A study examined the extent to which reported familiarity, reported utility, and perceived applicability of content area reading strategies were related to teaching in the primary grades. A total of 68 first- through third-grade teachers representing 6 elementary schools in 2 districts responded to the Content Area Questionnaire. Frequency analyses indicated moderate to large effects of knowledge, use, and recommendation of selected strategies considered general to reading comprehension. Variables reflecting years of teaching experiences, years of experience at current grade level, related workshop attendance, and related graduate coursework were analyzed to determine their effect on the three independent variables. The only variable that appeared not to affect the independent variables was years of teaching experience. (Contains 89 references and numerous unnumbered tables of data.)

(Author/RS)
A Comparison of Teachers' Knowledge and Use of Content Reading Strategies in The Primary Grades

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Abstract

The extent to which (a) reported familiarity, (b) reported utility, and (c) perceived applicability of content area reading strategies are related to teaching in the primary grades was examined, based upon the response of first through third grade teachers in two school districts. A total of 68 teachers representing six elementary schools, responded to the Content Area Questionnaire. Frequency analyses indicated moderate to large effects of knowledge, use, and recommendation of selected strategies considered general to reading comprehension. Variables reflecting years of teaching experience, years of experience at current grade level, related workshop attendance, and related graduate coursework were analyzed to determine their effect on the three independent variables. The only variable that appeared not to affect the independent variables was years of teaching experience.
Over the past 20 years, extensive research has been conducted in the area of content reading, examining strategies used by readers to comprehend expository text (Kletzien, 1991; Weaver & Kintsch, 1991). A close examination of reading in content areas has led to the conclusion that one of the primary instructional concepts employed in classrooms is based on the schema-interactive theory. Much of the basis for this theory stems from the work of Bartlett. In the 1930s, Bartlett observed that subjects with no previous experience with an Indian folktale, attempted to force their reading observations into “preexisting knowledge structures” (Weaver & Kintsch, 1991, p. 231) called schema. Bartlett used the term schema to explain how information stored in the mind can be integrated into knowledge with repeated use.

Further investigations into schema theory by Perfetti (1975) and Rumelhart (1976) outlined the interaction between reader and text in the construction or interpretation of meaning. Smith describes this interaction as the ability of the reader to construct “a theory of the world” (1994, p. 183). Combining the syntactic and semantic knowledge the reader possesses with the ability to predict and confirm a hypothesis during the reading process, suffices as a definition of comprehension. The reader’s use of these resources occurs simultaneously to bring meaning to and extract meaning from text. This process can best be described as a “feedback loop [whereby] the reader’s knowledge resources are increasing as he reads and becomes available for background or prior knowledge for subsequent reading of a text” (Singer, 1987, p. 102-103).

Only when students are able to use their prior knowledge of the topic, their
awareness of textbook parts, their understanding of the task, and their use of learning
and reading strategies (Archambeault, 1992) will they be successful in content area
reading. Weaver and Kintsch (1991) state that in reading expository text, “learning from
texts, not comprehension or text recall, is the goal” (p. 238). Reading proficiency
increases when teachers view "content reading as 'content communication' focusing
on good teaching practices which are designed to teach . . . the essential concepts of
subject matter areas" (Readence, Baldwin, & Dishner, 1980, p. 9). Readence, Bean,
and Baldwin (1992) included five developmental states needed to successfully
implement content area communication: 1) awareness of strategies, 2) knowledge, 3)
simulation or modeling, 4) practice, and 5) incorporation.

McKenna and Robinson (1990) assert that the most effective way to ensure the
success of content communication is through content literacy, defined as "the ability to
use reading and writing for the acquisition of new content in a given discipline" (p. 184).
Each discipline has content specific terminology which may not transfer from one
discipline to another. Thus, it is vital that classroom teachers acquaint themselves with
reading and writing strategies, their functions, and their uses in order to enhance
content literacy.

