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TEACHING STUDENTS TO USE TEXTBOOK-STUDY SYSTEMS

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The SQ3R method of textbook study has received widespread acceptance over the past 38 years. Not only is this system advocated and used extensively, at least 100 modifications for both general text study and specialized content field study have appeared in the literature. As a result of the acceptance of textbook study systems, a number of recommendations on how to teach the use of systems have appeared in methods texts. To a lesser degree, experts have discussed readiness factors for teaching students to use the textbook-study systems. This article will review the literature on: (1) prerequisite skills a pupil should develop prior to learning a textbook-study system, (2) teaching activities undertaken before introducing a system to a class, and (3) recommended procedures for teaching SQ3R. By carefully considering both readiness factors and instructional procedures related to textbook study systems, teachers can plan programs that support learners' successful mastery and long term use of these systems.

Prerequisite Skills

Several writers suggest that students must master certain skills before instruction with textbook-study systems can hope to be successful. Pauk (1979) points out that, though many teachers think a textbook study system is a magic door to mastery of expository materials, these systems do not provide the answer. Pauk says—"The lack—the missing link—is the omission of a cluster of skills that should be taught before the SQ3R is taught. The cluster deals with main ideas" (p. 87). The emphasis on identifying main ideas is a prerequisite to study systems, because the reader must extract the most important general concepts from each section of the text if the system is to operate properly. Consequently, Pauk advocates that practice sessions in locating both main ideas and supporting details and in clarifying structural patterns should precede any SQ3R instruction.

Trillin and associates (1980) also believes that instruction with SQ3R is appropriate only after students can select the essential ideas from a passage as well as synthesize the materials. Epstein (1968) puts forth an additional set of requisite skills: (1) reading by phrases, (2) recognizing and employing full and half signals, (3) understanding paragraph structure, and (4) identifying key words and phrases. Singer and Donlan (1980) take the issue one step further. They state that SQ3R should be taught only after students have learned how to read and learn from text through directed reading activities that emphasize and teach active

comprehension through formulating questions and then reading to answer them. Once these skills have been mastered, the use of a textbook-study system such as SQ3R can be taught. Given the similarities between the DRA and SQ3R (Dauzat & Dauzat, 1981, p. 232), the Singer and Donlan (1980) model appears quite logical.

Whether each of these prerequisite skills is necessary for successful mastery of SQ3R is, of course, subject to debate. However, Pauk (1979) points out a valid consideration. He suggests that when content field teachers or counselors are cast into the roles of reading specialists at either the secondary or the college level, there may be a tendency for them to latch on to well known techniques which have face validity. If the systems fail to promote better comprehension or test scores, the real problem may well be that the pupils were not ready to utilize a textbook-study system. Pauk's observation is particularly relevant in the case of underprepared college students. SQ3R will appear as a face-saving, adult-oriented study skill that is quite attuned to the rigors of college study. On the other hand, the remedial work that is actually required may be viewed as high school oriented, and therefore, undesirable or even degrading to the underprepared student. In striving to overcome negative attitudes which might still be lingering in the students, instructors may stress developmental rather than remedial content. Robinson (1950), however, noted the flaw in such a philosophy. He clearly believed that there is an important difference between providing students with remedial work and teaching them higher level skills such as SQ3R:

In remedial work, the teacher looks for the cause of a disability, and the student is aware of this goal—getting up to the average performance of those around him—but is embarrassed by his deficiency. In learning higher-level skills, on the other hand, the student is often not clear as to what he is trying to learn because even the best students around him usually do not have the skill; since his work is probably already fairly good, there may be little motivation to do better—indeed, there may be an unwillingness to do so well as to rise above the crowd. Thus there are two basic problems in teaching higher-level skills: making goals clear and motivating the students. (p. 574)

The implication, then, is that basic skills must be mastered before advanced study skills are introduced in the curriculum. One way to make the goals of instruction clear and to motivate students is first to make sure that the prerequisite skills are firmly in place, and then undertake a well planned set of preteaching or readiness activities.

