DOCUMENT RESUME

ED 102 790 EC 071 478

AUTHOR Egner, Ann
TITLE The Challenge of Special Education in Regular High School Classrooms: Applications of the Behavioral Model.
PUB DATE 74
NOTE 19p.

EDRS PRICE MF-$0.76 HC-$1.58 PLUS POSTAGE
DESCRIPTORS *Behavioral Objectives; *Behavior Change; Exceptional Child Education; Learning Disabilities; Mathematics; Motivation; *Operant Conditioning; Positive Reinforcement; Program Descriptions; *Regular Class Placement; Secondary Education; *Underachievers; Vocational Education

ABSTRACT

Presented are three examples of the use of the behavior model to provide special education within regular high school classrooms. The first example describes a math teacher's use of minimum objectives and free-time reinforcement in individual contingency and team contingency situations to motivate students to complete assignments. It is explained that more students consistently completed their daily work when they could earn time off together rather than individual free time. Focused on in the second example is a vocational teacher's use of self-paced instructional units to teach math skills necessary for completion of course projects to students who would otherwise have been denied entry into the class. The third example recounts a team effort (including four teachers, a guidance counselor, and other personnel) to develop an individualized program for a 12-year-old boy with problems such as poor school attendance and disruptive behavior. Results of application of time out contingency for disruptive behavior, and free-time reinforcement for completed assignments are reported to include positive changes in the boy's attitude toward school, and improvement of reading skills by two grade levels in 65 days. (LS)

THE CHALLENGE OF SPECIAL EDUCATION IN REGULAR HIGH SCHOOL CLASSROOMS: APPLICATIONS OF THE BEHAVIORAL MODEL

Submitted by:

Ann Egner
Assistant Professor
Special Education Area
University of Vermont
Burlington, Vermont

1973-1974

THE CHALLENGE OF SPECIAL EDUCATION IN REGULAR HIGH SCHOOL CLASSROOMS: APPLICATIONS OF THE BEHAVIORAL MODEL

by

Ann Egner*

The consulting teacher approach to providing special education within regular high school classrooms was initiated in Vermont in 1972. Only 5% of handicapped teenagers in Vermont schools are actually receiving special services. Over 40 high school teachers have been helping us implement the behavioral model of education so that handicapped teenagers can accelerate their progress. Three local high schools have participated by sending teachers to summer school. They are on tuition free fellowships and they agree to enroll in follow-up courses during the year. The superintendents, department chairmen and building principals of the participating schools agree to provide attention and support for the teachers.

*Based on a paper presented at Applied Behaviorism 74: 5th Annual Conference on Behavior Modification, Moncton, New Brunswick, May 30. The results reported herein were made possible in part through a grant from the Division of Special Educational and Pupil Personnel Services of the Vermont State Department of Education. Ann Egner was the Burlington consultant to the Secondary Special Education Project. Special thanks are extended to fellow project colleagues Phyllis Paolucci, Margritte Graves, Hugh McKenzie, and C. Drussel Coffin.

I. Team vs. Individual Contingencies in a Math Class (Getsie, Bean and Egner, 1973).

First I'd like to take you to Hunt Junior High School in the north end section of Burlington, Vermont's largest city. Over 650 students in grades 7, 8 and 9 attend classes from a staff of 34 teachers.

Mr. David Bean, one of the five math teachers in the school, had 5 classes a day, meeting about 110 students a day. He developed minimum objectives in math and prepared 15 basic units for the students. He had one preparation period during which we consulted . The school principal arranged for him to have an aide who scored and recorded student papers and helped to graph the results.

Mr. Bean was concerned about the large number of students who were not completing assignments and thus were failing to master their minimum math objectives for the school year.

He established this enabling objective:

Given a 35 minute work period during the daily 45 minute math class	each student will complete a math assignment	at least once a day

BASELINE SYSTEM INDIVIDUAL CONTINGENCY

Assignments were made from various textbooks and teacher made worksheets. They were directly related to the specific instructional objectives of his math course. When a student scored 80-100 on 2 daily assignments, he went on to working on the next instruc-

tional objective. One of our promises is to use existing reinforcers in the class room.