Textbooks and content area reading have traditionally been viewed as the
domain of secondary education (Armbruster, Anderson, & Meyer, 1991; Gee, Olsen, &
Forester, 1989; Moore, Readence, & Rickelman, 1983). The primary focus of previous
research on content reading strategies has concentrated on high school, middle
school, (McGee & Richgels, 1985; Moore, Readence, & Rickelman, 1983; Piccolo,
Content Reading Strategies 5

1987), a focus that Moore et al. find "curious because elementary-age students regularly read content area materials, too" (p.434). Research seems to indicate that the primary use that students make of textbooks is to acquire information (Adams, Carnine, & Gersten, 1982), but that student reading of textbooks is not as prevalent as has been previously thought (Armbruster, Anderson, Armstrong, Wise, Janisch, & Meyer, 1991). While the reading of content area text has been perceived to be too difficult for elementary school students (Alvermann & Boothby, 1982; Armbruster, Anderson, & Ostertag, 1989; Flood, 1986), children as young as kindergarten have been found to possess a rudimentary knowledge of information text (Pappas, 1990). How do primary grade teachers view content area reading and its associated strategies?

The purpose of this study was to determine whether specific content area reading strategies are being implemented in the primary grades, and the extent and appropriateness of including them in classroom practice. Three research questions were addressed:

1. Are teachers in grades one through three familiar with content area reading strategies?

2. How frequently are content area reading strategies used?

3. Are specific content area reading strategies perceived as applicable by primary teachers?

4. What effect do the factors of experience, experience at grade level, workshop attendance, and graduate courses taken have on the primary variables of familiarity, utility, and perceived applicability of techniques?
Methodology

Sample

The sample consisted of 58 teachers who completed the questionnaire, from two school districts located in the southeastern United States. The primary teachers included in the sample were first grade (n = 23), second grade (n = 16), and third grade (n = 19). Participants ranged from first year classroom teachers to teachers with 33 years of experience.

Instrumentation

An instrument entitled the Content Area Questionnaire was developed and used to survey the sample. The questionnaire which was developed by the authors to collect demographic data and information regarding content reading strategies consists of two sections: (1) a request for demographic information related to group membership (i.e., years of teaching experience, age, grade level taught, years teaching the specific grade level, attendance at content reading workshops, and previous enrollment in content reading courses); and (2) a list of 44 items reflective of content area strategies. The second section of the questionnaire was divided into three parts: (1) a yes/no response to indicate familiarity with each of 44 content area strategies; (2) a rating of how frequently the respondent uses one of the 44 strategies (often, sometimes, never); and (3) a yes/no response to determine if teachers perceive specific strategies as applicable to classroom instruction in the primary grades. The Content Area Questionnaire may be administered individually or in a group setting; approximately 20 minutes was required to respond to the questionnaire.
The list of items contained in the second section of the Content Area Questionnaire was compiled after a review of literature which included a search of ERIC citations, textbooks, Dissertation Abstracts, and the snowball method, which involves a follow-up search of pertinent references extracted from articles (Weitzel, 1990). Forty-four content area strategies were identified from the review of literature and are included as items in the questionnaire with the specific sources of information supporting inclusion of each item as follows:


2. **analogies** (Alexander & Kulikowich, 1991; Readence, Bean, & Baldwin, 1992)

3. **anticipation guides** (Armstrong, Patberg, & Dewitz, 1988; Bean, Singer, & Cowan, 1985; Cunningham, & Shablak, 1975; Readence, Bean, & Baldwin, 1992)

4. **cloze procedure** (Conley, 1992; Durkin, 1993; Henk, 1981; Readence, Bean, & Baldwin, 1992; Singer & Donlair, 1989; Weaver, 1994)

5. **computer programs** (Bosco, 1989; Conley, 1992; Dede, 1987; Durkin, 1993; Readence, Bean, & Baldwin, 1992)
6. conferencing (Konopak, Martin, & Martin, 1987; Weaver, 1994)

