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ABSTRACT

To ascertain the relevancy of behavioral psychology to those who are engaged in developmental work with college and adult students, this paper reviews articles found in several journals concerned with that discipline. The articles reviewed were chosen as representative of those pertaining to achieving academic success and are organized into five major categories: contingency management, including contracting; reading; academic performance; treatment of anxiety, including desensitization; and the use of behavioral procedures to predict success. Based on the literature review, the paper presents six conclusions: (1) learning is a contingent activity; (2) almost anyone can learn if the task is broken down into small enough steps; (3) anxiety can be a debilitating state for an individual; (4) the control of the environment in the form of contingency management, particularly contracting, can be used to help an individual accomplish his or her learning goals; (5) genuine concern for the individual is necessary if treatment is to be successful; and (6) investigations into the improvement of various forms of learning should be limited, for the moment, to results rather than processes. (FL)

Reading and Study Behavior: A Review of the Behavioral Literature with Conclusions and Implications for Developmental Educators

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A purpose of this article is to report on a review of several of the most highly respected journals in behavioral psychology. This was done in order to ascertain the relevancy of this discipline to people who are engaged in developmental work with college and adult students. A second purpose is to sensitize developmental learning personnel to other approaches that can be utilized when working with these students.

In our opinion, we have found far too many practitioners reluctant to go beyond their perceived level of expertise into areas that they often consider too esoteric for them. This attitude, we feel, is not only an underestimation of the practitioners intelligence and ability but may, in the long run, negatively affect those with whom they work.

We have tried, in this article, to summarize and, to some degree, synthesize those studies and articles that we have deemed significant and have practical application for helping students achieve their academic potential through the use of the exacting methods of behavioral technology. Although we do not pretend to be expert behaviorists, we hope that this review will stimulate the reader to explore some of the topics reviewed and possibly begin to utilize some methods which they may not presently be using in their treatment of students' learning difficulties.

In our review, others might have included some studies we did not review or deleted some we have included. Our selection of articles was not meant to be exhaustive; rather, we tried to choose articles that were representative of the constructs of interest as they pertain to achieving academic success. However, we do think that the conclusions drawn are reflective of the majority of other research findings in behavioral psychology relative to the achievement of academic success.

The research reviewed was organized into five major categories. 1) Contingency management, including contracting; 2) Reading; 3) Academic Performance; 4) Treatment of anxiety, including desensitization; and, 5) predicting success using behavioral procedures.

Contingency Management

Contingency management refers to the predetermined arrangement of reinforcers in the environment so that when the desired behavior is exhibited it will be reinforced, thus improving its chances of recurring. The following summary includes those studies that have dealt specifically with the independent variables utilized in contingency management.

Contingency management techniques were effective in producing higher course grades over lecture (McMichael & Corey, 1969) and no-treatment (Meyers, 1970; Nann & Weber, 1979). Premack (Gupten & LeBow, 1971) and self-regulated procedures (Broden, et. al., 1971; Lovitt & Curtis, 1964) facilitated modification of various kinds of behavior.

Reinforcers that have been shown to be effective include listening to the radio and free time (Lovitt, et. al., 1969), money (Meichenbaum, et. al., 1968), tokens (Clark, et. al., 1968; Wolf, et. al., 1968), tangible and social reinforcers (Chadwick, et. al., 1971; VanHouten, et. al., 1975; Alabisco, 1975; Kazdin & Geesey, 1977), teacher attention (Hall, et. al., 1968) and non-verbal teacher behavior (Kazdin & Klock, 1973). As reinforcers for students, high school teachers were less effective than grade school teachers (McCullough, 1972).

Contracting

Contracting refers to a formal written agreement concerning specific and measurable changes in behavior. The agreement can be made between 2 parties or with one's self. The contract may be developed by an entire class or by/with individual students. It is a form of contingency management.

Though contracts have been successfully utilized for improving academic performance (Bristol & Sloane, 1974; Schumaker, et. al., 1977), self-contracting appears to have mixed results; the results depend upon the therapist's input (Stuart & Lott, 1972) as well as the individual's perseverance in completing the contract (Passman, 1976; Harris & Bruner, 1971). The more a student contributes to the contract, the greater the probability it will be fulfilled. The teacher, however, must help structure the contract so as to make it workable.