Preteaching Textbook Study-Systems

Most students are routinely taught systems of study with little regard for their actual readiness for instruction. This situation is understandable since most methods texts do not tend to address the readiness issue. The issue then becomes what skills should the learner possess before undergoing training with a textbook study system? Skills and sequence charts in basal reading series might be consulted but any such recommendations are most

likely founded upon general tradition and opinion rather than a sound research basis. Hence, there are unanswered questions as to what readiness factors are of primary import in teaching SQ3R type systems to students.

The first such question pertains to the issue of when to introduce a unified study-skills system. They are often introduced at the middle school or junior high level. Tradition aside, there is no research which clearly points to an optimum age when instruction should begin. If the ability to read at a level of automatic response with a system is dependent upon developmental factors as much as requisite skills, then research should be conducted to determine the age or stage when the average student is ready to learn specific components or master an entire study system. Research might demonstrate that specific components of a system should be presented to students enrolled in different grades (e.g., surveying, eighth grade; questioning, ninth grade), with the entire system being given at an optimum age or developmental level.

In the same vein, another key to mastering SQ3R may lie in students' first mastering a less complex method of study. Teaching students to use less involved study methods may develop the foundation of necessary skills for mastering SQ3R. For instance, training students to outline or to map chapters (often a graphic form of outlining) might lead them to understand the activities and the rationale for the recitation and review steps of SQ3R. Likewise, training in underlining or highlighting followed by additional work with marginal gloss of summary statements or questions might be useful in promoting mastery of the question step in SQ3R. If research demonstrates that using easier study methods first is helpful, then study-skills specialists at high school or college levels might introduce selected techniques at the beginning of a semester and teach students how to use a unified textbook-study system during the latter part of the term.

A second readiness question pertains to the unique learning style of each student. The studies which attempt to determine the relationship of textbook-study systems to personality factors are at best inconclusive. As educators continue to demonstrate a growing interest in affective aspects of studying, and as more accurate instruments are developed to identify various styles of learning, further research should be undertaken to determine whether mastery and utilization of a particular study method is linked to personality type or learning style (e.g., introversion and outlining). If a correlation exists, it may be beneficial to use instruments such as the Meyers-Briggs Type Indicator (Meyers 1976) or the Learning Styles Inventory (Kolb, 1976) to match the student and method before instruction.

Although readiness factors are not generally addressed in the literature, there are several preteaching activities for introducing textbook-study systems. Hill (1979) suggests that the student's previous exposure to systems and mastery of any system must be measured before undertaking any additional work with textbook study systems. If the previously introduced method was not fully mastered, confusion may arise which leads to negative atti-

tudes toward study systems as a whole and the subsequent avoidance of their use. Hill therefore recommends that the instructor present an unknown system to the class rather than reintroducing one the students may have already encountered. In this way, any negative opinions formed about study systems in previous classes can be more effectively neutralized.

Teaching Textbook-Study Systems

Fry (1972) warns that students will usually not learn how to use textbook-study systems by lecture alone. He recommends that the instructor go beyond lectures by preparing practice exercises that are guided to completion through instructor-student interaction. These observations are supported, in part, by DeLong's (1948) research demonstrating that college students receiving extensive study-skills practice in a lab setting out-performed peers in conditions that did not include practice. Courtney (1965) and Dauzat and Dauzat (1981) also believe that students must be guided in learning how to use the steps of the system. To this end, a number of methods for teaching SQ3R-type systems have been described in the literature (Alvarez, Colwell, Mechon, & Basile, 1979; Cunningham, Cunningham, & Arthur, 1981; Donald, 1965; Forgan and Mangrum, 1976; Hill, 1979; Orlando, 1982; Paulson, 1982; Staton 1959, 1964; Tinker & McCullough, 1975). Each method varies in the procedures utilized and the time expended in the teaching of the system. However, these suggestions can be classified into three categories (Hill, 1979): part-whole, problem solving or whole-part, and group instruction mode.

