Classroom teachers often do not get needed information from clinic case reports on children, and children often continue to fail in classroom settings even after individualized remedial instruction. Therefore, to complement existing clinic facilities, the CHILD Center, Kentfield, California, has included in its regular teaching program a remedial-diagnosis mobile unit. The unit visits elementary schools on a monthly basis, providing teachers with opportunities to become acquainted with diagnostic instruments and to practice using remedial techniques. One teacher and one child, chosen from this teacher's class, work together in the mobile unit on a daily basis. The teacher acts as diagnostician and as remedial teacher; the child, as a "teacher's teacher." At the end of the month the two are able to continue their working relationship into the classroom. Descriptions of children's reading difficulties and sample programs designed to reduce them are included. (MD)
TEACHING TECHNIQUES IN REMEDIALDIAGNOSIS

Presentation to the
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by
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I. Introduction

Dr. Beery and Dr. O'Donnell have described the principles and basic operational procedures of the Remedialdiagnosis project. It is left for me to describe in some detail the actual day-to-day activities and people-to-people relationships which take place in the course of our work in the schools and in our remedialdiagnosis mobile unit, often referred to affectionately as the 'great green caterpillar'.

Last night, in an effort to sum up our work in one succinct word, it occurred to me that one such word might be "experimentation". As we all realize more painfully year after year, we are working in a comparatively young field—a field in which, although drawing upon the contributions of people in many disciplines, can as yet offer few pat answers. Perhaps this is part of its charm! I am reminded of a remarkable older woman in San Francisco who has for years taken as her own personal project, the education of intern and resident wives in the social graces by inviting us in groups of seven out to lunch. She is a beautiful person whose lasting charm rests upon her ability to be interested in what you are interested in and to converse at a high level in seemingly all fields. After one such interesting discussion about children with learning disabilities, I bemoaned the lack of standard answers to confusing questions. She looked at me, quite perplexed, and said: "But, my dear— you either like being a pioneer or you don't."

This marvelous remark has tided me over many dark days. And I think you may agree that this could be at least part of the reason that so many of us are here and still working despite frustrations—there is challenge and attraction in a relatively new field.

To further complicate, or perhaps enhance, the challenge, I believe the Remedialdiagnosis project is trying out some ideas which are somewhat unique in the treatment of learning disabilities. After separate and then cooperative careers in remediation based primarily upon the medical model, the members of our multidisciplinary team, The CHILD Center, came to the startling conclusion that the information at their disposal was not being communicated to the person most able to reach the child in school: his classroom teacher.

I'm sure all too many of us have received the long, diagnostic reports from impersonal authorities which were rife with jargon and woefully lacking in practical techniques for helping the child. If a prescriptive section was included, it often bore no relationship to the reality of the classroom and thus was immediately filed in the ever-growing collection of memorabilia in the child's cum record. Our project is an experimental effort to correct this disability in people-to-people communication. It is hopefully a system of mutual sharing; and as such, it is heavily dependent upon human interrelationships.
II. Principles and Problems

At this point, I think it might be well to review again two basic principles which are at the heart of these project relationships.

First, we have said that the project is for the classroom teacher. She is in charge; the remedial-diagnostic teacher is her associate, her consultant. The multidisciplinary team is at her disposal and also serves in a consulting role to the local ancillary school staff. We are trying to build and reinforce teacher competency, as well as to develop local school resources, rather than to come in to a school for four weeks as "the experts."

So far, so good. But let's examine for a moment just how easy it is to follow this principle in practice.

"The classroom teacher is in charge. There are no more experts; just a mutual sharing and pooling of ideas." This is not an easy thing to do. Many of us have been and are classroom teachers. If we moved into the field of learning disabilities, it was usually with a desire to do more; to obtain more skill in diagnosing and helping children with problems. It is not easy to step back, nor is it easy for the psychiatrist, the neurologist, or pediatrician to step out of their comfortable roles and just be people. We are stripped of our labels, and deep down we rather enjoyed that term, "special" education. But to do our jobs in the old way, in our tiny cubicles with our tests and profiles waving, doesn't build the competency of the person who can help the child most where his troubles occur - the classroom teacher.

So, we experiment. We experiment with better ways to communicate ideas without threatening and to talk about alternative new methods without negatively castigating the old.