7. DRA (Donlan, 1985; Manzo, 1975; Patberg, 1979; Ryder, 1991)

8. DRTA (Bauman, 1992; Readence, Bean, & Baldwin, 1992; Santa, 1988; Weaver, 1994)


10. drama (Dupont, 1992; Durkin, 1993; Shoop, 1986; Weaver, 1993)

11. enrichment activities (Guthrie, 1979; Head-Windeatt, 1986; Larson, & Dansereau, 1986; Moorman, & Blanton, 1990)

12. guided writing (Bridge, & Hiebert, 1985; Davey, 1987; Eanet, & Manzo, 1976; Konopak, Martin, & Martin, 1990; Readence, Bean, & Baldwin, 1992; Shanahan, 1988; Smith, & Bean, 1980)

13. inserted questions (Farley, 1971; Shavelson, 1972; Yopp-Nolte, & Singer, 1985)

14. interest inventories (Conley, 1992; Durkin, 1993; Readence, Bean, & Baldwin, 1992; Wolfson, Manning, & Manning, 1984)

15. LEA (Dishner, 1992; May, 1994; McGee, 1985; Norton, 1994; Reeves, 1989; Weaver, 1994)

16. List-Group-Label (Readence, Bean, & Baldwin, 1992; Readence & Searfoss, 1980; Thomas, 1988)
17. journal writing (Conley, 1992; Durkin, 1993; Kirby & Liner, 1981; Readence, Bean, & Baldwin, 1992; Weaver, 1994)

18. matching definitions (McIntyre, 1980; Readence, Bean, & Baldwin, 1992)

19. mini-projects (Readence, Bean, W. & Baldwin, 1992)

20. modeling (Armbruster, Anderson, & Ostertag, 1989; Conley, 1992; Gee, 1987; Readence, Bean, & Baldwin, 1992; Weaver, 1994)

21. modeling from text (Armbruster, Anderson, & Ostertag, 1989; Conley, 1992; Duffy, Roehler, & Hermann, 1988; Readence, Bean, & Baldwin, 1992)

22. morphemic analysis (Karlin, 1973; McNaughton, 1994; Readence, Bean, & Baldwin, 1992)


24. oral conflict resolution (Peters, 1987; Pontecorvo & Zucchermaglio, 1986)

25. pattern guides (McNeil, 1994; Wood, 1992)

26. phonics (Durkin, 1993; Weaver, 1994)


28. prior knowledge (Conley, 1994; Crafton, 1983; Flood, Mathison, Lapp, & Singer, 1989; Gordon, 1990; Kletzien, 1991; Patberg, 1979; Pritchard,
Content Reading Strategies

1990; Readence, Bean, W. & Baldwin, 1992; Reinking, 1986; Stevens, 1982; Zakaluk, Samuels, & Taylor, 1986)

29. puzzles (Mountain, L., 1985; Readence, Bean, & Baldwin, 1992)


31. reciprocal teaching (Conley, 1992; Durkin, 1993; Manzo, 1969)

32. reports/self-reporting (Singer & Donlan, 1989; Hare, V. C., 1982)

33. scaffolding (Durkin, 1993; Pritchard, 1990; Weaver, 1994)

34. scrambled words (Readence, Bean, & Baldwin, 1992)

35. semantic mapping (Conley, 1992; Durkin, 1993; Fry, 1981; Naughton, 1993; Readence, Bean, & Baldwin, 1992; Weaver, 1994)

36. structured overview (Conley, 1992; Durkin, 1993; Maring, 1985)

37. study guides (Adams, Carnine, & Gersten, 1982; Conley, 1992; Davey, 1987; Eanet, & Manzo, 1976; Readence, Bean, & Baldwin, 1992)

38. summarizing (Bean, & Steenwyk, 1984; Conley, 1992; Hill, 1991; Readence, Bean, & Baldwin, 1992)

39. surveying text (Baumann, 1984; Conley, 1992)

