THINKING STRATEGICALLY TO RECORD NOTES IN CONTENT CLASSES

Author

JOSEPH R. BOYLE, PH.D., is an Associate Professor in the Graduate School of Education at Rutgers, The State University of New Jersey in New Brunswick, New Jersey.

Abstract

Although teachers today use a variety of teaching methods in content-area classrooms, lecture learning and note-taking still comprise a considerable portion of time in these classes. Unfortunately, most students are poor note-takers, typically recording only about one quarter of lecture notes. Strategic note-taking was developed to assist students during lecture learning and note-taking. In this study, 76 middle school students were assigned to an experimental or control group to assess the effects of strategic note-taking on notes recorded, a delayed recall measure, and a test. The results of multivariate analyses indicated that students who used strategic note-taking recorded significantly more notes and performed better on achievement measures than students in the control group. Limitations and implication for practice are discussed.

Study skills, such as learning from lectures and note-taking, remain essential skills for today’s students. In fact, note-taking is the most common method used by students to learn information from content lectures (e.g., science, social studies) (Kobayashi, 2005, 2006; Ryan, 2001). Taking notes allows the student to be actively involved in the lecture by listening for important information, rephrasing it, and recording it in notes (Steimle, Brdiczka, & Muhlhauser, 2009). The act of writing down information allows students to cognitively process information, thereby enabling them to better learn the information (Bransford, Brown, & Cocking, 2000; Mayer, 2008; Slotte & Lonka, 1999;) (i.e., this is commonly referred to as the generation effect,
Thinking Strategically to Record Notes in Content Classes

Foos, Mora & Tkacz, 1994). Although electronic methods (i.e., Tablet PC, Palm Pilot, laptop computer) of recording notes are available to students, the cost of technology can be prohibitive and even today, most students prefer traditional pencil and paper because it is inexpensive, quick and easy to use, and highly mobile (Steimle et al., 2009). Therefore, it is unlikely that traditional note-taking will be completely replaced by technology in the near future. Instead, there will continue to be a variety of media used by students to record lecture notes and hence, the need to examine strategies that will allow students to become better note-takers despite the medium used (Kobayashi, 2006).

A look into today’s science classrooms reveals that teachers use a variety of methods to teach in content areas. Of these methods, teacher-led lectures with note-taking are still a major form of instruction used in middle and high schools (Johnson, 2008; Pasley, Weiss, Shimkus, & Smith, 2004; Scruggs, Mastropeieri, & McDuffie, 2007; Weiss, Pasley, Smith, Banilower, & Heck, 2003), with one-third or more of the class time in science spent in lectures/discussions (Fulp, 2002; Vogler, 2006). Despite the importance of effective note-taking skills, students often lack the strategic skills to benefit from the demands of their content-area classes (Kobayashi, 2005; Stanley, Slate, & Jones, 1999). Moreover, research has shown that students’ note-taking practices are poorly designed to capture the majority of relevant lecture ideas, relate these ideas together, and connect students’ prior knowledge with new lecture information (Kiewra, 1991; Ryan, 2001). As a result, many students report problems with note-taking. For example, Mortimore and Crozier (2006) found that approximately 20% of students reported note-taking as an area of difficulty and note-taking was also reported as one of the top three areas (i.e., note-taking, general organization, and time-keeping) of difficulty for students as they transitioned from high school to college. Finally, a number of studies have shown that students’ poor note-taking skills often result in the typical student recording less than 40% of important lecture points (Boyle, 2010; Kiewra, Benton, & Lewis, 1987; Kiewra, DuBois, Christian, & McShane, 1988; O’Donnell & Dansereau, 1993).

For middle school students, note-taking during lectures can be a demanding process that requires considerable cognitive effort and resources (Piolat, Olive, & Kellogg, 2005). Because memory is limited in terms of how much information it can store, notes serve as an extension of memory to help students preserve lecture content well after the lecture has ended (Piolat et al., 2005; Suritsky & Hughes, 1996). Note-taking requires students to listen to incoming verbal information, select important points from extraneous lecture content, relate important lecture content to prior knowledge,
Boyle thinking strategically to record notes in content classes