Based on the reading he had done, Mr. Bean wanted to establish the most reinforcing environment possible. He created a game corner...and a special individual contingency to reinforce completion. Any student who finished at least one assignment within the 35 minute work time, earned the remaining class time free for math games in the game corner.

At the end of each math period, the teacher recorded the work completed by each student. He tallied the total number of students with INCOMPLETE assignments. [illegible], more than 50% of each class consistently failed to complete their daily work.

TEAM CONTINGENCY

Each class was then divided into teams of 4 or 5 teenagers. Two students with high completion rates were teamed with two students with low completion rates. Each team elected a recorder and agreed on the following team contingency.

WHEN EVERY TEAM MEMBER COMPLETED AT LEAST ONE DAILY ASSIGNMENT, THE TEAM EARNED 10 MINUTES TO BE CUMULATED TOWARD A FREE MATH CLASS. A BONUS OF 5 EXTRA MINUTES COULD BE EARNED FOR EACH ASSIGNMENT COMPLETED ABOVE THE MINIMUM.

When the team cumulated 55 minutes, they checked with the teacher.

Figure 1 shows the effects of the team contingency. For both classes, MORE STUDENTS CONSISTENTLY COMPLETED THEIR DAILY WORK WHEN THEY COULD EARN TIME OFF TOGETHER RATHER THAN INDIVIDUAL FREE TIME.

- - - - - - - - - - - - - - - - - -

Figure 1 goes about here

- - - - - - - - - - - - - - - - - -

Most important however, was the effect of the program on individuals. Stan, a twelve year old had a very low completion rate; Todd a zero rate--and had only a third grade mastery of math skills.

- - - - - - - - - - - - - - - - - -

Figure 2 goes about here

- - - - - - - - - - - - - - - - - -

Figure 2 shows that both boys' rates dramatically improved under the team contingencies.

Why should team contingency be more effective? Perhaps it was the opportunity to be with Peer group? The important thing is the teacher responded to his data - and changed procedures to accelerate student progress.

II. Individualized Instruction in a Power Mechanics Class (Rand and Carter, 1974)

Next I'd like to take you to the Burlington Vocational Center... to a large machine shop. Metals I takes place in a shop area that is 50 ft. X 50 ft.

Mr. Rand is the instructor. The heavy expensive

machines and intense teacher attention required for supervision of the equipment make it difficult to oversee all the students. For example, one machine costs over $32,000. Last semester, 14 young men enrolled in the course. Mr. Rand approached the resource room for remedial help in increasing their skills with fractions and decimals rather than use the typical policy of excluding them from his course for math deficiency. The resource teacher, Evie Carter, had taken our Task Analysis summer course. Mrs. Carter asked Mr. Rand about his typical teaching procedures.

At one end of the room was a locked tool center from which students sign out tools at the beginning of each period and checked them in at the end of each class. The teacher's office was adjacent to the tool center and the learning carrel so students conferred with the teacher there, or at some other point in the shop.

Mr. Rand had two basic educational goals for the math course.

Goal #1. To complete a step punch within the tolerances described in the instructional package blueprint. This required skill in using decimals and fractions.

Goal #2. To follow a series of instructions and record progress on an operation sheet. You see, Mr. Rand had already found success in breaking down a task into component parts. We asked him to describe the math for each step.

For each step he developed a performance based test. During the first week of school each student's entry level performance was individually observed and recorded on the following tasks:

1. Working with decimals and fractions
2. Reading a six inch ruler
3. Reading a micrometer and naming other tools
4. Counting and sorting 3 kinds of shop items
5. Describing a specified material through a color coded chart and recording the identification on the operation sheet
6. Setting a coordinate plate using decimals to 3 decimal laces

Results of the entry level test showed that 11 of the 14 students scored below 90% on the decimal pretest. Using the Sullivan Basic Math Decimals Book #7, students were given assignments to cover areas in which errors were made on the pre-test. When the student completed the related post tests with 90%-100% accuracy, he no longer received additional math work.

For each of the 13 steps, the teacher developed self-paced instructional units with related filmloops, textbook readings, and other written explanations. All activities were designed to help students complete the step punch.

Students were given each unit of the series contingent upon accurate completion of the previous unit. Each student kept a record of the completed units. Each Friday the teacher recorded the number of completed steps for each student.