Now, let's flip the coin. Do you think the classroom teacher and the local ancillary school personnel have an easy task? How would you feel if you saw a 50-foot green caterpillar pull up into your volleyball court carrying a psychiatrist, a neurologist, a pediatrician, a psychologist, a speech pathologist, and most mysterious of all, two remedial-diagnostic teachers? It takes quite a bit of ego strength to say in the face of all this, "I'm having problems with this child" -- or "with this group" -- or "with the whole blasted class." It's hard to say, "There are things I don't know--and some I do know. How about helping me piece them together?"

It is remarkable that, faced with new knowledge and new challenges, some very fine relationships are formed. We aren't always successful. But in the course of the sharing process, we and they grow in our ability to communicate where it counts: child to teacher to parent to principal to former experts, in the school. And in the course of it all, not just one child but many benefit.

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Our second guiding principle concerns this teacher-to-child relationship, which is really just another name for the same concept: people-to-people sharing. In this relationship, again, it is the classroom teacher who takes the lead, not the so-called specialist. She looks for strengths as well as weaknesses in the child's functioning. She is not so much interested in what a child does not know, but in what he can learn and in finding the most efficient way of teaching him. In doing so, we allow him to teach us.

Once again, this is often easier said than done. It is tempting to continue our search for disabilities and labels. We can easily pass a passion for testing on to the teacher, when the realities of her classroom demand more efficient and practical teaching techniques. Realistically some standard diagnostic tools are used to gain a cross sectional view of the child's abilities. The emphasis during the largest part of the project, however, is testing through teaching.

One of the most poignant changes in relationship is that which must develop between the former "remedial" teacher and the child. Most of us that have loved individual tutoring have enjoyed the close personal relationship which has developed between the child and his "special" teacher. You may have had the experience, however, as I have had, of seeing a child perform beautifully for you one-to-one; and then of watching in horror as he collapsed when this prop was taken away in the regular classroom. This can easily occur in our project, and has occurred. We have come to feel strongly that we cannot replace the regular teacher or stand between their established relationship because we leave, and the classroom teacher stays. A close working relationship can and should be developed; but always with the understanding that the trailer leaves in four weeks, but the classroom teacher-student involvement will continue to grow.

III. Preparing the Child for the Project

One of the most frequently asked questions is, "How are children prepared for this project? Does the trailer gain the stigma of a place where people are sent who are having trouble in school?"

Actually, and almost accidentally, this has been one of the most successful parts of our program. The child chosen for the project, as well as the teacher's entire class, is told that their teacher is going back to school. For one month she will be taking a course in the trailer, and unfortunately she will only be able to choose one child to help her as she learns to be a better teacher. Long before her selection is made, the children are vying actively to be a "teacher's teacher". They are told honestly from the start that their teacher will be using them to try out new screening instruments and classroom materials. The child will help her decide which items would be suitable for other children in the class. This concept of being a teacher to their teacher
is reinforced often for the child during the four weeks. At the end of the project, each child is presented with a diploma, complete with a gold seal and ribbon, which reads: "Achievement of Merit Award to John Doe in highest appreciation for helping to teach teachers." These are often proudly displayed on the classroom bulletin boards and are the envy of every child in the class. A teacher will often have her student act as a guide to bring the entire class through the unit, and it is quite thrilling to see how proudly he points out the gadgets and people who have become a part of "his trailer".

IV. Concepts Stressed in the Workshop

I have placed great emphasis upon personal relationships in our work. In a fifty-foot mobile unit, often staffed with wall-to-wall people, these assume gigantic proportions. There are also, however, some basic instructional concepts which we attempt to share in the course of our work together. I offer these hesitantly as a general guideline, rather than to suggest a static operation which all teachers are asked to follow. In fact, we have more often not done it this way than vice-versa; but they remain our basic objectives:

1. to fulfill the teacher's personal objectives for professional growth.
2. to encourage the use of behavioral objectives in preparing teaching programs.
3. to analyze the steps necessary to the achievement of the stated objective (task analysis)
4. to encourage the development of criterion testing to measure the accomplishment of an objective.
5. most importantly, to encourage the use of experimental teaching methods. After taking into consideration the cross-sectional data available on a child, teachers develop alternative teaching methods for reaching the specific objectives and observe the results of their methods in the child's learning.

As you will see in the following examples, many teachers have followed these flexible guidelines. Many also have not. I have used the examples to illustrate the general framework as well as the variety of learning problems which can be tackled within the framework.

Example A (see p. 6) was prepared by two teachers working with an intelligent boy whose reading progress had been stopped due to a lack of a consistent phonic system in word analysis. The task is stated in behavioral terms and the task analysis is sequenced from most difficult to least difficult task, top to bottom. This was an example of a fantastic use of creative teacher resources in the development of six alternative methods.