abbreviate or rephrase information into a succinct form, and then record the relevant information into organized and legible notes. From a working memory (WM) perspective, note-taking during lectures involves holding incoming information in verbal working memory (VWM); quickly selecting, constructing, and/or transforming important propositions, and transcribing (via writing) the information held in WM, before it is forgotten - all while maintaining the continuity of the lecture (Kiewra & Benton, 1988; Kiewra et al, 1987; Kobayashi, 2005; Peverly, 2006; Piolat et al., 2005). Moreover, unlike other academic tasks (i.e., reading a book or writing an essay), note-taking requires students to deal with the temporal demands involved with recording notes while listening to a lecture. If they record notes too slowly, they risk missing upcoming lecture points because they are busy processing and transcribing the information to notes, or students will lose lecture information already in working memory (Piolat et al., 2005). If they record notes too quickly, students may not benefit from the encoding effects that come from recording notes (Katayama, Shambaugh, & Doctor, 2005; Kobayashi, 2005; Shrager & Mayer, 1989). Finally, if too much information is presented or presented too quickly, students can readily become overwhelmed, with the end result being working memory overload (Gathercole, Lamont, & Alloway, 2006).

While note-taking may not be the only method by which students learn content during lectures, it remains an efficient method for learning content (Carlson, 2005; Johnson & Mighten, 2005; Morgan, Whorton, & Gunsalus, 2000), when compared to other teaching methods (e.g., lecture learning without notes, cooperative learning, problem-based learning). Moreover, “few variables predict test outcomes when notes are included among the predictor variables” (Peverly, Ramaswamy, Brown, Sumowski, Alidoost, & Garner, 2007, p. 177). As such, lacking generative note-taking skills and the ability to use them effectively in content-area classes has tremendous ramifications on test scores and grades for students. When students do not use effective note-taking skills during lectures, they end up missing out on important concepts and content (Boyle, 2010; Scruggs, Mastropieri, Berkeley, & Graetz, 2010; Scruggs, Mastropieri, Okolo, 2008), perform poorly on course tests and quizzes (Laidlaw, Skok, & McLaughlin, 1993; Cawley, Kahn, & Tedesco, 1989; Ward-Lonergan, Lilies, & Anderson, 1998, 1999), and in the end, are at risk for earning lower grades in content area courses (Baker & Lombardi, 1985; Deshler, Schumaker, Bui, & Vernon, 2006). Finally, note-taking is an important skill for college-bound students to learn in middle and high school because it is used by almost all students in college, with 98% (Brobst, 1996) of college students reporting using note-taking in
thinking strategically to record notes in content classes

Boyle

their classes to learn from lectures (Titsworth & Kiewra, 2004; Wirt, Choy, Greald, Provasnik, Rooney, & Watanabe, 2001).

Students need to use strategies that allow them to filter and organize incoming information during lectures so that it is transformed into meaningful units of knowledge in notes (Makany, Kemp, & Dror, 2009). Research has shown that students’ use of elaboration and organization strategies and use of meta-cognitive self-regulation are significant predictors of seventh-grade students’ achievement in science (Akyol, Sungur, & Tekkaya, 2010). Likewise, organized and well-structured notes have been shown to be positively correlated with test scores and learning benchmarks (Titsworth & Kiewra, 1998, 2004). One method to help students learn content information is by applying Mayer’s SOI Model of Learning (Mayer, 1996, 2008) to note-taking. According to the SOI (i.e., selection, organization, and integration) model (Mayer, 2008), learning occurs through three processes of: (a) students attending to incoming materials to determine what is relevant and what is not; (b) students organizing relevant incoming material into a coherent mental representation by building connections between the selected pieces of information; and (c) students relating relevant incoming materials with existing knowledge from long-term memory.

When applied to strategic note-taking (SN), this model would allow students to approach the task strategically by selecting important lecture points and vocabulary and organizing the content into a logical semblance of notes. The SN paper (see Figure 1) and strategy do this by prompting students to record notes through five main meta-cognitive cues of linking prior knowledge, clustering main ideas, summarizing like ideas, recognizing vocabulary, and reviewing main lecture points. [Keep in mind that Figure 1 is an abbreviated form, with the actual SN packet being several pages long.] The SN strategy was developed to help students understand the important aspects of a lecture as they correspond to components found on the SN paper. Rather than teach each note-taking skill as separate items as other researchers have done (Bretzing, Kulhavy, & Caterino, 1987; Carrier & Titus, 1981), a first letter mnemonic strategy (i.e., CUES) was used to help students remember the skills. In the first step, the Cluster step, students are to record the chunked ideas (i.e., three to six related lecture points) on the SN paper. The Use step prompts students to listen for teacher cues (i.e., number cues and importance cues) during the lecture and when they hear these cues, they should record the lecture points that are associated with the cues. In the Enter step, students enter vocabulary words in the appropriate area on the SN paper. In the Summarize step, students wrote a word or words that would categorize the three to six lecture points that have already been listed.
(i.e., clustered together) on the SN paper. The end result of using strategic note-taking should be that students develop a set of notes that contain critical lecture information (i.e., cued lecture points and important vocabulary) and are organized around clusters of similar lecture points, resulting in longer, more detailed notes.