40. think aloud (Baumann, Jones, & Seaforth-Kessell, 1993; Durkin, 1993; Readence, Bean, & Baldwin, 1992; Weaver, 1994)

41. KWL three level guide (Conley, 1992; Durkin, 1993; Readence, Bean, &

43. **vocabulary cloze** (Carr, 1989; Readence, Bean, & Baldwin, 1992; Weaver, 1994)

44. **word maps** (Readence, Bean, & Baldwin, 1992; Schwartz & Raphael, 1985)

The Content Area Questionnaire was field tested using a sample of 16 preservice teachers, who responded to the instrument and made suggestions for improving it. Their suggestions were incorporated into the instrument.

**Procedures**

After field testing the Content Area Questionnaire, letters were sent to the superintendents of each school district, requesting permission to administer the survey. Upon receiving consent to distribute the questionnaires, personal contact with each school's principal was made by one of the researchers. To minimize disruption to the classroom teachers' schedules, the surveys were forwarded to each principal along with directions for completing each part of the survey. The surveys were distributed by hand to each of the first through third grade teachers in each school. Questionnaires were collected in person one week after each school had received their copies.

**Results**

Responses from a total of 68 respondents were included in the data analysis.
The instrument used for the study yielded three scores which were treated as dependent variables. These scores were the totals from the three columns; the first column being yes/no (1=no; 2=yes) response to indicate familiarity with each of 44 content area strategies; The second column indicated the frequency with which the respondent used each of the 44 strategies (3=often, 2=seldom, 1=never). The third column provided opportunity for a yes/no response (1=no; 2=yes) to determine whether teachers perceived that each strategy was applicable to classroom instruction in the primary grades. Four independent variables were used in order to determine what factors might affect teachers' familiarity with, utility of, and sense of applicability about content area strategies.

**Years of Teaching Experience**

1 = 5 years of experience or less;
2 = 6-10 years of experience;
3 = 11-15 years of experience;
4 = 16-20 years of experience; and
5 = over 20 years of experience.

**Years of Experience at Current Grade Level**

1 = 5 years of experience or less;
2 = 6-10 years of experience;
3 = 11-15 years of experience;
4 = 16-20 years of experience; and
5 = over 20 years of experience.
Content Area Workshop Attendance (Yes or No)

Content Reading Course (Yes or No)

Frequency analyses were initially conducted on each of the separate strategies to ascertain the percentage of responses for each of the three groups: (1) familiarity with the strategy; (2) reported use of the strategy; and (3) applicability of the strategy to the primary classroom situation. The frequency analyses were performed using the FREQUENCIES procedure in SPSSX.
Content Reading Strategies

Content Area Questionnaire - Frequency Responses for Each Methodology

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<th>How often do you use this strategy?</th>
<th>Would you recommend using this strategy?</th>
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- questioning
- techniques
- phonics
- guided writing
- journal writing
- enrichment activities
- prediction
- modeling
- summarizing
- modeling from text
- prior knowledge
- computer programs
- think aloud
- puzzles
- inserted questions
- oral conflict resolution
- discussion forums
- word map
- matching definitions
- mini-projects
- use of text structure
- study guide
- structured overview
- List-Group-Label
- vocabulary cloze
- scrambled words
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*Note: The numbers in italics represent the rank order of the items in each category.*
Survey responses were also analyzed using a one-way analysis of variance to ascertain statistical significance. The first set of four ANOVAs tested for differences between the variable of familiarity with content area reading methods, and the four factors of teaching experience, teaching experience at current grade level, attendance at a content area reading workshop, and post-baccalaureate coursework in content area reading. The first ANOVA tested for differences in familiarity with content area reading methods, and teaching experience.

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<th>Source</th>
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<th>F Prob.</th>
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As can be seen, an F-ratio of less than 1, and a probability of .79 suggest that years of teaching experience is not related to familiarity with methods used in content area reading instruction.

The second ANOVA tested the effect of experience at grade level on familiarity with methods used in content area reading instruction.

