Title: TRAINING PARENTS AND TEACHERS TO PRECISELY MANAGE CHILDREN'S BEHAVIOR

Author: Ogden R. Lindsley, Ph.D.

Address: SPECIAL EDUCATION RESEARCH
CHILDREN'S REHABILITATION UNIT
UNIVERSITY OF KANSAS MEDICAL CENTER

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Training Parents and Teachers to Precisely Manage Children's Behavior

Ogden R. Lindsley, Ph. D.

School of Education

and

Bureau of Child Research

University of Kansas

I am in the business of teaching parents and teachers. I don’t work directly with children any more. My goal is still to improve children’s behavior, but I can’t afford the luxury of working directly with them. In 1961, while working in a state mental hospital at Harvard, I computed these strategic statistics. I took all the children in the country from 5 to 17 years of age for the year 1961 from the population census, all the psychiatrists available, and did a little long division. If every psychiatrist in the country were to work with children 5 to 17, each would have 3,660 patients. Now if a psychiatrist’s maximum patient load is 60 patients a week - and that’s a hustling psychiatrist - you can see that 3,600 children will still need help. What criteria does a psychiatrist use to select his 60 children, the sickest 60, the richest 60, the 60 closest to his office, the 60 that can come between 8 and 4 o’clock, or what?

You will find that psychiatrists are primarily administrators and that more mental hospitals are directed by psychiatrists than by speech pathologists, nurses, social workers, or psychologists. Therefore psychiatrists are in the habit of saying, “I’m well aware that I can’t handle the behavioral needs of the masses. However, I direct a team approach to mental health.” Now, if you took every psychologist in the American Psychological Association and aimed them at children 5 to 17, they would be outnumbered 2,300 to 1. Social workers are a little better off. We’ve got more of them because they have terminal Master’s degrees. Nurses number about the same as the social workers. But they are still greatly outnumbered.
Now, how in the world do you ask a mongoloid child what the world looks like from his point of view? You don't give him a rating scale. A rating scale won't get you the truth out of a Ph.D.

Let's assume that the child does something -- he yells -- he cries -- and this crying, believe it or not, has certain very real dimensions. It starts and it stops; that is very simple, direct, and clear to see. The trouble with most adults' approach to crying is that they can hardly ever tell you the conditions which were operating immediately after he shut up. They try to remember and in desperation tell you, "Well, I was turning to put the toast in the toaster when... What do you suppose happened? Waa-aah!" Then they analyze 'toast in the toaster' as a potential cause of the tantrum. They wonder, "Is it possible that when I broke my leg and was in the hospital when he was a year old, I didn't hold him enough?" So now he's suffering from not being held four years ago? They go back into causes. That's what turned on the yelling. That's a very far out shot when they're totally ignorant about what the yelling produces. They haven't even looked. They are delving into the dim dark past, not even looking into the future. They are literally walking through their child's life backwards.

Now the mother thinks of herself as a cry-causer, a tantrum turner-oner. We all know aides, attendants, mothers, and teachers who castigate themselves at lunch. "What in the world did I do this morning that caused the tantrum that caused that boy to get a bloody head which caused him to be taken home in a police car?" They act like they turned it on. That is the parent's point of view.

Everyone, whether they're looking at early childhood, repressed sexuality, or putting the toast in the toaster, who looks at the causes of a tantrum, mechanizes a child. It's nineteenth century mechanism. I don't care whether it's neurophysiological, Freudian, or metaphysical. Attempting to analyze the tantrum in terms of its antecedents is to treat it mechanistically. A child is not an object. He is a person. From his point of view, you see, there aren't any antecedents. He isn't an object -- he doesn't get turned on. He felt like having a lollipop, and it just so happens in this house that tantrums get lollipopped because that is the only way they know to turn them off. Lollipops are the consequences of his tantrums.
It isn't until you get to the group called teachers that you have anything like a workable treatment ratio. It just might be possible for a teacher to individually treat 26 children at one time.

