X. BEHAVIOUR MODIFICATION APPROACH FOR PROBLEM CHILDREN
As evidenced by the rising rate of school drop outs and student rebellion, parents' protest and legal challenge, education is in a state of crisis. Compounding this problem, teachers, psychologists, school social workers and school administrators appear to be suffering from a technological lag. It is only when the professionals in the educational field and its ancillary services include present-day advances in their practices that even a partial solution to the current crisis may be expected. In this connection, the traditional model of the social worker as offering individual counselling to the troubled youngsters is archaic and must be replaced by the model of 'education technologists' with the teacher as the primary client. While the application of behaviour modification to the school setting is an evolving technology, many aspects of the approach have already been validated and extensive reference is being made to supportive research.

During the early part of the twentieth century when school social work had just begun to gain professional acceptance in the west, social workers were in the forefront of social reform. The changed targets of these early social workers were the living conditions of school children and their families.
and their educational practices. The main techniques used was the facilitation of information exchange between parents and schools, focused on the needs of the children in general and geared to promote systems change. With the rise of the Mental Hygiene Movement during the first quarter of the century, the target of school social workers became the amelioration of the psycho-social stress reactions of individual children and the chief means of intervention became some variant of relationship therapy. As the target and technique changed, so did the nature of the presenting problems seen by school social workers. Referrals during the first quarter of the century focused on the problem related to academic performance and gradually shifted later to an emphasis on behavioral and personality problems.

The school social workers were following procedures that were not well adapted to the crisis conditions met within contemporary education. In support of this notion, it can be pointed out that, whereas teachers view behavioral problems in educational terms, mental health workers including social workers continue to draw often unrestrained inferences from these problems to their presumed underlying causes. The effect of this difference in approach is an almost hopeless
disjuncture between educational and mental health professionals, with teachers tending to refer fewer children and mental health workers spending inordinate amount of time in case finding activities.

It can be shown that despite this search for cases, other professional groups in the community are more effective in the detection of children with severe behavioural or severe personality problems than are workers within the schools, as measured by referrals to outside treatment agencies. It can also be deducted that present service conceptions have led school social workers into sharp jurisdictional or territorial disputes with other professional groups within the schools and outside social agencies with an inevitable negative effect on service. The final argument against the present conception of school social work practice as individually oriented practice or treatment is suggested by a simple arithmetic calculation. A one-to-one service model cannot possibly meet the present demands for service, even granting the questionable assumption that its techniques are the best available. In summing up, it can be said that school social work is currently facing a crisis which needs fast remodelling both quantitatively and qualitatively and that there is a clear and present demand for innovative patterns.
Acceptance of the role of education technologists will depend in part on the way students' problems are understood, since there is an interaction between the way in which the problems are viewed as a logical outgrowth of the social context in which the behaviour takes place and to certain extent a manifestation of intrinsic personality defects within the clients. The behaviour was viewed as an adaptive response to unfavourable circumstances. Baer and Wolf (1968) has termed this as an 'instrumental' property of behaviour, implying that the behaviour would be different if the environment in which it occurred were different.

The therapeutic strategy that emerges from this approach is an effort to ameliorate the situational factors associated with problem-behaviour and to lengthen the factors associated with more desirable behaviour.

Following the advent of the mental hygiene approach, problems have been understood to be a consequence of intrinsic personality defects within the client. While the defects are in some instances attributed to a complex set of genetic biological and social forces, the essential therapeutic
task has been seen as the modification of problem behaviour leading to the reassertion of situational controls. Illustrated by both psycho-dynamic theories and even the cognitively oriented approaches, the implications of the approach are that defects in the person must be corrected, rather than focusing a change in the situation associated with the defects. For example, someone chronically in debt would be termed a spendthrift despite the fact that the wage's he earned were substandard.

When this conception of the individual as opposed to the situational responsibility concept is carried into the school, the child is held accountable for any defect in his functioning while the school is credited with success in producing whatever positive changes are observed. In fact, however, the school carries the burden of the responsibility for the success or failure of the child with respect to both academic and social performances. The teacher is assumed to have acquired the skills necessary to teach his students to make new responses in the presence of increasingly complex stimuli. The teacher is also assumed to have acquired the skills necessary to create an environment suitable to the acquisition of new skills by students.
In such an environment it is no wonder that children develop learning deficits and become socially disruptive. It may be that this is the behaviour that is most rewarded.