For the part-whole method, each part of the system is taught independently over designated periods of time. When students have mastered the individual steps, the parts are integrated into a whole system. An acronym is then taught to the class (e.g., PQ4R, POINT, PQIRST, OROR) and followed by practice and application with meaningful materials. Robinson (1959, '61) basically supports the part-whole instructional paradigm. He states "In learning a skill such as the SQ3R method, instruction must be given on the separate steps before practice can be done using the whole skill" (1961, p. 33). In teaching the parts, he suggests that the teacher stress practice sessions in which the learners: (1) turn headings into questions, (2) refine their post-reading notetaking ability, and (3) review their notes by covering them and reciting. In combining the parts of the system, the students work both with passages provided by the teacher and with reading selections from the other courses in which they are enrolled. Informal measures can be employed to gauge the quality of notes and comprehension of passages. Robinson feels that a work rate of 150 words per minute serves as a minimum level of proficiency.

Wooster (1953) expands upon Robinson's recommendation with an eleven-part instructional plan that covers a four-to-five week period. After a brief survey of the system, the instructor teaches specific parts of the system. The latter parts of SQ3R are taught first (notetaking, reviewing, recite and review steps together, and reading followed by notetaking from memory). Next, the initial steps are introduced, still in reverse order (reading guided by

questions, questioning, combining the previous steps together in reading and surveying). Finally, all of the parts are ordered as a system, the SQ3R method of study is presented to the group and practice sessions are provided.

A second general teaching procedure summarized by Hill (1979) presents the system as a problem-solving method. Instruction is organized on a whole-part basis for the solution of a series of study problems. Initially, the teacher leads the pupils to see a personal need for a study system. This step is then followed by introducing (1) the overall system, (2) the acronym, and (3) the most significant aspects (i.e., nature and uses) of the ordered steps. The class is then guided through the procedure with a sample passage. Instruction and practice in the various components occur as a function of the students' needs or the suitability of each practice passage for teaching a step. Instruction is limited to the predetermined study problem. In order to develop greater flexibility and independence in the students' use of the system, additional study problems, each more complex and challenging, are assigned over a period of time.

In one variation of the whole-part method (Cunningham et al, 1981), students participate in an experiment designed to determine whether the textbook strategy is more effective than the commonly used read and reread strategy. Another variation of the whole-part method (Staton, 1959), encourages teachers to follow a specific plan outlined in the instructor's manual. Not only are the teacher's directions provided, but the anticipated student remarks are included as well. Thomas and Robinson (1974) also provide the instructor with detailed steps to follow in a similar procedure.

A third instructional method, somewhat related to the problem-solving method, presents the study system and its components to the students through a group-instructional mode. The pupils are guided through an unnamed system several times a week with the apparent objective of mastering the content of the assignment. When the students can accomplish this task, components of the system are practiced as independent activities. A lecture on the value of such systems may be presented. During this session, the class can evolve its own acronym for independent study. The general session may be followed by having students practice in pairs with class materials (Tinker & McCullough, 1975).

The method of instruction is only one facet of teaching a textbook-study system. The materials of instruction are of equal import, and they must be selected carefully regardless of the method. At first, students should encounter materials that are particularly well suited for use with a study system (Thomas & Robinson, 1974). Basile (1978) describes several pitfalls of selecting materials without due care. Epstein (1968) feels that the materials should be at or just below the students' independent reading levels and that the subject matter should present little or no vocabulary or conceptual difficulty. Initially, the students should learn the method in only one content field, and later, as they become more proficient with the system, the passages can

be more difficult and more diverse in subject matter. King, Stahl, & Brozo (in press) have suggested that students work with various college outline series, college catalogues, reprint series, and later, course textbooks.

Hill (1979), Maxwell (1980), and Thomas and Robinson (1974) all emphasize the importance of teaching pupils to be flexible in their use of textbook-study systems. Using the POINT system (Preview, Overview, Interpret, Note, Test) as an example, Hill (1979) suggests that pupils adapt it to meet their personal needs and current academic demands. This is accomplished simply by revising the acronym (e.g., POT, PON, PIT) according to the students' academic objective and then working through the variation to master the reading task. To help find the variation that functions best for them, students are encouraged to keep a chart of how long it takes to complete equivalent tasks with different variations. In addition, students should attempt to both objectively and subjectively monitor their success in meeting academic goals. Content field teachers can select a variation of a system and tailor it to the course content; however, the same basic system should be used throughout the institution.