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<th>Group</th>
<th>Count</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 years of experience or less</td>
<td>22</td>
<td>82.0455</td>
<td>4.7857</td>
</tr>
<tr>
<td>6-10 years of experience</td>
<td>17</td>
<td>75.6471</td>
<td>10.6121</td>
</tr>
<tr>
<td>11-15 years of experience</td>
<td>19</td>
<td>77.0000</td>
<td>7.3862</td>
</tr>
<tr>
<td>Total</td>
<td>58</td>
<td>78.5172</td>
<td>8.0813</td>
</tr>
</tbody>
</table>

A significant difference was found to exist between teachers with 5 years of experience or less, and teachers with between 6 and 10 years of experience. An inspection of the means indicates that recently certified primary teachers tend to have more familiarity with content area teaching than do more experienced teachers.

The third ANOVA, which could have been answered by an independent t-test equally adequately, but was expressed as an ANOVA for continuity, tests the effect of attendance at one or more workshops dealing with some aspect of content area reading instruction, and familiarity with methods used to develop skill in content area reading instruction.

Variable Column 1 - Familiarity
By Variable Related Workshop
Analysis of Variance

<table>
<thead>
<tr>
<th>F Source</th>
<th>D.f.</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ratio</td>
<td>Prob.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>1</td>
<td>429.2006</td>
<td>429.2006</td>
</tr>
<tr>
<td>7.2731</td>
<td>.0094</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Within Groups</td>
<td>53</td>
<td>3127.6357</td>
<td>59.0120</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>3556.8364</td>
<td></td>
</tr>
</tbody>
</table>

A statistical difference existed between the group of teachers who reported attending at least one content area workshop and those who reported not having
attended a content area workshop on reported familiarity with methods for developing skill in content area reading instruction.

ANOVA 4 tested for differences in teachers who had a post-baccalaureate course in content area reading instruction and those who had no coursework in content area reading instruction.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Column 1 - Familiarity</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Variable</td>
<td>Graduate Coursework</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>D.f.</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F Ratio</th>
<th>F Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1</td>
<td>236.9063</td>
<td>236.9063</td>
<td>4.9297</td>
<td>.0306</td>
</tr>
<tr>
<td>Within Groups</td>
<td>54</td>
<td>2595.0937</td>
<td>48.0573</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>55</td>
<td>2832.0000</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>Count</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>32</td>
<td>80.7813</td>
<td>6.4395</td>
<td>1.1383</td>
</tr>
<tr>
<td>No</td>
<td>24</td>
<td>76.6250</td>
<td>7.5459</td>
<td>1.5403</td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td>79.0000</td>
<td>7.1757</td>
<td>.9589</td>
</tr>
</tbody>
</table>

A statistical difference existed between the group of teachers who reported having at least one course in content area reading and those who reported not having had any courses in content area reading on reported familiarity with methods for developing skill in content area reading instruction.

The second set of four ANOVAs tested for differences between the variable of utility of content area reading methods, and the four factors of teaching experience, teaching experience at current grade level, attendance at a content area reading workshop, and post-baccalaureate coursework in content area reading. The fifth ANOVA tested for differences in utility of content area reading methods, and teaching experience.
As can be seen, an F-ratio of 1.185, and a probability of .42 suggest that years of teaching experience is not related to utility of methods used in content area reading instruction.

The sixth ANOVA tested the effect of experience at grade level on utility of methods used in content area reading instruction.

A significant difference was found to exist between teachers with 5 years of
experience or less, and teachers with between 6 and 10 years of experience and
teachers with 11 to 15 years of experience. An inspection of the means indicates that
recently certified primary teachers tend to report using methods associated with content
area teaching than do more experienced teachers.