There is another interesting group of potential mental health workers called parents. They're a good profession and a responsible profession because they have kept pace with the number of children and have met their social responsibility. So you can see that the professions we must use to manage children's disorders early enough for prevention or easy treatment, for economical reasons alone, must be teachers and parents. Here and there a rich person may afford a psychiatrist or psychologist, or a child with a very bizarre syndrome may be able to bypass the waiting line to the local mental health center. But most of us, or most of our children, must rely on teachers and parents to manage our behaviors.

The strategy behind everything I've been doing for the last three years is to train people to advise and direct the research of parents and teachers. Trained parents and teachers can, in turn, conduct management classes to advise other parents and teachers. I can't see any other way to handle the behavioral needs of our children at this time. On the basis of this I decided to leave psychology and go into education. I had an idea teachers would be more easily instructed from within education than from the Harvard Psychiatric Department.

Many of the things presented here will not be at all similar to anything in the textbooks called educating the exceptional child. The ratio is 5000 exceptional children to 1 professional, and when there are that many you just can't consider individual children. But to treat them properly, you have to look at the individual child. For example, a mother is doing fine until one of her children stops doing something he should or starts doing something too seldom or something too often. At that moment what does she do? We're focused on the parents point of view now, but that's not enough. Most parents make the error of looking at the child from an adult or parent point of view. They say, "Oh my heavens, something is wrong with 30 percent of my litter. It's HIS FATHER'S fault: it runs in HIS family." The child isn't considering that he's 30 percent of the family and he's not walking yet and it's really his father's fault. What we have to do is somehow look at this from the little mongoloid child's point of view. When you do that, children's behavior makes a lot of sense.
The mother learns for the consequences of her own actions, but she forgets that this little mongolid child is human too, and he's looking for the consequences of his actions. They see two very different things. Mother sees the front of the tantrum and the child sees the back of the tantrum. And the front of a tantrum doesn't look like the back any more than the front of an elephant looks like the back. The mother has to stop worrying about herself and the immediate results of her behavior and look over the tantrum to the back of it, to the child's point of view. I think to look at the consequences of an action is to humanize the child and not treat him as an object of nineteenth century Freudian mechanism.

After we have the parents out of 19th century mechanism and looking at the consequences of a child's action we can proceed. The parents have taught us several things too. I used to say you had to define behavior in objective terms but one of my first parents' classes changed that. I came a little early and some parents were already there. I heard one of the early parents lecturing the other two earlybirds. He was saying, "Well, no, if you just try to understand the guy it's really quite easy." But at the last meeting I had given them two hours of academic lecturing about defining functional definitions and the history of behaviorism, and the parent said, "What he was saying was pinpoint the behavior." Then I walked in and now we've developed a new curriculum. It's called "pinpoint, record and consequate."

Pinpointing is very simple. You just pinpoint, first things first, one at a time and everybody pinpoints a different thing. One teacher may pinpoint foot tapping. She's got sensitive ears and just can't stand that horrible tapping. A boy could have his finger in his nose, but it wouldn't bother her at all. But this other teacher is a nose nut. She can't even start on math until she gets the fingers out of the noses. She cannot even consider curriculum selection until she gets this nose fingering out of the classroom.

The pinpointed movement has to be a complete movement cycle. We don't pinpoint yelling, or mouth open, but both mouth open to mouth closed, a complete yell. You have a cycle so you can find its end. Don't count an elephant when you see a trunk. Wait until the whole elephant goes by and you have a complete cycle. You know an elephant has gone by when another can go by, and you know a movement cycle
has occurred when another can occur. You know a cry is over when one can start again. It's that simple. Now many experts, people who have never really tried to count behavior, have sat up here and looked at seas of behaving organisms from university towers. Many of these people will advise you to record behavior that isn't behavior — that doesn't pass the movement cycle test. They say record school phobia. Well, that doesn't even pass the dead man test. So don't try to teach a child something that the dead do better.

What do we mean? Let's be very specific. A teacher decides to record number of minutes spent doing arithmetic. She's going to count how often the clock goes around while Billy is in arithmetic position. Could we have a corpse in arithmetic position? Of course! It wouldn't be very pleasant but we could do it. Now if the teacher pays Billy off for every ten minutes he's in arithmetic position, he may not be dead, but he may go into arithmetic position while he plots her destruction. You see, she thinks she's teaching arithmetic. She's not. She's teaching staying in arithmetic position. What Billy does in arithmetic position is up to him—not her.