Therefore, the purpose of this study was to examine the effects of strategic note-taking on the learning of middle school students. Specifically, this study sought to address four research questions:

1. Would middle school students who used strategic note-taking record more important lecture information (cued lecture points and vocabulary)?
2. Would middle school students who used strategic note-taking record more clusters of related lecture points?
3. Would middle school students who used strategic note-taking record more notes overall?
4. Would middle school students who used strategic note-taking perform better on a long-term recall measure and a comprehension test?

**Method**

**Overview of the Study**

The study was conducted over four sessions. Using an experimental group control group design (Kerlinger, 1986), 76 middle school students in sixth through eighth grade were randomly assigned to either a control or experimental group. During the first two sessions, the experimental group was instructed using the training videotaped lecture. The videotaped lecture used for training was on the topic *Frogs and Toads*. During the first 50-minute training session, the primary investigator followed a scripted lesson and trained students how to use the SN strategy with the SN paper. Throughout the training, the investigator provided a brief description of strategic note-taking, modeled the technique, and guided students through practice portions of the videotaped lecture while providing appropriate feedback. During the training, the videotaped lecture was stopped several times for a discussion of strategic note-taking, lecture content, and notes. During the second 50-minute training session, experimental students again used the same videotape, but with new SN paper. The difference between this session and the previous training session was that the videotape was not stopped until the end of the lecture. The purpose of this training session was to acclimate students with the speed of the lecture and improve their fluency at using strategic note-taking.
During the third session, experimental and control students together viewed the second videotaped lecture (i.e., *Sican Metal Workers*), recorded notes, and completed a test. The control group was provided with lined (blank) paper and instructed to use their conventional note-taking procedures to record notes from the videotape, while the experimental group was provided with the SN paper and instructed to record notes as they were trained. The videotaped lecture for this third session was 23 minutes in length and presented at an average rate of 110 words per minute (WPM). This WPM rate fell within the middle range of *rates of presentation* in videotaped lectures used in past research: 100 WPM (Risch & Kiewra, 1990); 108 WPM (Hughes & Suritsky, 1994), 109 WPM (Boyle, 2010), 110 WPM (Boyle & Weishaar, 2001). Each lecture was read from a script that contained both CLP and noncued lecture points (NCLP). This particular lecture contained 17 CLP plus 43 NCLP, totaling 60 TLP. Immediately after the videotape concluded and students finished recording notes, all notes were collected and students were administered the test. On the fourth session, (two days later) experimental and control students met and each student completed the long-term free recall (LFR) measure. Those students in the experimental group were also asked to complete the SN student questionnaire.

**Subjects**

Middle school students were randomly assigned to groups, with each group comprised of 38 students and of these groups, 17 were male and 21 were female per group. The composition of the entire sample was 52.6% European-American, 25.0% Hispanic-American, 15.8% African American, and 6.6% Asian-American. Students who participated in the study were nominated by their teachers based upon a passing grade in science (i.e., A, B, C, or D grade) and a passing score of at least 200 (i.e., proficient or advanced) from the state’s most recent assessment in science. Teachers then assigned a ranking to students of average (A), above average (AA), or below average (BA). Next, students were randomly distributed to experimental and control groups based upon teacher ranking and grade, resulting in the control group comprised of 18 A, 15 AA, and 5 BA students and the experimental group comprised of 18 A, 13 AA, and 7 BA.

Letter fluency was used as a pre-treatment measure because letter fluency (i.e., transcription fluency) was a consistent predictor of the note quality (Peverly et al., 2007). Letter fluency was assessed by administering a three-minute writing measure in which students wrote their first name for three minutes. After scoring, a t-test was conducted to assure that both groups were equivalent on writing speed. The results of this initial analyses
found no significant differences between the two groups on letter fluency (i.e., experimental group: $M = 68.24, SD = 18.06$ and control group: $M = 72.03, SD = 15.48$), and their writing speed fell within the range of studies that examined handwriting speed among middle school students (Hamstra-Bletz, & Blote, 1990; Graham, Weintraub, & Berninger, 1998; Phelps, Stemple, & Speck, 1985).