The seventh ANOVA, which could have been answered by an independent t-test
equally adequately, but was expressed as an ANOVA for continuity, tests the effect of
attendance at one or more workshops dealing with some aspect of content area
reading instruction, and reported utility of methods used to develop skill in content area
reading instruction.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Utility By Variable Workshop Attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
<td>D.f.</td>
</tr>
<tr>
<td>Between Groups</td>
<td>3</td>
</tr>
<tr>
<td>Within Groups</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
</tr>
</tbody>
</table>

A statistical difference existed between the group of teachers who reported
attending at least one content area workshop and those who reported not having
attended a content area workshop on reported utility of methods for developing skill in
content area reading instruction.

ANOVA 8 tested for differences in teachers who had a post-baccalaureate
course in content area reading instruction and those who had no coursework in content
A statistical difference existed between the group of teachers who reported having at least one course in content area reading and those who reported not having had any courses in content area reading on reported utility of methods for developing skill in content area reading instruction.

The third set of four ANOVAs tested for differences between the variable of applicability of content area reading methods, and the four factors of teaching experience, teaching experience at current grade level, attendance at a content area reading workshop, and post-baccalaureate coursework in content area reading. The ninth ANOVA tested for differences in knowledge about content area reading methods and teaching experience.
As can be seen, an F-ratio of 1.4061, and a probability of .35 suggest that years of teaching experience is not related to perceived applicability of methods used in content area reading instruction.

The tenth ANOVA tested the effect of experience at grade level on utility of methods used in content area reading instruction.

<table>
<thead>
<tr>
<th>Variable Perceived Applicability</th>
</tr>
</thead>
<tbody>
<tr>
<td>By Variable Experience at Grade Level</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Analysis of Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Source</td>
</tr>
<tr>
<td>----------------------</td>
</tr>
<tr>
<td>Between Groups</td>
</tr>
<tr>
<td>Within Groups</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Group</th>
<th>Count</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grp 1</td>
<td>21</td>
<td>107.1429</td>
<td>16.3563</td>
<td>3.5692</td>
</tr>
<tr>
<td>Grp 2</td>
<td>17</td>
<td>95.2941</td>
<td>26.5466</td>
<td>6.4385</td>
</tr>
<tr>
<td>Grp 3</td>
<td>19</td>
<td>91.6316</td>
<td>18.6166</td>
<td>4.2709</td>
</tr>
<tr>
<td>Total</td>
<td>57</td>
<td>98.4386</td>
<td>21.3408</td>
<td>2.8267</td>
</tr>
</tbody>
</table>

No significant difference was found to exist between groups of teachers with varying degrees of experience at their current grade levels.

The eleventh ANOVA, which could have been answered by an independent t-test equally adequately, but was expressed as an ANOVA for continuity, tests the effect of attendance at one or more workshops dealing with some aspect of content area reading instruction, and perceived applicability of methods used to develop skill in content area reading instruction.
Variable Utility  
By Variable Workshop Attendance  

Analysis of Variance  

<table>
<thead>
<tr>
<th>Source</th>
<th>D.f.</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F Value</th>
<th>F Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
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<td>3585.3125</td>
<td>3585.3125</td>
<td>9.4091</td>
<td>.0034</td>
</tr>
<tr>
<td>Within Groups</td>
<td>52</td>
<td>19814.3912</td>
<td>381.0460</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>53</td>
<td>23399.7037</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Group | Count | Mean | Standard Deviation | Standard Error |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Grp 1</td>
<td>34</td>
<td>103.3235</td>
<td>19.0243</td>
<td>3.2626</td>
</tr>
<tr>
<td>Grp 2</td>
<td>20</td>
<td>86.4500</td>
<td>20.3534</td>
<td>4.5512</td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>97.0741</td>
<td>21.0120</td>
<td>2.8594</td>
</tr>
</tbody>
</table>

A statistical difference existed between the group of teachers who reported attending at least one content area workshop and those who reported not having attended a content area workshop on perceived applicability of methods for developing skill in content area reading instruction.

ANOVA 12 tested for differences in teachers who had a post-baccalaureate course in content area reading instruction and those who had no coursework in content area reading instruction.