Students were free to work individually or to help each other; or to meet for larger group instruction from the teacher and for one-to-one instruction from the teacher.

Students who finished the project early could make a project of their own choice. For example, one student made some chess

men for a chess set; another made a small cannon.

Individual progress ranged from projects being completed in 3 weeks to 6 students still working on it after 7 weeks. Fig. 3 shows th

Figure 3 goes about here

of the 11 students who finished the math section, 8 completed the remedial assignment. Of the 8 students who completed the remedial math instruction all have completed Step 8 or better. The three who did not are below Step 4. All the data isn't in as yet - individual post tests are scheduled for next week but Mr. Rand is already planning to rewrite Step 5 since so many students took more than 3 weeks to complete it!

Mr. Rand felt he was able to spend more time with individual problems and assistance and less time repeating instructions than in the previous semester. Furthermore, he felt he demonstrated that necessary math skills instructions can be reinforced occasionally and concurrently as a part of Metals I so that students need not be denied entry into this class because of math deficiency.

III. An Interagency Effort to Individualize Instruction for An Adjudicated Youth (Egner, Babic, Kemel, Cross, Epifanio, Hempton, Leach, Lehouiller, Powell and Lates, 1974)

Now I'd like to take you back to Hunt Junior High where 10 people worked to individualize the school environment. Four teachers, a guidance counselor, school nurse, assistant principal, a teaching aide, a volunteer worker for the probation office and a consulting teacher participated.

J. was a 12 year old 7th grader...the second oldest of 6 children in a family with multiple problems....child neglect, extreme poverty, poor health, inadequate education. J. had poor eyesight and a skin condition (Ichthyosis) which caused scaly patches over his body. These conditions were corrected only through the efforts of the school nurse. During his first 6 weeks of junior high school, J. consistently skipped classes, threatened his teachers, smoked in school, and was involved in several very disruptive fights with other students. Finally J. was cited for shoplifting... later delinquency petitions were filed and he was adjudicated by the juvenile court.

The first step towards developing an individualized program was taken by the school guidance counselor and assistant principal. J.'s schedule was adjusted so that he attended three classes at the same time each day and then checked with the principal at noon when he was dismissed.

A careful record was kept of his attendance, task completion, and disruptive behaviors in order to evaluate the effects of the school's efforts to individualize J.'s program.

Figure 4 goes here

In order to enable J. to achieve success, the teachers developed these basic objectives for academic and social interactions:

Figure 5 and 6 goes here

TWO BASIC PRINCIPLES OF REINFORCEMENT WERE IMPLEMENTED.

I. TIME OUT CONTINGENCY FOR DISRUPTIVE BEHAVIORS. Any time J. smoked, physically aggressed, or left class without permission, the aide escorted him to the assistant principal's office, set a timer for 5 minutes, left him alone until the bell rang, and escorted him back to class.

J's DISRUPTIVE INTERACTIONS DECREASED IN FREQUENCY INTENSITY AND DURATION, ranging from 0 to 5 during the first 15 days of the program and averaged only .2 during the remaining 50 days he attended school.

II. PREMACK PRINCIPLE FOR TASK COMPLETION. Immediately upon completion of an assigned task, J. was permitted to choose from a list of Free tasks such as leaving class for a drink, helping the aide staple papers, listening to assignments on the tape recorder, playing with magnets, etc. Each teacher filled out a daily schedule as shown in Figure 7.

Figure 7 goes about here

Each day, assignments were listed for 10 to 15 minute sessions J. set a timer. When the bell rang, he marked a + if it was completed and the teacher or aide verified it. He then selected a free time task, set the timer for the designated time. When the bell rang he went on to the next study task.

If the assignment was incomplete, he simply set the timer again and continued until it was finished. SUCCESSIVE APPROXIMATIONS included gradually increasing the amount of work in relation to free time.

- - - - - - - - - - - - - - - -

Figure 8 goes here

- - - - - - - - - - - - - - - -

Work time increased until he had NO free time. In addition he was permitted to attend one more class (science), work in the cafeteria, and stay for lunch with his friends. During reading class he learned science words and during language arts class he listened to science lessons on tape. THUS INADVERTENTLY ALL FREE TIME WAS REMOVED.