Data Collection

The three measures that were used to assess the effectiveness of strategic note-taking included: long-term free recall (LFR) measure, a test score (TS), and students’ notes. Similar measures have been used in the past to assess student’s productivity and performance from lectures (Kiewra, Benton, Kim, Risch, & Christensen, 1995; O’Donnell & Dansereau, 1993; Rickards, Fajen, Sullivan, & Gillespie, 1997; Risch & Kiewra, 1990). The measures were scored and analyzed in several ways using CLP, TLP, vocabulary words (VOC), clusters, and total words (TW) across notes and the recall measure. Students’ notes and recall measures were examined for CLP and TLP based upon how many individual lecture points (LP) were present in their notes. A lecture point was defined as an idea or a block of information from the lecture and typically was represented by a short clause or phrase (Hughes & Suritsky, 1994; Titsworth & Kiewra, 2004). Assessing notes according to LP is a common procedure that was used in previous research (Brown, 2005; Hughes & Suritsky, 1994; Kiewra et al., 1995; O’Donnell & Dansereau, 1993; Risch & Kiewra, 1990). Along with lecture points, students’ notes and the recall measure were also assessed by counting the total number of words (Boyle & Weishaar, 2001; Hartley & Marshall, 1974). As a secondary measure of important lecture information, number of VOC (e.g., artifacts, naipes, excavation, goldsmith, metalworkers, tumbaga) was also counted. Students were awarded one point per vocabulary word found in notes, with a maximum of 32 possible points. Clusters of related lecture points were also counted in notes. A cluster was defined as two or more related lecture points listed in notes and a cluster had to be separated from other lecture points by a line space, lines, or other demarcation. Finally, student learning was assessed using a fifteen-point multiple-choice test. Students’ test score (TS) was used to assess how performance would vary between the two groups (i.e., experimental vs. control). An independent rater scored all notes in terms of CLP, TLP, VOC, clusters, and TW. A second rater then randomly selected one third of students’ notes and scored each in the same manner as the first rater. Interrater reliability for students’ notes was calculated to be .95 for CLP, .95 for TLP, .96 for VOC, .96 for clusters, and .99 for TW.
Long-term free recall. An LFR measure was administered to assess students’ long term knowledge about each lecture topic. Two days after viewing a videotape, students completed a LFR measure. To assess LFR, students were instructed to use the blank paper provided to write down as many facts, vocabulary, and lecture ideas as they could within a five-minute time period. Interrater reliability was assessed for the LFR measure and found to be .97 for CLP, .98 for TLP, and .98 for TW.

Comprehension test. Each student was administered a fifteen point multiple choice test that resulted in each student’s test score (TS). The test was developed from the content of the lecture and its’ accuracy was confirmed by the second rater who located and found the content pertaining to all of the questions and correct answers (i.e., 100%) in the lecture script. Using an answer key, an independent rater scored each test and one third were then rescored by a second rater that revealed .99 interrater reliability.

Strategic note-taking student questionnaire. One final measure was administered to students in the experimental group. The questionnaire was comprised of six statements with a four-point Likert-type scale rating from 1 (strongly disagree) to 4 (strongly agree). Specific items explored whether strategic-noting was helpful at recording better notes, remembering lecture information, and improving students’ science grade. In addition, one statement explored whether students preferred strategic note-taking over conventional note-taking and two open ended questions asked students to identify what they liked and disliked most about strategic note-taking.

Analysis
A Multivariate Analysis of Variance (MANOVA) was the preferred data analysis technique (Stevens, 2002) because more than one dependent variable was used to address the research questions. SPSS for Windows was used for the analyses and the criterion alpha level used for statistical significance was .01. In the case of MANOVA, the effect size reported is partial eta squared ($\eta^2_p$) and is used as an estimate of variance in the dependent variables. Moreover, partial eta squared is equivalent to eta squared when the total sample size is 50 or more (Stevens, 2002). This effect size may be interpreted according to the following guidelines provided by Cohen (1988): $\eta^2_p = .010$ is small, $\eta^2_p = .059$ is medium, and $\eta^2_p = .138$ is large.

