In his discussion of the historical development of holonomic brain theory Pribram (1986) stated that all "the evidence is coming. Not only at the neuropsychological level, but at the psychophysical and psychological level, the behavioural level and in quantum physics (there) is a real paradigm shift away from Euclidean geometry that allows for crazy things, even like hypnosis to be so (p.73)." To many scientists this may appear to be very "soft science" but Pribram appears to believes that the distinction between soft and hard science is not as relevant any more as he sees many fields to be moving in the same direction and the final proof of brain theory will be "mathematically so precise that...there is just no stopping it."

This study fits into the psychological and behavioural levels that Pribram was talking about. When I started this type of research I had a notion that if a person had some control over their own behaviour and they were able to be in command of their state of consciousness and never be out of control, they would be operating at a rhythm which would be optimal for them. It seemed that when teachers and children in the classroom were being antisocial and unloving to each other, continuing to seek revenge in a never ending cycle, they were not only unable to deal effectively with each other, worse than that, perhaps they were not able to really control their own behaviour. By gaining the skill to relax at will and thereby alter the state of consciousness, both students and teachers can to some extent gain more control over their own behaviour. It was the theory that not only would the fact of the control of their own body and behaviour be a positive force but also that the knowledge, derived
from consistent results over a period of time, that they had this control would gradually become even more powerful as it affected their self-concept and self-esteem. Theoretically, the effect of their new skill would then permeate and generalize to many related and unrelated areas of behaviour and relationships.

An important part of the theory was that all negative, violent, and antisocial behaviour took place when a person was "out of rhythm" and behaving in response to the external environment. Sometimes the environment would be arranged to suit them and sometimes it would not. When it did not they would have great potential to be destructive to themselves or others or both; and when perchance it did suit them, they would behave more positively and constructively. If they had the skill to relax and control the state of their own mind, so says the theory, the potential for prosocial behaviour is greatly increased. At least, with this skill and the awareness of the skill, a person is in the position to be able to decide whether or not to behave one way or another.

An early practitioner who used hypnosis to cure people, Emile CouÇ (1923), found that all suggestion, whether used with hypnosis or not, was essentially auto-suggestion. As he increased in confidence and competence, he found that he had considerable effect merely by making suggestions. Stanton (1985) reported the reduction of stress levels compared to controls following relaxation skill development through imagery. In his discussion of the use of the unconscious in the classroom Neville (1989) emphasises the value of relaxation and suggestions for learning and particularly for motivation and guidance in the classroom. Jackson (1989) also emphasises the effect and value of self-hypnosis for these and other purposes of personal development.

The current study is looking at the effects of relaxation training with suggestions on children's levels of learning mathematics and reading, self-esteem, locus of control, and physical indicators of excessive stress. The final data are still being collected so this paper will be concerned with a description of the method, some anecdotal accounts of effects which have been related by principals, teachers, and children, and results of some smaller
studies. This study is a small pilot study attempting to judge the value of using relaxation as part of the curriculum in Australian schools.

METHOD

Subjects   Approximately 800 students and their teachers, from grades prep to six, are currently serving as subjects in a study to determine the effects of daily sessions of relaxation on their academic performance in mathematics and reading, self-esteem, locus of control, and physical symptoms of stress in students as well as the physical symptoms of stress in teachers. Approximately 600 students are serving as experimental subjects and 200 as the control. We had started out with more than this but due to the time demands of the daily relaxation session, several teachers and schools decided not to take part.

Procedure. Previous studies of the effects of relaxation have mainly used either very small samples, college aged subjects, or students in schools overseas. Training of teachers was carried out in two sessions of less than one hour each; during these sessions the teachers were introduced to the relaxation methods which are being used and the assessment instruments. Further instruction was offered to the teachers but it was generally found that the two sessions were sufficient for their needs.

Each teacher was provided a set of tapes with 14 tracks, a manual with directions for tape use and a set of tape scripts. Each of the tracks on the tapes contained the voice of the experimenter and relaxing music. The skill in each track builds on the previous one to ensure optimal skill in relaxation.

Teachers were asked to attempt to present the relaxation tape once a day if possible but through the first 8 weeks of treatment teachers reported varied application of the independent variable. The average number of times a class was relaxing in class was three per week. Some classes had only recently started due to staff illness, malfunctioning tapes, and tape players. Most classes conducted the relaxation session in the first ten minutes after lunch although some sessions followed morning recess or occurred during the first hour of the day. Most teachers were content to play the tape, and
one teacher read the script herself with a background of soothing music.

Pre-test data were collected by use of modified Schleiger Mathematics Tests for each grade level, the teachers' estimations of the students' reading profile, the Coopersmith Self Esteem Inventory, the Nowicki & Strickland Locus of Control Scale for Children, and the Physical Stress Indicator Checklist (PSIC) which was specifically developed for the project. In the development of the 15 items of the PSIC, forty children and 10 adults had been asked about noticeable effects on their bodies when they were under too much stress. Teachers administered the scales according to uniform instructions. Post-test data on the five variables are presently being collected. Teachers are also being interviewed about the effects of the relaxation program on themselves and their classes.