We have Sandra, ten years old and we say, "Go upstairs in your room and study for a half an hour before you go out and play." Does that pass the dead man test? No! Going upstairs does, yes; she'll go upstairs, and the dead won't, but "sit at your desk?" — the dead can sit at a desk in arithmetic position. Most experienced teachers know how to require a movement cycle. They say "Go upstairs and study until you can bring me down 22 addition facts correct. When you have 22 correct, you can go out to play." And zip, zip, no child plots teacher's destruction in arithmetic position; they all add two plus two is four and three plus three is six. They come down and have two wrong, go back and make two right, and they're free to play. That's the difference. The dead man test will rule out recording non-behaviors.

So we have our teacher who has pinpointed finger in nose. She has to record it. That's the second step. Pinpoint, record and conseuate. So our teacher doesn't have many recording devices, but she just makes a little mark on the blackboard for every nose thrust that she can find and she gets quite a few. Many of you are going to say you can't get a counter. That's just baloney — they sell useful counters in practically every city in America, or you can just mark on a card.
There was a teacher at the Childrens Rehabilitation Unit at the University of Kansas Medical Center who resisted precision teaching (pinpoint, record and consequate) for three years. Recently though she invented a new counter. She took a 3x5 card, a piece of rolled up masking tape and fastened the card on her dress with the masking tape -- or on her arm if it's summer time. She just made a mark whenever a behavior occurred. Then at the end of the day, she took the card off, put a date on it, put it in a little tin box and had a complete record of the raw data. That was precision teaching! You can also go to the local knitting store and buy a large size knitting counter which will fit beautifully on a pencil. For 88¢ you can get a supermarket check-out counter which will count to 999. Realize the tragedy of this, we knit more precisely than we teach. We check our supermarket costs more accurately than we treat the child who's costing us $25.00 an hour each week. We know more about the money we spend on beans than we do about the diameter of his bed-wetting.

Only after you have a record of the behavior should you alter it. And the only way you can tell whether you have selected a good alteration procedure is to ask the child. The child knows best is the principal here. I refuse to tell parents or teachers what to alter. I refuse to suggest ways to change the behavior. I say watch that record, scratch your head, ask the child, ask his friend, ask the neighbor. The people in the environment, the people in the classroom, the little ones maybe, know more about what Tommy would work to get or work to avoid than you or I. A teacher doesn't worry about all children; she just wants the thing that Tommy will work for.

Shock and food are not universal consequences. Candy isn't a universal child reward either. How do I know? The children told me. The children told one of our teachers, Miss Elaine Fink. She tried to accelerate rate of working with Montessori materials in a pre-school class for retarded children. A child's record told her that the candy reward decelerated his performance rate. Was the candy a punishment?

What we do is use curriculum to record curriculum. If Tommy wants to work with the pink tower he goes and gets the blocks to make the tower and the paper that is with them. He takes the paper to the teacher's desk, where she marks the time that he checked it out. Since Tommy can't write his name yet, he takes a rubber stamp with 'Tommy' and stamps 'Tommy' on the paper. Now Tommy goes over to pile up the pink tower.
He gets it perfect the first time! That's one! He makes one mark on the paper and gives himself three claps for Montessori approval, and knocks down the tower. Then he piles it up again. That's two! He makes a second mark and gives himself three more claps. Maybe he builds three pink towers and makes three marks before he gets bored with it. He takes the paper to the teacher who records the time he finished, and he puts the tower and paper back on the shelf. We have his record of three pink towers piled in six minutes. With ten blocks to a tower, this is a rate of five blocks a minute. Tommy can't do division, so we send the division to the learning disability kids across the hall. They, instead of doing division on apples and pennies, do pink tower rates from the pre-schoolers. This is using curriculum to record curriculum, so you don't need a computer in the classroom. You just need a creative teacher.

Plotting performance rates is a little hard to learn at first, but in about twenty minutes children learn it and can put any behavior from 1000 a minute to one a day on the same plot. With six cycle graph paper we've had parents and teachers training meetings where we spend only two minutes discussing each child. If you have a two hour teacher meeting you can discuss 60 children in detail. To keep them from gabbing a little too much about new dresses, we set a two minute timer.