Findings
The first two questions sought to answer whether middle school students who used strategic note-taking record more important lecture information (cued lecture points and vocabulary) and more clusters of related lecture points in
Boyle thinking strategically to record notes in content classes

their notes. The multivariate effect for strategic note-taking versus conventional note-taking on CLP, VOC, and clusters in students’ notes was significant with Wilks’ Λ = .84, F = 4.73 (3, 72), p < .01, h² = .17. Subsequent univariate tests indicated that strategic note-taking had a significant effect on CLP, F = 8.25 (1, 74), p < .01, h² = .10; VOC, F = 9.39 (1, 74), p < .01, h² = .11; and clusters, F = 12.81 (1, 74), p < .01, h² = .15. Students in the experimental group (see Table 1) who used strategic note-taking recorded more CLP in their notes (8.97) compared to students in the control group who used conventional note-taking (6.61). In addition, experimental students recorded more VOC in their notes (15.58) than did control students (10.11). Finally, students who used strategic note-taking recorded more clusters in their notes (4.13) than students who used conventional note-taking (2.05).

The next question sought to answer whether students who used strategic note-taking would record more TLP and TW in notes. The multivariate effect for strategic note-taking versus conventional note-taking on TLP and TW in notes was significant with Wilks’ Λ = .73, F = 13.71 (2, 73), p < .001, h² = .27. To further assess the effects of strategic note-taking on specific variables of student learning, univariate tests were used and found that strategic note-taking had a significant effect on TLP in notes, F = 22.01 (1, 74), p < .001, h² = .23; and TW for notes, F = 26.68 (1, 74), p < .001, h² = .27. As shown in Table 1 students in the experimental group outperformed control group students on both TLP, 23.08 versus 17.42, and TW, 132.32 versus 71.42, respectively.

The final question sought to answer whether middle school students who used strategic note-taking would perform better on the comprehension test and a long-term recall measure. The multivariate effect for strategic note-taking versus conventional note-taking for TS and LFR-TLP was significant with Wilks’ Λ = .85, F = 6.71 (2, 73), p < .01, h² = .16. Subsequent univariate tests indicated that strategic note-taking had significant effects on TS, F = 11.69 (1, 74), p < .01, h² = .14; and LTF-TLP, F = 8.50 (1, 74), p < .01, h² = .10. In terms of achievement results (see Table 1), students in the strategic note-taking group scored higher on the TS (11.21) than students in the control group (9.50). Likewise, on a delayed recall test, LTF, students in the experimental group recalled more lecture points, 4.82, than students in the control group, 3.21.

Finally, the results from the Strategic Note-taking Student Questionnaire indicated that students’ ratings were in the upper range for all of the items (mean range for all items = 3.03 to 3.59). The three items that received the highest mean ratings were: I liked strategic note-taking better than my previous note-taking (3.59); strategic-note-taking helped me to record bet-
thinking strategically to record notes in content classes

Boyle

Positive comments written by students included: the SN strategy helped me to record better notes, remember things better, and record more organized notes. Students dislikes included: they felt they could not write fast enough, they had difficulty finding the correct words to summarize, and the lecture was boring.

Discussion

The results of the study show that students who used SN were more successful than traditional note-takers at recording more notes and exhibited better performance on the comprehension measure and long-term recall measure. These results illustrate several important points about teaching students generative note-taking skills via strategic note-taking. First as shown on Table 1, students in the SN group, on average recorded 40% more total lecture points than students who used conventional note-taking. Overall, when compared to the script from the actual lecture that contained 60 lecture points, the experimental group on average recorded 38% of the total possible lecture points, while students in the control group only recorded on average 23% of the total lecture points. Interestingly, the control group's average is similar to other studies in which students used traditional note-taking skills to record (25%, Boyle, 2010; 25%, O’Donnell & Dansereau, 1993; 27.5% Risch & Kiewra, 1990) lecture information, with the experimental group exceeding previous K-12 intervention studies in terms of total lecture points (O’Donnell & Dansereau, 1993; Risch & Kiewra, 1990). Moreover, in terms of the number of words recorded, students who used SN recorded almost twice as many words, 132 words, when compared to control group students who recorded 71 words in their notes. The findings from the current study, support previous research that used instruction to teach generative note-taking skills to middle school students (Huffman & Spires, 1994; Peck & Hannafin, 1983) and extends this research by showing which specific components of note-taking (i.e., cued lecture points, vocabulary, and clustering ideas) help students improve their comprehension of the lecture.