Reading

Reading can be viewed as a process as well as a result of a process. Behaviorists have viewed reading achievement as a result which can be significantly modified and enhanced.

The literature reviewed indicates that reading can be improved through the use of a variety of techniques. Techniques such as prompting (Knapczyk & Livingston, 1974), study guides (Farnum & Brigham, 1978), timing (Rainwater & Ayllon, 1975),

skills therapy (Camp & VanDoorninck, 1971), programmed instruction (Gray, et. al., 1969), money and praise (Lahey, et. al., 1973), administered by a variety of people, including sub-professionals (Staats, et. al., 1970), parents (Ryback & Staats, 1972), and adult volunteers (Staats, et. al., 1967) can effect improvement in reading.

Another important finding (not surprising to reading experts) strongly suggests that dyslexia should be viewed as a function of a deficit in learning (Harris & Minke, 1978) rather than a physiological problem; therefore, it can be thought of as a condition that can be remediated contingent upon adequate instruction.

Academic Performance

As reading and study skills experts, we are sometimes called upon by others to offer suggestions for the improvement of instruction. Studies which have explored the various elements that contribute to improved student performance in the classroom have been quite successful in pointing out some often neglected pedagogy. For example, if lectures form the basis for tests, students attend them (Lloyd, et. al., 1972). Modeling positive learning behavior also seems to be important (Forehand & Yoder, 1974; Nam, 1980). Showing students how to study not only improves grades (Doctor, et. al., 1970) but improves their attitude toward study

as well (McReyonlds & Church, 1973). Also, these skills and attitudes can be transferred across specific academic disciplines as well as time (Reese & Filipczak, 1980).

Non-professional people can be used to help learning in the classroom (Johnson, et. al., 1972), including peers (Gaynor & Wolking, 1974) and peer influence (Evans & Oswalt, 1968).

Attending to the task to be learned is an obvious but often overlooked condition. Students need to focus on the problem to be solved or material to be learned. This specific focusing of student behavior has been brought about in a variety of ways (Lovitt, 1960; Semb, et. al., 1973; Johnson & O'Neill, 1973). Personalized instruction has been shown to be a successful technique (Sheppard & MacDermot, 1970); however, not all students will benefit by using this technique. It appears that students with average or poor academic records seem to be more successful with these materials than those of above average ability (Burn, et. al., 1972).

Treatment of Anxiety and Desensitization

Some of the more useful counseling techniques that have come out of the behavioral research are those that are concerned with the reduction or elimination of fears. Sufferers of debilitative anxiety have found that it could be brought under operant control. Research into treatment of anxiety has been going on at a rapid pace. The following summary reviews articles that re-

late to anxiety and the process of desensitization. We think these treatments can be generalized to students suffering from various forms of anxiety which are interferring with academic success.

Treatment of Anxiety

The literature surveyed points out a number of effective and some marginally effective techniques for treating a variety of specific fears. Among the effective treatment methods the use of modelling (Jaffee & Carlson, 1972), in-vivo and flooding (Kirsch, et. al., 1975), assertiveness training (Cautela, 1966), machines (Biglan, et. al., 1980; Donner, 1970), and/or didactic training in test preparation (Allen, 1972) show significant promise. Transcendental Meditation and Yoga have been shown to be effective for inducing relaxation (Boudreau, 1973) in clients for whom deep muscle relaxation was not effective.

Cues (Marchetti, et. al., 1977; Russell & Sipich, 1974) and covert positive reinforcement have been only marginally effective in treating specific anxieties (Bajtelsmit & Gushman, 1976).

Densensitization

Desensitization procedures can be administered by non-professionals (Fisher, 1977), machines (Migler & Wolpe, 1967; Wark, 1972) as well as self-administered (Donner & Guerney, 1969) with significant results, which can be maintained (Ramsay, et. al., 1966; Bruno & McCullough, 1974; Mitchell, et. al., 1975) and

transferred to real life (Rachman, 1966; Suinn, 1972).