In view of the defects observed in the schools it is strongly suggested that the professional (whether teacher, school social worker or psychologist) view the presenting problems of students as reasonable reactions to deficient environments. Granted, the social worker who makes this assumption runs the risk that he might be ignoring a pressing problem of some other etiology. If this is the case, however, the early, measurable failure of his efforts will alert him to this possibility.

On the other hand, the worker who seeks to change the individual rather than the classroom runs the following risks (1) iatrogenic illness (i.e. illness caused by the treatment) may well result from his efforts; (2) if effective, there is a distinct probability that his efforts will not generalise into the classrooms and behaviour problems may quickly recur and (3) defects in the educational system will be permitted to persist without change. Unlike the possible negative consequences of shorter term behaviourally oriented treatment, the ill effects of individually oriented treatment are slower to appear and - what is more often the case -
do not permit remediation.

Studies of Student Behaviour

Most requests by teachers for outside help centres on behavioural rather than dynamic problems. Repeated studies both in Europe and America have shown that students with problems related to poor study habits or poor social relationships are referred by teachers for external help. While cultural differences are naturally reflected in these referrals, teachers' requests for help apparently stress concern with objectionable target behaviour's within the classrooms.

Teachers do request aid in handling responses that occur with great intensity or frequency in problem-children. These responses may occur in other problem-children also; the difference lies in the greater intensity of the responses in those marked by the teachers. In addition to stressing the actual response of the student, another approach to the selection of target behaviour includes the teachers' evaluation of the behaviour. For example, one such approach uses the three following categories: Appropriate behaviour - any behaviour which is proper and acceptable in a given situation.
In-appropriate behaviour - any behaviour which is not proper or appropriate given the situation, but can be ignored. Examples include: removing one's shoes and walking in stockinged feet.

Unacceptable behaviour - any behaviour which is harmful to the child or others around him, any behaviour which disrupts the class or others around him, any behaviour which disrupts the class or a proportion of other students and any behaviour which involves breaking a rule, the consequences of which have been clearly stated by the teachers. For examples: running round the room disturbing others.

Finally, it should be indicated that in addition to individual students, entire classes might be the subject of observation and assessment. A wide range of observational system is possible, depending on the values and tensions of the observer. For example, investigators might be interested in five category observation of a single child and his teacher on a time sampling basis or course category observation of the rules testing and enforcing behaviour of an entire class and its teacher. One criterion for a useful system is its specification of student and teacher-behaviour.
Response Specification

Hyperactivity and non-task oriented behaviour are relatively imprecise terms because children could engage in any of an enormous array of responses compatible with either behaviour. It is, therefore, necessary to identify precisely the target of behavioural change in a process termed 'response specification'.

Reflexive behaviours that are under autonomic control are termed 'respondense'. Operant responses are classes of behaviour that produce some change in the environment. For example, a child might raise his hand (response) and the teacher might grant permission for him to speak (a change in the environment). Most teachers are primarily concerned with operant responses.

The second requirement of response specification is the selection of responses that occur in excess of once every ten to fifteen minutes. This is necessary because effective behaviour modification is often expedited by the change to provide repeated learning opportunities. When target behaviours occur at intervals of several weeks or even several hours, the therapist should not get perturbed.
It is often necessary to wait for long time before sufficient experience is accumulated to facilitate new learning and experience intervening between training periods may mitigate the cumulative effect of this training.

Moreover, it is suggested that behaviours occur in predictable chains with the more serious behaviour taking place after a series of less disturbing premonitory responses. Some studies show that shouting by a 6 years old brain damaged child occurred at the rate of one episode per ninety minutes but that he stamped his feet once in fifty five minutes, said 'no' in a loud voice once in seven minutes and shook his head vigorously from side to side once in seventy five seconds. Identification of this behavioural chain permitted early intervention in behavioural cycle with two distinct advantages, repetition of control efforts permitted radical behavioural changes without removing the child from the classroom and the amount of disruption of the class diminished as his outbursts decreased. The final requirement of response specification is the selection of a positive action to count in association with any negative action. There are two main reasons for this. First, teachers and others tend to concentrate spontaneously on the problem behaviour of children identified as deviants. The clinician should avoid reinforcing this negative tracking. Second, as will be shown shortly, the
the technology for accelerating behaviour is more powerful as a general rule than that aimed at deceleration of behaviour. It is therefore essential to select as behavioural target those responses amenable to acceleration.

