to remember when recording their next book.

The motivation for kindergarten students to listen to the taped stories and respond in journals increased with each exchange. The kindergarten students were excited to hear stories made just for them. To hear their buddy say the personalized "hello" on tape made the exchange an exciting and authentic experience. The kindergarten students were highly motivated to listen to their stories and respond in their journals.

The kindergarten students initially dictated their responses, but became more involved in the writing process as the project progressed. This became evident when many students wanted to write independently using sounds and symbols they knew, rather than dictating to their teacher what they wanted to write.

As the cross-age pairs received letters and personal information about their buddies, they became more connected with each other. For example, a kindergarten student demonstrated this connection when she drew a picture for the "special" day when the two groups were meeting each other for the first time. The kindergarten teacher noted that in the picture was the prediction of what her buddy looked like, book in hand, with speech bubbles saying "hi," and the word "book" on the book. The picture demonstrated the kindergarten student's independence in writing and the positive impact of the paired teen buddy experience.

The most rewarding outcome of this project occurred during the actual face-to-face meeting of the two groups of students, which happened after the fourth exchange. The kindergarten students were hosts to their high school buddies, presented their buddies with a laminated picture of themselves, and autographed it for them to keep.

Conclusion

In conclusion, this research demonstrated the benefit of cross-age tutoring in demonstrating positive literacy outcomes. Both groups of students strengthened their literacy skills and motivation to read; both groups experienced learning about a group of students different from themselves. Furthermore, the high school students had the opportunity to view themselves in a role quite different than they normally do (expert versus remedial). The experiences prompted the students to see themselves as literate learners. In sum, cross-age dialogue journal buddies are highly recommended to improve the literacy skills of both high school students and of kindergarten students.

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