The effects of such total school involvement cannot be adequately reflected in graphs. However, this graph shows that

- - - - - - - - - - - - - - - -

Figure 9 goes here

- - - - - - - - - - - - - - - -

J's task completion during reading and language arts assured the teachers that their continued efforts to provide meaningful free time <u>was an essential and important part of individualizing</u>

instruction. J's ATTITUDE CHANGED MARKEDLY DURING NO FREE TIME. He returned to his former practices of being late or absent from school, unfriendly to his teachers, apathetic, and negative about school. WITH FREE TIME he again attended school and returned to a cooperative, friendly, even charming interaction with his teachers.

- - - - - - - - - - - - - - - - -

Figure 10 goes about here

- - - - - - - - - - - - - - - - -

Figure 10 shows the effects of the program on J.'s attendance at school. When he moved out of the district into a new junior high school, he again became truant and aggressive to his peers.

WHAT IS THE VALUE OF SUCH A PROGRAM?

First the opportunity for a high school staff to work as a team showed that they could respond to the individual needs of a student in trouble...THIS EXPERIENCE indicated that it IS possible to individualize a junior high school...and that it is worth all the hard work, EVEN IF ONLY FOR 65 DAYS.

Most valuable, the teachers were directly and immediately reinforced for their efforts. They saw that J. COULD LEARN..AND LEARN QUICKLY. He dramatically improved his reading skills a total of two grade levels in only 65 daily reading lessons. His basic writing skills improved to the extent that he wrote notes to his teachers...and mother.

His social interactions with adults also improved...he began to look adults straight in the eye...smile and greet teachers in the hall. And he also learned to give friendly greetings to

peers.

He developed a positive attitude towards school. Many mornings he arrived 30 to 40 minutes early just to have coffee with his teachers. He also attended youth activities on several evenings during the school year.

For those 65 days, at least, his repertoire was ENRICHED & EXPANDED

It may seem that Vermont high school teachers are really into something different. But actually there isn't too much new in our educational system. We still have schools...but at the high school level, we do NOT have little red school houses but large complex educational centers.

We still have teenagers : teenagers who work, teenagers who goof off!

We still have teachers, too...teachers who find themselves directing kids who goof off...and redirecting kids who goof off... as well as teachers who attend to kids who are working.

We still have the familiar tools of the teaching trade: the ANTECEDENT STIMULI such as the teacher who stands in the front of the room, the overhead projector, the pencils, papers and textbooks.

What we do have in Vermont you have right here in Moncton and other parts of Canada. Teachers who like many reinforcers. They like to observe and measure student progress. They are "turned on" to professional development. They are reinforced by their students' learning. We have in Vermont...as you have in your schools, one of the most important tools of teaching: REINFORCERS.

When the behavioral model of education is implemented at the high school level, it becomes very difficult to tell who is the teacher and who is the learner. It's hard to tell who is reinforcing whom because both the teacher and the learner are mutually turned on!

References

Egner, A., Babic, L., Kemel, D., Cross, J., Epifanio, Hampton, M., Leach, D., Lehouiller C., Powell, H. and Lates, R.V. Individualizing a junior high school environment. Unpublished case study report, Hunt Junior High School, Burlington, Vermont, 1973.

Getsie, R., Bean, D., and Egner, A. The effects of individual and group contingencies on completion of daily math assignments. Unpublished case study report. Hunt Junior High School, Burlington, Vermont, 1973.

Rand, E. and Carter, E. Individualized instruction in a power mechanics class, or Math with meaning. Paper presented at 5th Annual Convention of Behavioral Educators, Montpelier, Vermont, May, 1974.

FIGURE CAPTIONS

Fig. 1. The teacher's re cord of incomplete assignments for each class during each teaching/learning procedure.

Fig. 2. The teacher's record of assignment completion for two boys during each teaching/learning procedure.

Fig. 3. The teacher's record of project completion. The arrow indicates when the student finished remedial math assignments.

Fig. 4. The measures kept by each teacher in order to evaluate intervention procedures.

Fig. 5. The objective for appropriate social interactions.

Fig. 6. The objective for academic interactions.