Another one of Elaine Fink's pre-schoolers is Jim. Figure 1 shows Jim's rate of putting pegs in a pegboard. He does 6 pegs per minute on Wednesday, on Thursday two per minute, seven per minute on Friday, and on Saturday and Sunday, there is no school so we skip those days on the graph. Jim does the pegboard every school day for the next three weeks and has a middle or median rate of 4 per minute (shown in the first balloon on the left in Figure 1).

Elaine wanted to accelerate Jim's pegboard rate, so she asked an expert in Behavior Modification how to speed up the pegboard rates. The self-styled classroom expert said, "Reinforce him with an M&M (chocolate) each time he completes a pegboard." So Elaine held the tray of chocolate out, and Jim picked a chocolate covered M&M. He got a piece of chocolate for every pegboard done correctly for the next four weeks. But the chocolate did not accelerate the rate. It decelerated it.
Figure 1.
Jim's pegboard rates are accelerated by magic-marker success scores on his hand.
For some unknown reason, possibly embarrassing to the basic scientist, but nevertheless quite true, the chocolate decelerated Jim's pegboard workrate. It went from a median of 4 per minute down to 3 per minute. He did one less peg a minute. It cut his performance 25%. Why? Maybe he got slippery chocolate on his fingers; maybe it stuck in his teeth; maybe he kept looking at the chocolate box pondering about how good the next one would taste. I don't know, and what's more, Elaine and I don't care! It was not a good speed-upper for Jim. It was a slower-downer! The teacher knew it by looking at the record, but she was puzzled. She came to me, "I think he's getting worse Dr. Lindsley." I told her, "No doubt he is if the graph's going down." She said, "But Mr. ______ said it shouldn't." I said, "Well, that shows you what Mr. ______ knows. He doesn't know anything about Jim. He just knows that for children in general chocolate consequences should accelerate. We know Jim is different because he likes to wear his hat and won't eat the heads of his animal crackers. This is just one more of his behavioral individualities."

So Elaine tried her own resources. She put a mark on the back of Jim's hand with a water-color magic-marker for each pegboard completed. Figure 1 shows that the hand-marks accelerated Jim's pegboard rates from 3 per minute for M&M's to 6 per minute. This was 2 per minute faster than using no external consequence. Mothers reported that Jim and the other children liked their pegboard marks so well they held their hands outside the tubs during their evening baths to preserve the marks. Parents said they liked the marks because they told how much their child had done in school that day. Elaine said she liked the marks because they worked and cost so little. "One magic-marker will go two months! It also taught the children to count."

Here again we have the promise of an accelerating consequence that can be itself a part of the curriculum.

I think Elaine may especially like the magic-marks, not only because they work so well and cost so little, but also because she thought them up. They are her creation! And they worked! Elaine is a dedicated teacher and dreaming up new ways of helping her children may be a very important consequence for her. If we rob our best teachers of their resources and creations—we lose not only them as teachers, but the opportunity
to learn from their experience and dedicated creative talent.

Our pre-school teacher, Elaine, helped her pupil, Jim, by using a principle that I call Grandma's law. It goes, "If at first you don't succeed, then you just try and try again." Now the reason I call it Grandma's law, is that I don't like to plagiarize and the first place I heard it was from my grandmother. The next few figures show some results of this simple teaching. These are things our parents and teachers have accomplished using these principles over the past three years in greater Kansas City. We have, in my office, at this time around 300 successful child behavior changes on file.

In our fourth class to train fathers of retarded children to advise their wives to precisely manage their children's behavior at home we had one father who, like the others, went home from the first meeting with the advice to "pinpoint and record the behaviors you and your wife would most like to change in your children." This father had two retarded children, David, an emotionally disturbed eleven year old boy and Lisa, a sweet, little seven year old girl conveniently wearing the label "brain damaged". Figure 2 shows the arm biting rates of the two children. Mother recorded four arm bites the first day from David, none since. The first time I saw recording alone decelerate an unwanted behavior I was surprised and angry because my research case was gone. There should be some behavior to treat and it had gone away all by itself. Recording alone works sometimes. I don't know why, but I have some conjectures. It could be that the mother used to grit her teeth and flinch after each arm bite but now she merely pushes her counter and says "that's one".