Group desensitization and in-vivo desensitization have been effective treatments for phobias (Rachman, 1966; Cooke, 1966; Greist, et. al., 1980), academic anxiety (Cohen, 1969; Taylor, 1971; Lament & Sherman, 1971; Kondas, 1967; Mann & Rosenthal, 1969; Cornelio, et. al., 1981), and general anxiety (Mitchell & Ingham, 1970).

Verbal cues (Russell, et. al., 1975; Russell & Sipich, 1974) and drugs (Friedman, 1966), although drug use can be problematic (Reed, 1966), were effectively used to induce deep muscle relaxation.

Some studies have shown desensitization to be no more effective (but just as) in treating examination anxiety (Lament & Sherman, 1971; Crighton & Jehu, 1969) and math anxiety (Godell, 1976) and even less effective for certain other phobias (Agras, 1965; Anton, 1975) when compared to traditional counseling therapies.

Other findings suggest that abbreviated forms of desensitization can save time and energy with no loss of effectiveness (Rachman & Hodgson, 1967), and that long forgotten or repressed memories can be spontaneously recalled during desensitization (Thomson, 1972). This last finding may prove to be very useful when working with students who have a long history of academic failure.

Predicting Success with Behavior Therapy

Some of the reviewed studies have explored individual student characteristics that could be used as predictors of success using behavioral therapy. One study suggested that students who are successful using self-modification are more self-directed than those who are unsuccessful (Schallow, 1975). Additionally, it has been shown that different types of people respond differently to types of treatment. Predicting how they will respond can be made on the basis of their symptomatology (Morgenstern, et. al., 1965). Further, students are in agreement about which characteristics good and bad counselors exhibit and that the counselor's behavior can affect their expectations of a successful treatment program (Workman & Williams, 1979).

Conclusions

From the preceding review of the literature, the following conclusions and other insights have been drawn as to their relevance to working with students in academic situations.

1. Learning is seen as a contingent activity. A complex learning task is composed of many sub-skills. Appropriate rewards, consistent with the learner, should be administered contingent upon the satisfactory completion of each learning step. The learner must be seen as an individual with certain skills. It is upon

these skills that others are taught, and it is because of some of his/her previously learned behavior that certain, possibly more appropriate, skills cannot be taught until they are unlearned or altered. It is the responsibility of the teacher or counselor to ascertain what it is that is either inhibiting learning or what skills already in possession can be most effectively used in order to help the student accomplish his/her goals.

2. Almost anyone can learn if the task is broken down into small enough steps, providing that the proper reward is administered and that enough practice is given.
3. Anxiety can be a debilitating state for an individual. The procedural techniques that the teacher or counselor uses to eliminate it will vary with the problem and the individual. Desensitization, in its classical form, is possibly the most practical and effective approach to the elimination or amelioration of situation specific anxiety.
4. The control of the environment in the form of contingency management, and particularly contracting, can be used to help the individual accomplish his/her learning goals. To be success-

ful, the individual must significantly contribute to the development of the contracting or contingency management program. This means that the teacher or counselor may help determine the most effective structure but the learner should contribute to the specifics of the design.

5. If successful treatment, using the exacting procedures of behavioral management, is to occur, it needs to be combined with a large measure of genuine concern for the individual.
6. Investigations into the improvement of various forms of learning should be limited, at this point in time, to results rather than processes. Skinners' famous dictum of "observe" is, we believe, particularly relevant. We must first strive to discover if the various learning tasks can be brought under operant control before exploring more complex psychological issues. If we fail to make this analysis, we run the risk of confounding what may be a relatively simple issue. A good example of this is in the enormous result/process confusion which has surrounded dyslexia in reading.

Developmental studies with college and adult students is a relatively new discipline. It has been only recently that people

who work in these programs have either begun to recognize themselves or be recognized by others as comprising a respected and distinct academic discipline. Like most disciplines, especially new ones, we are very much in "process." As we develop our professional identities, we are also defining our discipline. It is our suggestion that many of the procedures of the behavioral psychologist can be reasonably incorporated as part of the property of the developmental educator.

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