It is desirable to establish a target rate at which the response is expected to occur when intervention is terminated. This decision is always 'political' in the sense that it involves some compromise between the behavioural patterns emitted by the individual and the expectations of those judging his behaviour - parents, teachers and administrators among others. If the rate is at the criterion level, no further action is needed. If the rate is below the criterion level, this rate constitutes a baseline and the evaluation of behaviour must continue.

**Antecedent Condition**

If a response is an action that produces changes in the environment, then antecedents set the occasion for the response to occur. Management of antecedents is the province of behavioura engineers, architects and professionals with a wide range of concerns. Some antecedents are favourable to the occurrence of a desired response; others are either unfavourable to the occurrence of the desired response or conductive to the occurrence of the problem responses in the same situation. It is obvious, for example, that a well constructed school will be more likely
be associated with good student performance than a dimly lit, filthy and poorly ventilated building. In the same vein it is clear that loud music or noise in the halls is likely to interfere with effective study responses. There are four classes of antecedents. The first class is interactional stimuli-verbal or symbolic stimuli, such as rules or facial expression, that serve to cue a response. It is true that a well managed class is (1) a predictable one and (2) one in which the teacher controls more of the consequences than students, then the teacher must have a stable rule system composed of contingent rather than absolute rules. Contingent rules stress acceleration of positive responses and specify that if a desired response is emitted a prescribed consequence will follow. Non-occurrence of the desired response leads to absence of the consequences, in contrast, absolute rules stress deceleration of negative responses and specify that if a negative behaviour occurs, then a negative consequence will follow. Contingent rules lodge the responsibility for producing positive consequences with the student; absolute rules lodge the responsibility with the teacher; Contingent rules are a more effective means of controlling behaviour.

A second class of antecedent conditions is facilitating stimuli - the essentials necessary if the response is to occur. For example, facilitating stimuli for the solution of algebraic problems are the tools for studying (such as a talk, good light and a quiet room), study materials and the prerequisite skills (i.e., arithmetic skills).
A great deal has been written about the effects of environment on learning and about the design of effective learning environments. Similarly, a great deal has been written about the value of such instructional aids as computers, teaching machines and programmes instruction for selective use with students at all levels of education. The advantages of all these approaches are that they permit individualised instruction and provide immediate feedback about the accuracy of responses so that all members of a large class can work simultaneously on different materials at different levels, while avoiding the practice of errors.

The third class of antecedent stimuli is potentiating stimuli - events manipulated by the behaviour modifier in an effort to maximise the value of the consequences that will follow a response. For example, a teacher might schedule a game period of mid-afternoon, when students are most likely to want a break or he might read the first chapter of an adventure story (termed 'reinforced sampling') that he plans to use as a reward for the completion of task behaviour throughout the day. In either case the likelihood that the student will work to attain the reinforcement is increased.

The fourth class of antecedents includes discriminative stimuli, which are indications that a positive consequences will follow
a response and stimulus deltas which indicate that responses are unlikely to be formed by a positive consequence. For example a student might know that asking his regular teacher for permission to leave school early will be refused while such requests are likely to be granted by substitutes; the regular teacher is a stimulus delta for making such requests, while the substitute teacher is a discriminative stimulus.

For some children good grades may be an indication of pleasant things to come. Superior papers might be posted on the bulletin board or read to the class or school staff, other students might expected to be granted money or extra privileges at home. Grades thus serve as a discriminative stimulus for approaching certain potentially reinforcing persons or situations. Will all children work to achieve good grades? No, only those who have in the past enjoyed positive consequences associated with grades. Thus a discriminative stimulus or stimulus delta controls response that has been learning through past experience. If a given child has not experienced that, add meaning to those events and he will work to produce them.

Consequent Conditions
Antecedent conditions set the occasion for responses, increasing the likelihood that they occur initially. If they are to recur, however, they must produce favourable consequences. If an operant response is a response that produces some change
in the environment then the changes or the consequences produced by a given response must be regarded as the conditions exercising primary control over it. Some consequences accelerates the likelihood that the rate of a response will increase: expressions of encouragement, payment for work completed, or an end to nagging. Other consequences decelerate the probability that a given response will be emitted, criticism being ignored, punishment, loss of something of value or being temporarily prevented from engaging in a positive activity. In order for these consequences to exercise their control, however, they must occur, be avasured is controlled by realities, not by expectations. For example, a child will work to achieve good grades if he receives some recognition for his efforts. If he has merely been promised this recognition without ever having received it, his behaviour is unlikely to be controlled by it.