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for reaching the objective. The child learned the phonic principles best with a visual approach on color-coded cards and achieved the stated objective in less than two weeks. Another rewarding factor in this case was the establishment of excellent parent-school relations through frequent conferences and observations in the trailer.

In Example B (p. 7) a completely different problem was attacked. This student was a very gifted child who nonetheless had a "learning" problem, in that there were very few positive reinforcers operating in response to his work in school or at home. His performance had dropped off sharply; he had begun to withdraw from peer relationships. The teacher decided to build self concept from an academic base and had amazing success. With a heavy schedule of positive reinforcement at school, combined with parent cooperation at home, Rick quite literally became a different child in the course of four weeks, academically as well as socially.

In Example C (see p. 8), a kindergarten teacher referred a child with excellent auditory skills who had difficulty with all tasks involving visual skills. Consequently, although he could say all of his numbers and letters perfectly by rote, he could not identify them by sight. This was a fascinating case of predictive testing going astray and experimental teaching giving the true picture. We hypothesized that the auditory approach would be the most efficient, and the results were dismal failure. When given a visual-haptic approach, the child learned all of the items required in less than three days.

Other teacher projects have included the areas of math concepts and computation, written composition, behavior modification, receptive and expressive language development, grammar, structural analysis skills, visual and auditory memory and sequencing, and spelling. Example D at the end of this paper is included in its entirety as a beautiful example of clearly defined objectives, a fascinating task analysis in the area of spelling, and experimental teaching methods for reaching the objective. Hopefully, these experiments carry over into regular classroom work. They reap benefits for groups within the class, and often the entire classroom enjoys a healthier, happier, more positive environment.

At the end of each four weeks, the most common complaint from the classroom teachers is, "We're EXHAUSTED!!" And so are we. It is an extremely intensive effort, requiring physical as well as mental endurance. Although sometimes discouraged, we usually feel that the view was worth the climb.
Example A

TASK ANALYSIS

Objective:

David will be able to sound out 32 two and three letter consonant blends and digraphs and apply them to an increase in rate for silent and oral reading.

Analysis:

1. Increase reading rate from 94 words per minute to 110.
2. Pronounce correctly phonetically sound words with the three letter consonant blends str, scr, spl, shr, spr, thr, and squ.
3. Pronounce correctly the three letter consonant blends with long and short vowel sounds for str, scr, spl, shr, spr, thr, and squ.
4. Pronounce correctly the three letter consonant blends str, scr, spl, shr, spr, thr, and squ.
5. Pronounce correctly phonetically sound words with two letter consonant blends bl, br, cl, cr, dr, fl, fr, gl, gr, pl, pr, qu, sc, sl, sk, sm, sn, sp, sw, st, and tr.
6. Pronounce correctly phonetically sound words with two letter digraphs ch, wh, sh, and th.
7. Pronounce correctly the two letter consonant blends with long and short vowel sounds for bl, br, cl, cr, dr, fl, fr, gl, gr, pl, pr, qu, sc, sl, sk, sm, sn, sp, sw, st and tr.
8. Pronounce correctly the two letter digraphs ch, wh, sh and th with long and short vowels.
9. Pronounce correctly the two letter consonant blends bl, br, cl, cr, dr, fl, fr, gl, gr, pl, pr, qu, sc, sk, sl, sm, sn, sp, st, sw and tr.
10. Pronounce correctly the two letter consonant digraphs sh, ch, wh, and th.
11. Pronounce correctly initial consonant sounds b, d, c, f, g, h, j, k, l, m, n, p, r, s, t, v, w, x, and z.

Methods:

1. Auditory - Vocal Method -- sound pronounced and vocal response given.
   a. color coded cards
   b. pictures in Phonics We Use
   c. Audio Flashcards (Electronic Futures, Inc.)
   a. Color coded cards               b. Audio Flashcards

Criterion Tests:

1. Test reading rate for a 5 minute session of silent reading.
2. Test for correct sounds of single consonants, three letter consonant blends, two letter consonant blends and two letter consonant digraphs.
3. Test for all sounds in #2 with long and short vowels and in nonsense words and phonetically sound words.

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Example B

I. Behavioral Objective and Task Analysis

When given an assignment Ricky will start work promptly, work at an average speed, and work with 90% accuracy.