Variable Perceived Applicability  
By Variable Graduate Coursework  

Analysis of Variance  

<table>
<thead>
<tr>
<th>Source</th>
<th>D.f.</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F Value</th>
<th>F Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>1</td>
<td>2199.4904</td>
<td>2199.4904</td>
<td>5.5635</td>
<td>.0212</td>
</tr>
<tr>
<td>Within Groups</td>
<td>53</td>
<td>20953.3454</td>
<td>395.3461</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>54</td>
<td>23152.8364</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Group | Count | Mean | Standard Deviation | Standard Error |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Grp 1</td>
<td>31</td>
<td>104.7097</td>
<td>20.0486</td>
<td>3.6008</td>
</tr>
<tr>
<td>Grp 2</td>
<td>24</td>
<td>91.9583</td>
<td>19.6656</td>
<td>4.0142</td>
</tr>
<tr>
<td>Total</td>
<td>55</td>
<td>99.1455</td>
<td>20.7064</td>
<td>2.7921</td>
</tr>
</tbody>
</table>

A statistical difference existed between the group of teachers who reported having at least one course in content area reading and those who reported not having
has any courses in content area reading on perceived applicability of methods for
developing skill in content area reading instruction.

Discussion

Research suggests that students' primary purpose, when reading content area
texts, is to acquire information (Adams, Carnine, & Gersten, 1982). This research has
concentrated chiefly on children in grades 6-12, as expository text has been perceived
as too difficult for elementary school students (Alvermann & Boothby, 1982;
Armbruster, Anderson, & Ostertag, 1989; Flood, 1986). However, children as young as
kindergarten have a fundamental knowledge of information text (Pappas, 1990).
Therefore, it appears that children in the early elementary grades have been exposed
to content area texts as a part of literacy acquisition and the reading process.

The results of this study supported the hypothesis that specific content area
reading strategies are being implemented in the primary grades. Their impact is
reflected by the results of this survey with regard to familiarity, perceived applicability
and utility.

When examining teachers' familiarity with specific strategies, the most frequent
responses were questioning techniques, phonics, guided writing, journal writing,
enrichment activities, prediction, and modeling, with summarizing frequently used in the
classroom. Experience at grade level, attendance at a content reading workshop, and
post-baccalaureate coursework in content reading were contributing factors to the
variable of familiarity. It is interesting to note that teachers who have 5 years of
experience or less, and teachers who had enrolled in graduate coursework were found
to be more familiar with the specific reading strategies. This suggests that preservice teachers presently enrolled in undergraduate reading courses and teachers who are currently pursuing further studies are being instructed in the use of specific reading strategies.

For the second variable, utility, the most frequent responses were journal writing, prior knowledge, phonics, enrichment activities, guided writing, and prediction. Experience at grade level, attendance at a content reading workshop, and post-baccalaureate coursework in content reading were contributing factors to the variable of utility. Once again, this strongly suggests that preservice teachers and teachers enrolled in graduate courses have instruction which emphasizes content area reading strategies.

For the last variable, perceived applicability, the highest responses were journal writing, enrichment activities, prior knowledge, questioning techniques, phonics, puzzles, matching definitions, prediction, analogies, guided writing, summarizing, modeling, computer programs, mini-projects, modeling from text, and study guides. Experience at grade level, attendance at a content reading workshop, and post-baccalaureate coursework in content reading were contributing factors to the variable of perceived applicability.

The results of this study suggest that although teachers assume familiarity with content area reading strategies; many strategies that are recommended in the literature are unfamiliar to them. Teachers seem to use general strategies, such as journal writing with content area reading, rather than strategies such as advanced organizers,
which have been specifically developed to help with content area reading. This suggests that reading instruction should incorporate the use of learning and reading strategies, coupled with an awareness of textbook parts and an understanding of the content reading task.
References


conceptual change with science texts and discussion. Journal of Reading, 34(8), 596-601.