The manipulation of consequences is a powerful means of behaviour control. When consequences follow solely on the occurrence of a given response, they are termed contingencies and their manipulation is termed contingency management. A teacher may use recess as a contingency if recess is restricted to those who put away their materials properly or perform whatever the desired behaviour is. Conversely, he may use
recess non contingently if he allows any child to go to recess regardless of whether he has put away his materials.

Two studies have evaluated the effect of contingent as opposed to non-contingent consequences in classroom settings. Each of these studies has framed a six-step procedure common to current research in operant behaviour.

1. A given response is specified: in the present instances, study behaviour and cooperative play.

2. A base line measurement is taken, reflecting the rate at which these responses occur in the environment prior to any manipulation.

3. The first experimented candidate is instituted - non-contingent use of tokens in the first study and teacher attention in the second study - with measurement of the dependent variables (study and cooperative play) being continued.

4. The first experimental condition is terminated and the second condition - contingent use of tokens and teacher attention is instituted with continuous measurement of the dependent variables.

5. The second conditions is terminated and is replaced by a return to the first condition (a reversal that might equally have been a return to the original base line condition) with measurement of the dependent variable continuing.
6. Finally the second experimental condition is re-instituted associated with a final measurement of response rates.

Studies have shown that the rates of both study and cooperation play increase when consequences are applied non-contingently. These studies strongly support the suggestions that the many accelerative consequences available in normal classroom for example attention, preferred seating locations, privileges such as use of special materials or participation in trips and games, among many others should be made available on a purely contingent basis in order to maintain or augment the teacher's positive control over the class.

Consequences may have either of two characteristic forms: they may be informational or material. Information is anything that 'removes or reduces uncertainty'. Feedback information about the effects of one's own behaviour has grave value. Its function is to facilitate the planful control of the individual's behaviour by 'feeding back' to him the results of his own behaviour. In a real sense every operant consequent evokes behaviour regulating feed back in the sense that when a child learns that he may go to recess regarding of whether he has completed his work, this information will be useful to him in planning his next efforts. However, some consequences are informational secondary to the material characteristics - as when we know that our is appreciated when we receive an expected bonus cheque. Although it is recognised that there is a distinct overlap between informational and material
consequences, they will nevertheless be discussed separately in the interest of clarity.

**Information Consequences**

Social reactions are a prime source of feedback because of their evaluative component and because they are often associated with eventful access to material reinforces. This is another way of saying that they have acquired a secondary value by virtue of having been associated with valued material consequences. For example, when a teacher tells a child that he may sit anywhere in the room he chooses (privilege, a material consequence as used here), this permission is typically associated with smiles, attentions and positive words. The teacher's gestures and words in the future are likely to be accelerative consequences for the child.

Feedback may be used either to accelerate or decelerate responses. Implicitly, whenever one aspect of a response is praised, other aspects are neglected. It is to be expected that the praised aspect will be strengthened while the neglected, ignored or extinguished aspects will be weakened. Beyond this, however, behaviour modifiers may choose deliberately to remove positive feedback following certain responses, such as a sixth class student solutions to fifth class problems in an effort to motivate a student to undertake more complex sixth class problems while a decisive research on the subject cannot be cited, it is believed that it will avoid the use of
simple extinction procedures because as will be shown later, the control exercised by the behaviour modifier may be weakened if such an approach is relied on. Instead it seems invariably wise to begin with the acceleration of a desired response and only later resort to decelerative techniques to do away with any problem behaviour that persists.

The use of positive attention has controlled a variety of behaviour in school children. Among pre-school children, positive teacher attention has been shown to improve climbing, cooperation, crawling and speech. In one study a 5-year-old kindergartner who had not spoken for over a year, spoke within four weeks when the teacher was attentive to him following each successive step towards effective speech (termed as shaping or reinforcement of successive approximatives). Among older school children teacher attentiveness has been used to increase the rates of study and acceptable social responses.

Unfortunately, both teachers and peer groups may serve to maintain, behaviour as well as desirable behaviour. For this to be true, the amount of attention offered to the child for negative behaviour must almost equal or exceed the attention paid to positive behaviour. Charlesworth and Harterp have shown that even nursery school children may
exert a similar negative influence. Much of this understanding of problem responses is undoubtedly unintentional. For example, it has been shown that reliance on simple commands such as 'sit down' may actually accelerate the rate of crying. Faced with a class of perhaps twenty-five students and constrained by reliance on absolute rule systems, teachers may find it difficult to do other than pay attention to negatives; the need to reverse this tendency is clear.