Fig. 7. The daily assignment sheet kept by each teacher.

Fig. 8. Successive approximations of decreasing free time in relation to work time.

Fig. 9. The effects of contingent free time on assignment completion during reading and language arts.

Fig. 10. The effects of Individualized Schedule and Contingent FreeTime on attendance at school. At a, the court declared J. a delinquent and released him in the custody of his mother. In April, he moved to a new school where the Total Program could not be implemented.

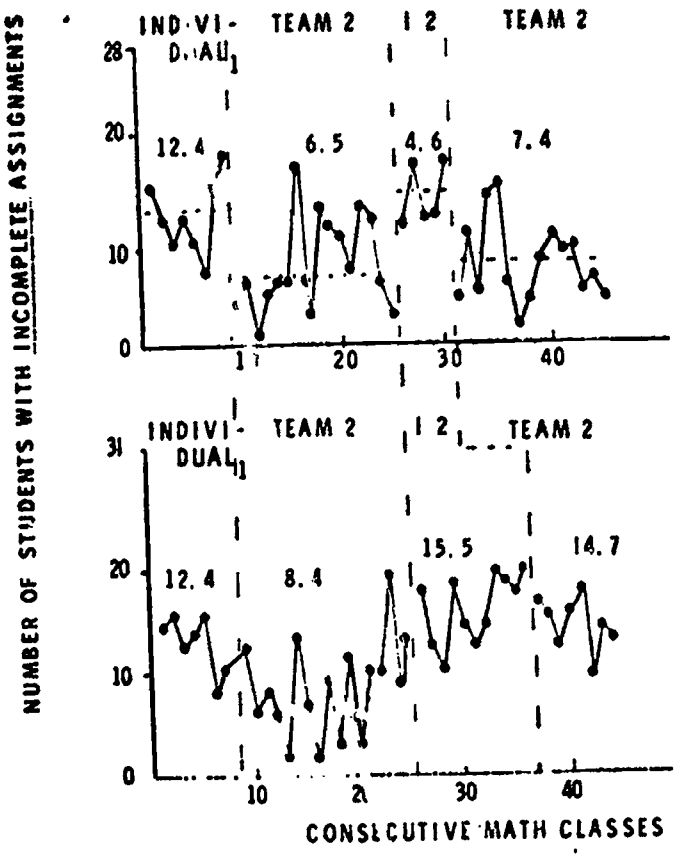


FIGURE 1

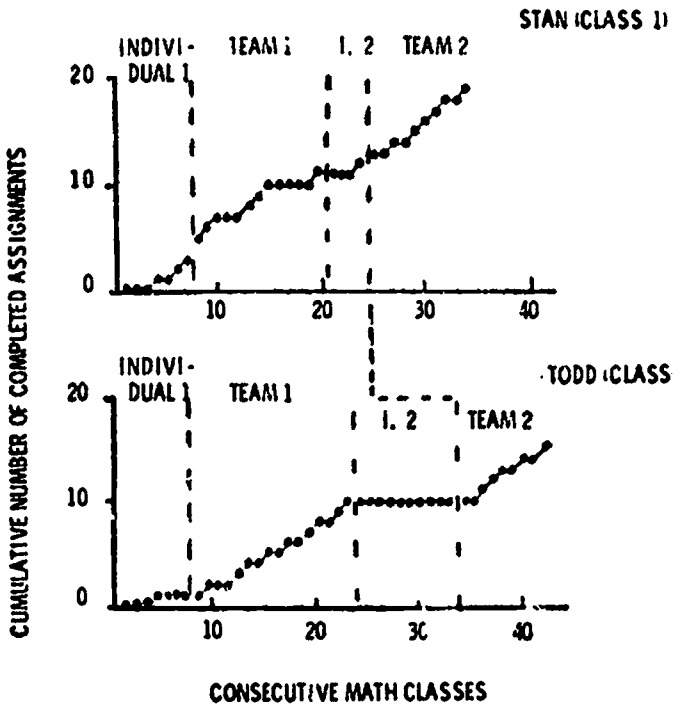


FIGURE 2

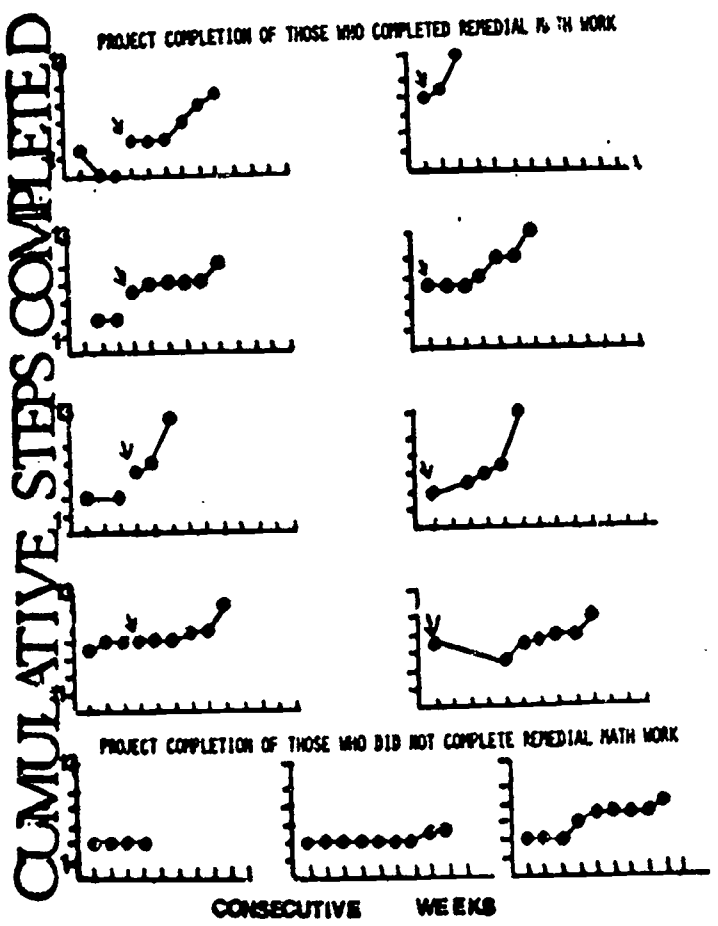


FIGURE 4

MEASUREMENT AND RELIABILITY PROCEDURES

1. ATTENDANCE. EACH TEACHER NOTED WHETHER BRETT ATTEND- CLASS. THE SCHOOL SECRETARY ALSO KEPT A RECORD OF ATTENDANCE.

2. TASK COMPLETION. THE TEACHER ASSIGNED A NUMBER OF TASKS AND COUNTED THE NUMBER COMPLETED EACH DAY DURING EACH CLASS.

   DISRUPTIONS. THE TEACHER TALLIED EACH OCCASION OF DISRUPTIVE BEHAVIOR.