Second, students who used SN performed better than students in the control group on two different measures of achievement: long term recall and test score. In terms of the recall measures, students who used strategic note-taking recalled more lecture points even on the delayed recall. Likewise, students who used SN performed better than students in the control group on the fifteen-point, multiple choice test. In essence, on average students who used SN earned a score of about 75% without the benefit of a study session.
Third, of importance was whether students who used SN would record more cued lecture points (i.e., important lecture information). The results show that students who used SN recorded more cued points than students using traditional note-taking. In terms of the percentage of total cued lecture points found in the script, students who used strategic note-taking recorded 53% of the total possible cued lecture points from the lecture, compared to 39% for students who used conventional note-taking. This represents an important finding because recording cued lecture points has been shown to boost achievement (Titsworth, 2001a; 2001b; Titsworth & Kiewra, 2004). In terms of the control group, their average of 39% of cued lecture points is similar to what was reported from another study (Boyle, 2010) in which middle school students who used traditional note-taking recorded approximately 42% of cued lecture points from that lecture. The findings from the current study extend the research base (Titsworth, 2004; Titsworth & Kiewra, 2004), especially in terms of examining cued lecture points recorded by middle school students in their notes and resulting increases in achievement when compared to conventional note-takers.

In terms of Mayer’s SOI Model of Learning (Mayer 1996), it appears that helping students select important lecture information (e.g., cued points and vocabulary) helped them to record more important lecture points in notes, resulting in them scoring higher on achievement measures. Likewise having students organize lecture points by clustering similar lecture points together and integrating the information with prior knowledge appears to help students record more and score higher on achievement measures. Likewise, in relation to working memory (WM), strategic note-taking appears to assist students by directing attention to important components of note-taking and encourages students to make connections between similar lecture information. Therefore, this study supports WM memory model and reduces work load on WM by providing support via the cued note-taking paper upon which students can record lecture notes. Other teacher supports, such as employing teacher cues (i.e., verbal or written) or interjecting pauses in the lecture would also help reduce the load on WM. The use of these types of supports reduce load on WM, particularly verbal WM, as well as help students direct important attentional resources toward the vital aspects of the lecture (Altemeier, Jones, Abbott & Berninger 2006; Berninger, Raskind, Richards, Abbott, & Stock, 2008).

In terms of extraneous variables, it is possible that students who were trained to use the SN strategy may have been accustomed to a videotaped lecture (via the training) and this may have given them an advantage over students in the control group. However, while this is possible, the fact that
control group subjects had scores that were similar to middle school students in other (i.e., no intervention) studies and the fact that the intervention group exhibited scores greater that scores from other (no intervention) studies, it appears that the effects on the experimental group were due to the intervention.

When interpreting the results of the current study, the reader should take into consideration its limitations. First, the current study used a single videotaped lecture that prevented teacher-student interactions that occur in typical face-to-face lectures. Future studies should examine a variety of lectures and should integrate “live” lectures in their studies. Second, the encoding effects of note-taking may have been limited because students were informed that neither their notes, nor the test, would be used toward their grades (Kobayashi, 2005). Hence, their performance on various recall measures and the test, might be indicative of limited cognitive effort on their part. Future research should explore other aspects of note-taking for middle school students in content area classrooms. In particular, research is needed that examines the effects of different note-taking techniques on delayed recall tests and other comprehension tests, examines the temporal demands and ways that students can compensate for these demands, and examines the effects of different types of lecture cues on the note-taking skills of middle school students.

Finally, note-taking techniques, such as strategic note-taking, can be successfully implemented into a content-area curriculum. Teachers who want to use these techniques in their classes should begin by developing their own set of notes using strategic note-taking. These notes will not only help the teacher stick to a script of the lecture, but these notes can also serve as model notes for students. After students have used strategic note-taking on their own, the teacher can hand out the model notes for students to compare to their own notes. In this way, the teacher is instructing students in note-taking skills while at the same time providing them with a complete set of notes for them to study from later. Moreover, although teachers may want to lecture to students to insure they are getting all of the content information, other activities should take place in class such as hands-on activities, discussions, student demonstrations of skills, and other forms of learning to reinforce concepts and skills from lectures. Teachers should also consider ways in which strategic note-taking might be adapted so that students can record notes from reading materials for research projects and papers.

No matter how technology changes, students will inevitably need to record notes in some shape or form so that they can have a permanent record of their classes. These notes will serve as study material as students prepare for tests and as reference material that students can access when they are
completing assignments on similar topics or skills. Note-taking is a valuable skill for students in middle and high school and will become an essential skill as students take on greater responsibility for their own learning in college and in their careers as professionals.

References