II. Baseline Measure

Ricky's spelling book is used for this. The errors made in the last ten lessons were counted, added and divided by ten. The number of lessons finished per week was also noted. Ricky has finished an average of one lesson per week with thirteen errors.

III. Criterion Test

This test will be to average the amount of errors for each spelling lesson and to note the amount of lessons finished each week for the remaining two week period.

IV. Method

Previous to this time Rick has received little positive reinforcement for his work in spelling. Goals were not set on a weekly basis nor rewards given for work completed. A typical class grading system was used such as O.K., Correct, or underlining directions that were not followed and putting x's by incorrect answers. Rick's mistakes were pointed out to him as a result of wasting time getting started and then rushing to catch up.

For each of the next two weeks Ricky will be asked to set a goal of what he feels he can realistically accomplish in that time. More positive reinforcement will be used by the teacher. Instead of marking incorrect answers wrong, his correct answers will be marked right. There will also be more verbal praise for the time he does start work promptly and keeps at it instead of negative words for the times he doesn't. If he completes assignments promptly, he will be rewarded by being allowed to do something from his "Contingency List."

Along with this academic reinforcement in spelling, there will be more personal involvement between the teacher and Ricky in all academic areas, and to Rick as a person.
Example C

I. A. Behavioral Objective:

Given the upper and lower case letters of the alphabet visually, Tim will be able to say all of them. Also, when given the letters in groups of four, he will be able to point to the letter which is named by the teacher.

B. Task Analysis:

6. Letter discrimination
5. Letter recognition
4. Form discrimination
3. Form recognition
2. Auditory perception of sound similarities and differences
1. Language concepts: large, small, straight, curved, etc.

C. Criterion:

1. A visual recognition pre-test was given on all upper and lower case letters of the alphabet. Test results:

<table>
<thead>
<tr>
<th>Lower case</th>
<th>Upper case</th>
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</thead>
<tbody>
<tr>
<td>known</td>
<td>unknown</td>
</tr>
<tr>
<td>m</td>
<td>l</td>
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<tr>
<td>k</td>
<td>s</td>
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<td>i</td>
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</tbody>
</table>

D. Methods:

1. Audio flash cards: for five unknown upper and five unknown lower case letters a series of lessons was taped as follows:
   1st card, "This is capital F. What letter is this?"
   2nd card, "This is small f. What letter is this?"
   3rd card, "This is capital F and small f."
   4th card, "What letters are these?" (Ff)
   (Proved unsuccessful: out of ten letters, Tim learned only D and d after four days (½ hr. each) of the intensive instruction).

2. Visual haptic:
   a. Trace sandpaper letters with finger
   b. Teacher form letters on Tim's back
   c. Tim and teacher forming letters with body
   d. Tim forming letters with clay
   e. "Rainbow" writing of letters on blackboard
   f. Tim writing letters when spoken by the teacher.
Example D

I. **Behavioral objectives:**

Given the following lists of words orally (one at the end of each remaining week of the project) and given as long as he needs to write each word, Kirk will write 13 of the 15 words in each list correctly.

<table>
<thead>
<tr>
<th>List #1</th>
<th>List #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. world</td>
<td>1. word</td>
</tr>
<tr>
<td>2. worth</td>
<td>2. worm</td>
</tr>
<tr>
<td>3. heard</td>
<td>3. early</td>
</tr>
<tr>
<td>4. shirt</td>
<td>4. dirty</td>
</tr>
<tr>
<td>5. stir</td>
<td>5. firm</td>
</tr>
<tr>
<td>6. turn</td>
<td>6. purple</td>
</tr>
<tr>
<td>7. surface</td>
<td>7. burn</td>
</tr>
<tr>
<td>8. perfect</td>
<td>8. clever</td>
</tr>
<tr>
<td>9. fern</td>
<td>9. stern</td>
</tr>
<tr>
<td>10. report</td>
<td>10. porch</td>
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<tr>
<td>11. bored</td>
<td>11. born</td>
</tr>
<tr>
<td>12. snail</td>
<td>12. trailer</td>
</tr>
<tr>
<td>13. easy</td>
<td>13. real</td>
</tr>
<tr>
<td>14. heap</td>
<td>14. teacher</td>
</tr>
<tr>
<td>15. ready</td>
<td>15. heavy</td>
</tr>
</tbody>
</table>
II. Task Analysis - Spelling (Read from bottom up)

4. Integrative Skills
   a. sound-symbol relationships  
   b. visual-motor integration

10. schwa

9. vowels influenced by r

8. diphthongs

7. 3-letter consonant blends

6. vowel digraphs

5. long vowels

4. consonant digraphs

3. 2-letter consonant blends

2. single consonants

1. short vowels

3. Auditory, Visual, and Motor Skills, developing independently
   a. auditory skills  
   b. visual skills  
   c. motor skills

3. auditory memory and sequencing

2. auditory discrimination

1. auditory recognition

2. visual memory (form and letter)

1. visual recognition (form and letter)

2. Language Concepts

  g. left-right

  f. beginning, middle

  e. first, last

  d. before, after

  c. like, not like

  b. same, different

  a. front, back, etc.