Insert figure 2 about here

Lisa's arm biting also decelerated with recording alone. It just took a little longer. She bit seven times the first day, three the second day, one the third day, and none since. A month later however, sweet Lisa screamed twice very
Figure 2. Public recording alone deaccelerates arm-biting of both an eleven year old emotionally disturbed boy and his seven year old brain damaged sister.
loudly, each a tantrum type of scream. The next day she screamed three times, and the next day once. Right away mother got concerned. Before the father's class both children had received drug warfare and other traditional treatment but their arm biting had persisted. Mother had even gone to a listening expert (psychotherapist) for an hour a week, to help her children.

I have no direct objection to listening therapy, the only harm it does is delay effective treatment. But how can even a listening therapist have the gall, the crust, to be so optimistic that he dares try cushion shots in behavior therapy. In other words, how can he really hope to treat two arm biting children by bouncing a listen off their mother? Cushion shots are hard enough in pool, much worse in behavior. Nevertheless, they are tried and are believed in by desperate parents. Our mother believed in it. She had gotten the notion that the arm bites occurred when the children felt most unloved, and they were punishing themselves. Therefore, she hugged them immediately after each arm bite to make them more secure. She hugged Lisa after each tantrum scream in the same way thinking that her old insecurity had come back. Lisa's tantrums then went up to 7 and 8 per day. Then (by luck) there was a father's meeting. On seeing the graph the other fathers said, "She's hugging the yells, she's hugging the yells! Tell her to stop." The other fathers advised this father to tell his wife to ask Lisa to tie a mask over her mouth for a few minutes after each cry. The cries immediately went down to three, three, up for an old college try to seven, back to three, two, one, and they've never occurred since. Now in a case like this you don't have to be a professional to advise the mother further. She should have the child empty the trash for a hug, or set the table for a hug, or be given an opportunity for some kind of more decent employment for affection than arm biting or tantrum screams.

I described this case, not because it is representative, but because it is the rarest of rare. It is the only one we have -- out of about 300 -- in which one unwanted behavior was decelerated and another one came and took its place. It is our only case of "symptom substitution" to date. It's very uncommon but of great research interest. For the last year and one half,
I have been offering $25 for every recorded case that's sent to me. Evidently it's so rare that this is still the only one worth $25. I really would like about five of them so I could publish an article entitled "the five cases of symptom substitution."

It is now clear that the once feared "symptom substitution" is so rare (one out of 300) that it is of no clinical significance or importance. However, the very scarcity of "symptom substitution" gives it an esoteric research interest, and for this reason I still seek further recorded cases. I would like at least two on file.

Our next example of precision teaching helped a little cerebral palsied 10 year-old named Sue, attending the Capper Foundation School in Topeka, Kansas. Her teacher, Sally Slezak, decided to try to accelerate the number of words Sue typed with a head stick each minute. Figure 3 shows that little Sue was typing about six words every hundred minutes. That's pretty slow, only two or three words typed correctly per hour. Orthopedically handicapped children really work hard, with great diligence and motivation. Imagine that little wobbling head, drooling mouth, and waving arms, banging out two or three words an hour. If you're not careful you think there's no sense in trying consequences or motivation with her because she's such a plugger. One can think of rewards helping a bored child, a juvenile delinquent, an emotionally disturbed child, but an orthopedically handicapped child needs muscles, prosthetic devices, -- not rewards.

Insert figure 3 about here

Nevertheless, Sally learned well in my class for teachers. She learned that the child knows best. She offered Sue an alphabet board to play with for one minute after every word done correctly. The words typed correctly went immediately from three an hour to two a minute with no gradual acquisition which means she could have done two a minute all along had it been worth her while. She was a Cerebral Palsied gold bricker -- a goof off-- a dawdler all the time! Sally took away the alphabet board consequence and the rate went up again to 3 per minute. Sally had left the alphabet board consequence in a little too long. Now Sue can type faster without it!
Figure 3.
Head stick typing by a cerebral palsied girl is accelerated to 43 times its former value (3,300%) by one minute of alphabet board play for each new word typed.