FIGURE 4

INDIVIDUALIZED INSTRUCTIONAL OBJECTIVE

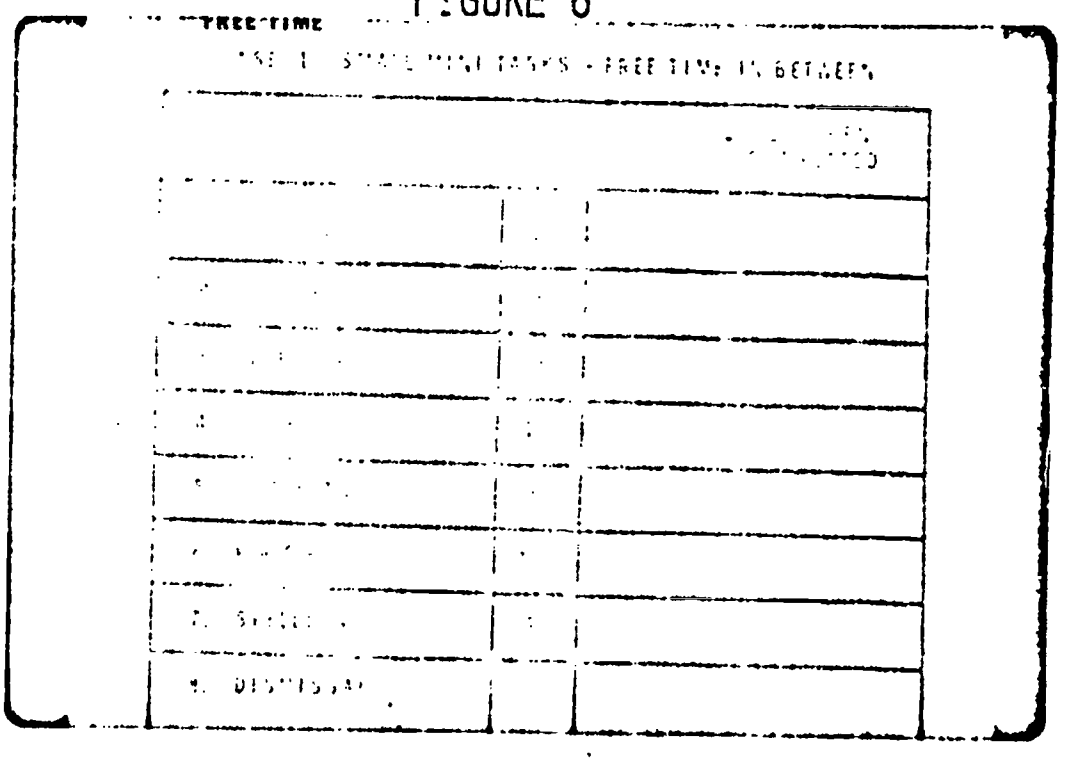
IVEN A DAILY EADING PERIOD :00-10:00) AND DAILY LAN- JAGE ARTS RIOD (10:00-11:00),	THE STUDENT WILL CONDUCT HIMSELF APPROPRIATELY	SUCH THAT THERE ARE NO OCCASIONS OF 1) SMOKING IN CLASS; 2) LOUD DISRUPTIVE NOISES; 3) PHYSICAL AGGRESSION; 4) LEAVING THE CLASS-ROOM WITHOUT PERMISSION.

FIGURE 5

INDIVIDUALIZED INSTRUCTIONAL OBJECTIVE

GIVEN A DAILY READING PERIOD 9:00-10:00) AND DAILY LAN- UAGE ARTS ERIOD (10:00-11:00),	THE STUDENT WILL COMPLETE ASSIGNED TASKS	100% OF THE TIME.

FIGURE 6



SUCCESSIVE APPROXIMATIONS

DAYS	WORK TIME	FREE TIME
1-8	[illegible]	25
9-35	[illegible]	20
36-37	[illegible]	15
38-45	[illegible]	5
46-57	[illegible]	0
58-65	[illegible]	5

FIGURE 8

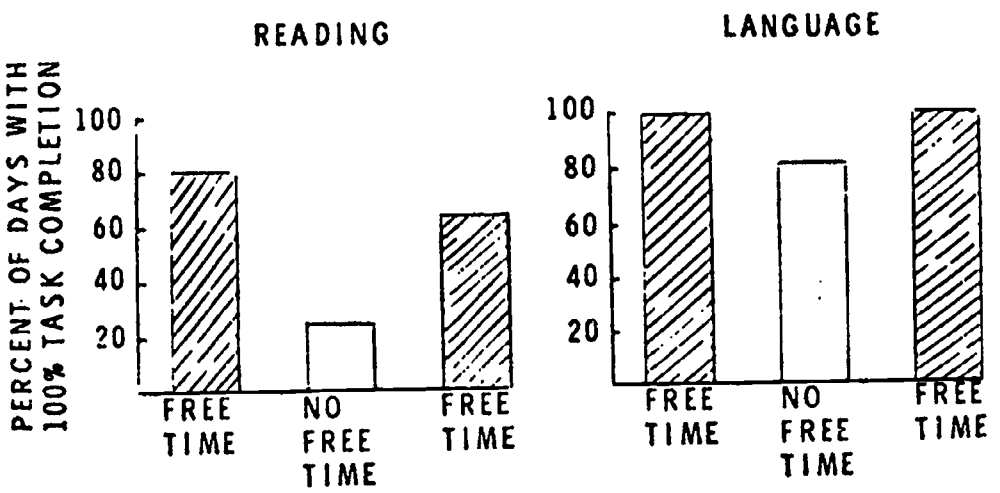


FIGURE 9