Duration of treatment is another important instructional variable in teaching study systems. It does not appear any consensus has been reached on the amount of time required to teach the mastery of SQ3R-type systems. Donald (1965) recommends shortening general class lessons by five to seven minutes so that the new skills can be introduced to the students. Forgan and Mangrum (1976) suggest that instructors should spend three class periods teaching the system. During the following weeks, 15-minute sessions would be used in additional demonstrations and student practice. At least 20 follow-up sessions are recommended for the skill to be raised to the "automatic response level" (p. 246). Burmeister (1974) states that a content-field teacher should teach the system for the period of one month. At the conclusion of that time, another content-field teacher should assume responsibility in guiding the process. This should continue throughout the school year, rotating from subject to subject and teacher to teacher. One common point raised by each of these experts is that the system for studying should be taught with a series of lessons, rather than through one-time only lectures.

Inferences which can be drawn from the research on SQ3R seem to support the views of Burmeister (1974), Donald (1965), Forgan and Mangrum (1976), and Fry (1972), among others. The key to mastering any of the commonly advocated reading and study-skills systems seems to be intensive instruction with numerous opportunities for directed practice over an extended period of time (Stahl, 1983). Yet a recurring problem with the experiments on textbook-study systems is an insufficient training and testing period. In several cases (Garty, 1975; Hana, 1946; Holmes, 1972; McCormick, 1943; McNamara, 1977; Scappaticci, 1977; Willmore, 1966), the researchers delivered training programs of such a short duration and such limited intensity that mastery of the complicated and previously unknown study technique was improbable. In such cases the treatment groups undergoing training in the rather common

and uncomplicated approaches to study were at an unfair advantage. Other researchers (Foreman, 1982; Oakey, 1978) appear to have overcome the training issue, at least on the surface, by embedding the training component into a basic writing class and then working with the technique throughout the school term. Yet in these studies the time of direct presentation with a textbook-study system has tended to be limited and hence probably as unlikely to lead to mastery and internalization of a system as a short-term training program. In addition, the students may have viewed the study-skills training as tangential to other aspects of these basic writing courses.

Even though training procedures appear to be central to successfully teaching students to use a textbook-study system, to this date, there are no reports in the literature specifically addressing the effectiveness of the three general teaching procedures: part-whole, problem solving (whole-part), and group instruction. What is the optimum design, content, and duration of a training program that teaches pupils to (1) explain the system (2) master the individual steps of the system, (3) combine the steps into a unified whole, (4) automatically use the unified system in promoting active comprehension, and (5) monitor the aspects of the system which promote metacomprehension and ongoing review? It might be safely assumed from Delong's dissertation (1948) as well as the studies on textbook-study systems (see Stahl, 1983, for an analysis of 27 investigations) that neither blind training nor informal training (Brown, Campione, & Day, 1981) will lead to successful mastery of a textbook-system.

Posttraining Utilization of a Textbook-Study System

In addition to factors pertaining to a student's readiness to learn SQ3R and to the actual instructional methods used to present a system, post-training factors must be considered. Once students have completed the instructional components and the assigned activities designed to teach a textbook-study system, there is no guarantee that they will continue to use the unified system at a later date. While the observations of several noted authorities (Maxwell, 1980; Sheppard, 1964) have indicated that most students do not continue to use a system independently following training, there has never been a formal investigation to determine whether training with a textbook-study system may influence students' study habits or activities over an extended period of time. Even with the obvious difficulties associated with case studies, direct observations and self-reports, such a study would provide researchers and practitioners with valuable information. This research would suggest whether students (1) continue to use systems in their entirety, (2) adapt systems to fit personal preferences or course requirements, (3) utilize individual components as desired, or (4) disregard study systems in favor of less formal or tried-and-true methods of personal study. Two related questions which should be considered include: "Is any particular system more apt to be used on an independent basis than another system?" and "Does the nature of the training program or method influence the students' long-term acceptance and usage of a system?" In the long run, the posttraining factors are at the root of teaching

textbook-study systems. Success or failure of teaching methods is measured by students' use of systems after they are free of the instructor's influence or class assignments. Yet, it is at this very stage that research is sorely lacking.

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