SUE
10y CP
ELEM SPEC
SLEZAK
CAPPER FOUND
Some behavior modification experts do not believe such effects are possible. A procedure which accelerates on introduction and also accelerates when removed! One of the most recent and prestigious journals even refuses to publish them.\footnote{7}

Such effects are clear and well-known in physical training aids — such as training wheels on a bicycle. We can see the side wheels on and so we understand them better. A child can't ride so we put sidewheelers on, and immediately he rides the bike. If we leave them on too long, when we take them off, he rides even better. And so it was with Sue and the alphabet board consequence.

I'd like to add that teachers are people and need consequences too. Jim Austin, director of the Johnny Appleseed School and Training Center, Fort Wayne, Indiana, asked me to run a workshop for teachers last summer. I told Jim that I'd teach his teachers in one week to do precision teaching if he'd guarantee to maintain it for a full year to give it a fair trial. He didn't believe I could teach them; I didn't believe I could either, but anyway we tried and it happened — all teacher's learned to pinpoint, record and consequeate. Every teacher is required to record thirteen students each day to hold her job at Appleseed School. Each teacher must have a target bank for each child, two acceleration targets and two deceleration targets. Since they have in this way planned ahead, they do not have to stop to plan what to do next. A teacher must have four kinds of consequences or tools in her bank, two tools to decelerate behavior with and two tools to accelerate behavior for each child. Completed projects must be presented within the same week in which they are completed, and so forth.

Jim recorded his teachers' successful changes in child behavior. During the month of September at Appleseed School, the teachers accelerated 27 behaviors. Twenty five percent of their first attempts were successful. A quarter of them didn't have to try again and again, didn't have to use Grandma's Law. In October they were down to only 12 behavior changes and only 8% success. Now I wonder, do you suppose they're like our little head stick typing, gold bricking girl? Do you suppose they need more motivation? Well, Jim Austin and his school board decided they would try an incentive program to consequeate the teachers who improved the most child behavior.
This is Appleseed's teaching incentive program for 1968. For extra plotting over the minimum thirteen records, teachers get two points for each acceleration target and one for each deceleration target. The teacher with the most data points each week gets a $10 dinner for two at Hall's Restaurant which is the best steak house in Fort Wayne. The teacher with the most extra points for the month gets $60 worth of merchandise, most for the year a $500 trip for two to California, runner-up $250, $125.

Now are teachers people? Do they need consequences like the rest of us? You've heard arguments both for and against incentive programs. The answer will not be found around a committee table. You have to ask some teachers if an incentive program would accelerate their work. You cannot ask in English, with a questionnaire or interview. You will only get an English answer—words, mere words. You must ask teachers like we ask children, by pinpointing and recording their behavior and then measuring the effect of the incentive on the teaching records.

During the first month of the Appleseed Incentive Program (November 1967), the teachers improved 42 child behaviors as opposed to 12 before the incentives, and their percent of first attempts that were successful was 30% as compared to only 8% prior to the incentive program. So you see, Precise Behavioral Management works with children of all ages—-even teachers!

There is only one way to summarize what I've said here. Just remember to apply the four steps of precision teaching—-Pinpoint, record, consequate, and try and try again. An never, never forget, the child knows best.
Footnotes

1. An edited transcription of an extemporary address presented to C. S. Mott Foundation Children's Health Center, Flint, Michigan, March 1968. This research was supported by Training Grant NB-05362-02, National Institute of Neurological Diseases and Blindness and Research Grant HD-00870-02, National Institute of Child Health and Human Development, from the U. S. Public Health Service, Department of Health, Education, and Welfare to the Bureau of Child Research, University of Kansas.

2. I am indebted to Jim Austin and his teachers at Johnny Appleseed School and Training Center for their cooperation and to Elaine Fink and her principal, Dick Whelan, and Sally Slezak and her principal, Dick Mitts, for their fine Precision Teaching records. Most of all, we are indebted to the children, to Jim, David, Lisa, and Sue without whom we would have no new information.

3. The children are real, but their names are fictitious to protect their identity.


6. Adapted from B. F. Skinner's dictum "the rat knows best," first told to me in December, 1951.