The use of positive attention to increase the rate of a behaviour incompatible with a problem response in order to extinguish the response has been convincingly demonstrated in several studies. In one, a child whose temper tantrums continued when she was held on the teacher's or principal's lap was brought under positive control within four weeks of reinforcement of appropriate social behaviour and ignoring of inappropriate behaviour. In another demonstration, a socially isolated child was brought to a pattern of social approach behaviour by withdrawing effort to encourage him to join groups (which rewarded his isolation) and paying attention only to social approach responses. This procedure has been used to accelerate the rate of task-oriented behaviour while decreasing hyperactivity, aggression and other socially disruptive responses of normal students as well as a variety of behaviours of brain injured children.
Several other investigators also used visual and auditory signals with normal and brain-damaged children, backing up the signals for positive behavior with reinforcements such as candy. In addition, Patterson (1960) had developed a 'work box' that contains a counter that can be reset and a light activated by a push button controlled at some distance by a teacher. The work base has been used successfully to modify the behavior of a number of children. Even more complex light signal systems have been used to modify the behavior of groups of students or even entire classes. In each of these instances lights have signalled the eventual provision of a variety of material reinforcers. The dual advantage of this approach are that -

1) the teacher is able to give an increased amount of feedback to students without disrupting his normal teaching routines &
2) feedback can be provided immediately following a desired response. Thus, there is no danger of a teacher's forgetting to respond positively and there is no delay in the student's receipt of information necessary for his continued performance.

Another means of transmitting feedback from teachers to students is through the use of traditional grading procedures. In theory, grades represent a reflection of the value of student output and should be associated with positive consequences in proportion to the value of the work done. In practice, however, there are five limitations to the value of grades.
1. Information feedback serves to increase motivation and stimulate change if the information is positive. But if it is negative, it can discourage both learner and teacher. In fact, evidence of failure is so punishing that people have built up effective techniques for ignoring information that might be negative.

2. A second limitation of grades is that they should be secondary reinforcers because of their association with positive consequences. In point of fact, grades are typically used as a means of avoiding negatives rather than as a means of achieving positives.

3. The third limitation is that grades typically are offered too late for either the student or the teacher to make use of their information value. When tests come at the end of a unit of work, little can be done to overcome the deficits they reflect. If instead grades were offered at many intervals during a study activity, they could serve a regulatory function in the teaching process.

4. One explanation for a perpetuation of terminal grading is the assumption that grades are a reflection of student performance. This is the fourth limitation of grading procedures.

5. Another limitation of the grading procedure is the use of absolute rather than achievement ratings.

If grades are 1) offered positively 2) associated with allocative
consequences 3) offered promptly 4) understood to be
indications of teacher achievement as first and student
achievement as second and 5) offered as consequences for
absolute and relative changes, then they can serve a useful
function, in the form of feedback.

Positive Reinforcements
Material consequences may be either concrete such as
money or an affectionate pat on the back of extension of
privileges. Another term for accelerative consequences is
positive reinforcement which implies that when an event is
followed or reinforced by a given consequence, its rate will
be affected positively. Two difficulties are encountered in
the use of material consequences 1) all children are not
reinforced by the same thing at the same time and 2) it is not
possible to deliver large reinforcements after small responses.
To overcome this, it is better to develop a token or point
medium to be given to the student following completion of
the required task.

Negative Reinforcements
This may be in the form of a punishment or timing out (sending
the child home or making him absent for a period of time) if the
behaviour is contrary to the expectations of the school's policy.

PLAN FOR ACTION
The foregoing account summarised many aspects of behaviour
modification theory and practice as it pertains to the management of children in school settings. When the techniques are applied in individual classrooms, procedures should be selected according to whether they are 1) result in minimal description of the classroom routines 2) require a minimum of teacher's time or that of other personnel 3) draw maximally on students' capacities 4) are likely to be maintained following termination of intervention and 5) provide the teacher with some measure of the effectiveness of procedures.

Many of the procedures thus described meet all of the criteria. Their acceptance depends on the manner in which they are introduced. In seeking to involve a teacher in a behaviour modification plan, it is necessary to draw on every appropriate tactic of the interpersonal influence because the success of all behavioural maintenance and change plans in the classrooms depends on the teacher's thoughtful cooperation. To achieve this it is essential to participate with the teacher in defining the appropriate or unacceptable behaviour and the nature of the intervention to be used.

Secondly, it is essential to clarify with the teacher the precise methodology to be used and the logic underline at choice points in the execution of the programme. And thirdly, philosophical consensus with the teacher must be achieved in order to ensure consistency in the application of the procedures.