1. Physical Readiness

  b. sufficient visual acuity

  a. sufficient auditory acuity

III. Criterion Measures

A pre-test was given, consisting of 40 words comparable to those he is studying in his language class. Kirk missed 30 of them. These 30 words were divided into two lists of comparable difficulty. One list will be given at the end of each week of experimental teaching. Criterion for success will be 13 of the 15 words (87% of them) spelled correctly in writing.
IV. Methods

Kirk made low scores on the ITPA in both visual and auditory sequencing. I want to give him training for the first week in visual sequencing, then see if there is carry-over to his spelling list; and training for the second week in auditory sequencing, and see if this carries over to his spelling list. Then I'll be able to compare results of the two methods in terms of

1. which helped more with his spelling
2. is there carry-over from the activities to the academic work?

V. Description of Experimental Teaching Methods

First week (visual memory and sequencing)

A. Monday

1. Given a 10 second look at a basket containing 7 small items, and as many tries as he needs to succeed, Kirk will be able to remember and name them all when the basket is removed.

2. Given the same basket of things with one item removed, Kirk will be able to discover and tell "What is missing?"

3. Given a look at as many as five of the things from the basket arranged in a certain order, Kirk will be able to re-order them in the same way after I've mixed them up. He will close his eyes while I'm mixing them up, He will be able to do this by the third try

4. Given a chance to watch me arrange a circle, triangle, rectangle and square in a certain order, Kirk will put his in the same order without looking at the model.

B. Tuesday

1. Given a 5 to 2 or so second look at a design drawn on paper, Kirk will be able to remember and draw it on his paper. Exposure time will decrease; difficulty of design will increase. Kirk will be allowed three "looks" to succeed if he needs them.

2. Given a 1 or 2 second look at a combination of numbers and letters on the chalkboard, Kirk will be able to write them in order on his paper when they have been erased. He will be able to do up to five letters and numbers in order.
C. Wednesday

1. Given a 1 or 2 second look at a license plate number printed on tagboard, Kirk will reproduce it on his paper on the first try.

D. Thursday

1. Given his list of 15 spelling words, Kirk will go through the following steps with each word.

   A. Using "Scrabble" letters, he'll choose the correct letters and copy the scrabble model of the word.

   B. He'll read the word.

   C. He'll dump his letters, mix them up, and reproduce the word without looking at the model.

   D. He'll check with the model; if he's wrong, he'll look at the model and try again.

   E. He'll dump his letters and put the word on squared paper, a letter to a square.

   F. He'll check, and try again if necessary.

   G. Given each word from the squared paper cut apart and mixed up, he'll re-order the letters correctly.

   H. He'll check and try again if necessary.

   I. He'll write the word once again on squared paper and check it.

E. Friday

Given each of the 15 words in his list orally, Kirk will write 13 of the 15 words correctly.
VI. Experimental teaching
Second week (auditory memory and sequencing)

A. Monday

1. Given a chance to hear a simple rhythm beat on a drum, Kirk will remember and repeat it. He will close his eyes to listen. He'll be given as many tries as he needs, unless it becomes frustrating to him.

2. Given an oral series of from three to six numbers, Kirk will form the sequence with numbers printed on cards. He'll have three tries if he needs them.

B. Tuesday

1. Given a sequence of verbal directions (up to six things to do) Kirk will follow them in order.

2. Given a verbal series of letters and numbers, Kirk will write them in order.

C. Wednesday

1. Given verbal directions to put 4 to 6 things on paper, Kirk will remember and put them down in the order they were given. He will be given up to three chances to succeed.

D. Thursday

1. Kirk will have auditory-vocal exposure to the 15 words in his spelling list in the following way:
   a. He'll listen as I spell each word to him.
   b. He'll have as many chances as he needs to repeat each spelling correctly.

E. Friday

1. Given each of the 15 words in his list orally, Kirk will write 13 of the 15 correctly.