RESULTS

At this early writing one Grade Four teacher has reported that a boy who used to be a constant annoyance to her and the rest of the grade throughout the day has shown a dramatic improvement in his attentiveness and pleasantness in relaxation sessions and often for several class periods that follow. On an anecdotal level, it appears that those teachers who, with their classes, have made a commitment to play the relaxation tape each day of the week have generally been the classes in which the most positive effects have been demonstrated. The effects in classes in which teachers have shown a lack of commitment, the effects in the early stages also appeared limited with teachers pulling out of the study.

Between the third and fifth week, was a critical period in which children apparently started to realize the positive aspects of the skill which they were acquiring. A supportive cohesive environment in the classroom was important if this was to become part of the life of the class. From about the fifth week stories began to come back to the teachers about how students were
using
the relaxation skill at home to deal with stressful situations with
siblings
and parents. Some students even reported training their parents in use of
relaxation methods with positive results.

In the following studies the relaxation program and tapes used were
identical
to those used in the larger study but dependent variables were limited to
shorter time periods and more readily available data such as disruptive and
antisocial behaviour.

GRADE SIX

One particularly troublesome Grade Six child had had a miserable history in
the
school since Prep Grade. His teachers state that he:

1. called out to others repeatedly during lessons
2. was
annoying and disruptive
of others at their work.
3. made loud outbursts.
4. failed to
complete written
work.
5. was absent on project and assignment due days
6. disrupted others' play
whether included or not.
7. made empty apologies when pressed by
teachers.
8. had a nervous twitch in his eye /head.

From the beginning of the project, the boy tried his hardest to disrupt his
classmates during the relaxation session. After 2 weeks they were able to
tune
him out and began to ignore him. He persisted with his disruption tactics
but
after 5 weeks he was participating fully in relaxation sessions, completing
work and proudly taking it home to show mother (single parent).

This child is reading at about the Grade 2/3 level and when reading to the
teacher would develop a cough when difficult words were encountered. He
improved to be able to work for ten minutes after 6 weeks (September) and
25
minutes plus extra requested in October. Over the years teachers reported
having tried many variations of behaviour modification and contingency
contracts, grouping variations and personal responsibility. Since the
introduction of the relaxation program in the class this boy has been a lot
calmer and his nervous twitch is much less pronounced and quite infrequent.
On
a recent camp he was reported by teachers to have been well behaved
throughout.
Other members of the class were also noted by the teacher to have improved their behaviour among themselves. One girl who had a history of loud, aggressive behaviour was now much quieter and pleasant with her peers. Others in the class claim that they use their new skills to ignore annoying siblings, to relax when agitated, to get to sleep more easily and to settle down after an asthma attack. The teacher remarked that the usual aggression and tension which are usually evident in a Grade 6 class in the final term of the year have not been evident this year. The teacher is convinced that the relaxation program in the last part of the year has contributed greatly to the students improved behaviour and general confidence. She believes that relaxation training should be included as part of the school curriculum from the earliest grades.

PREP/GRADE ONE

In a Prep/Grade One class the teacher counted disruptive behaviours for 5 days. She then randomly assigned students to an experimental or control group. For the 10 days the experimental group received instruction in progressive physical relaxation. For the last five days of the treatment period disruptive behaviour was recorded. After one week disruptions were again counted to test for skill retention. It could be anticipated that the evidence that the teacher is making marks on a notebook everytime there is a disruption would contribute to the reduction in disruption. It did somewhat but not sufficiently to mask the effect of the treatment.

The control group's disruptions decreased from 312 to 238 and 246, i.e. reductions to 76% and 78% of the baseline data. The experimental group decreased from 162 disruptions to 98 and 54 which were reductions to 60% and 33% of the baseline scores. These data strongly support the contention that relaxation training reduces the incidence of disruptive behaviour in the classroom. The data also offer evidence for the positive effect of mere behavior counting.
A study which bears somewhat on the theory was conducted by recording the active and passive antisocial and prosocial behaviour of the five most disruptive students in a class of thirty children. Over a period of seven weeks students listened to a relaxation tape for 10 minutes a day immediately after lunch. Gradually the incidences of kicking and biting decreased and the helping and volunteering began. The data have a strong clear trend and support the theory that increased ability and use of relaxation increases the likelihood of prosocial behaviour while decreasing antisocial behaviour.

The results of the small studies may be an indication of the effects which will be found in the larger study since the same experimental condition was used although with some variations. The one major difference between the larger study and the smaller ones was the motivation of the teachers. Those in the larger study are all volunteers who had been sought by the researcher and the teachers in the smaller studies were teachers who espoused an interest in relaxation and inner mental training. Because of their interest, the latter group of teachers generally had more personal skill in relaxation at the beginning of their studies than did the volunteer teachers.

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