Sensorimotor signing for the preschool moderately retarded child

Marcie Sweeney
SENSORIMOTOR SIGNING
FOR THE
PRESCHOOL MODERATELY RETARDED CHILD

A Project Proposal Submitted to the
Faculty of the School of Education in Partial
Fulfillment of the Requirements of the
Degree of
Master of Arts
in
Education: Special Education Option

By

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San Bernardino, California
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APPROVED BY:
SENSORIMOTOR SIGNING COMMUNICATION

A CURRICULUM FOR THE PRESCHOOL
MODERATELY MENTALLY RETARDED
Sensorimotor Signing
for the
Preschool Moderately Retarded Child
Birth to 1 1/2 months: Learning Comes From Looking
1 1/2 to 3 1/2 months: Hands Get Into the Act
3 1/2 to 5 1/2 months: Reach and Grasp
5 1/2 to 8 months: Experimenting with Cause and Effect
8 to 14 months: Exploring Places and Examining Things
14 to 24 Months: Play – the Work of Toddlers

(Burtt, Kent Garland and Kalkstein, Karen, 1981)
Regardless of the method a person uses to communicate - the important fact is that they can indeed express themselves.

Two million people in the United States today are unable to speak.

(Sign at Casa Colina Diagnostic Center, 1984)
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THE NUTS AND BOLTS OF THE SENSORIMOTOR SIGNING CURRICULUM;
OR HOW DOES ONE USE THE CURRICULUM FOUND IN SENSORIMOTOR SIGNING?

1. First, preview the shaping of a signed concept.
2. Choose 3-6 words/concepts to begin the teaching year with.
3. Learn and practice the sign.
4. Choose one activity for each sign and follow the steps found in
   "Shaping of a Signed Concept." Each activity will include a natural
   stimulus and consequence.
5. Do that activity daily for 3-6 weeks or until at least 1/2 of the students
   show behavioral signs of knowing what to do in the activity. The same
   type of activity can be transferred across different signs and concepts.
   Do at least 3 signs/concepts/activities daily.
6. Teach the same sign with a new or different activity. See sections,
   Variations of the Same Sign and Providing Sign Generalization.
7. Begin by spending 10-20 minutes with one sign, one concept, one
   activity. As children acquire signs, spend 20-30 minutes adding the
   number of concepts and signs introduced at one time segment.
8. Reintroduce signs at least twice weekly even after spontaneous signing
   occurs when the children are presented with the concept stimulus.
9. Teach the sign/word/concept across people, places and situations.
   Just changing the location of an activity and sign facilitates
   generalization.
10. In the first two months, teach only one word signs at a time. As the
    child spontaneously signs one word concepts, slowly shape the child’s
    response to two word response (eat, eat please, want eat, me eat).
11. Provide success daily with each sign/activity.

12. Each sensorimotor activity will present a natural antecedent stimulus, (i.e., show an apple) presented simultaneously with the sign (apple) and the word (apple), mold the child's hand to the correct (or approximate) sign (apple sign), and again reinforce the verbal word/concept and sign (say apple, sign apple), then allow the child to manipulate the natural, inherent consequence (hold or taste the apple) in conjunction with social praise (good signing apple). This activity would be repeated until each child has had a turn.

13. Be creative and adapt the program to the needs of the students.

14. Each section includes signs, pictures, and activities. Some sections include coloring pictures.

15. The activities support the use of Piaget in conjunction with teaching a sign, thus creating Sensorimotor Signing.

16. The pictures are utilized to aid the reader in a visual presentation of preschool Down's Syndrome children signing and becoming active participants in their environment. Although perhaps not necessary, the author wanted to concretely portray the combination of a visual mode of communication and Piagetian active exploration activities visually. Hopefully, the pictures will facilitate the reader in understanding the curriculum design of Sensorimotor Signing.

17. Most signs were taken from the sign language book entitled *Sign Language For Everybody* by Jeanne Huffman & Clearest; Bobbi Hoffman; David Gansee and Anne Fox, 1976. (This sign manual is the easiest from which to make master dittos. Other signs were taken from grouped signed sheets prepared by Patty Chatfield Herrera with East Valley Special Education...


19. The art work on the cover sheets was done by Patty Chatfield Herrera, a program specialist with East Valley Special Education Local Plan area.

20. The activity pictures involving children included Tim Hall, three pictures of Tabatha Hernandez, and one picture of Francis Arvize.

21. The curriculum may only include "New Signs by Month" and "50 Expressive Words Most Likely to Learn" or be expanded to be a very versatile and advanced program. Therefore, an expanded sign vocabulary has been included within the curriculum. In this way, as daily events occur, there is within the curriculum a resource for signs/words spontaneously needed.

22. Remember that the program builds receptive language and a schema (a foundation) of experiences and interaction with the child's world. A signed concept may take 50-150 trials of repetition before a child spontaneously imitates the concept or spontaneously signs apple upon seeing an apple. The first signs and activities will take the longest period of acquisition. Approximately 50% of the children will give consistent expressive signing around the seventh month of the program.
From then on, concepts and signs will emerge at a faster rate and less trials. The child has learned that everything has a name and that signs are labels or symbols for that name. Most likely some vocalization will occur in the second year of programing.

23. The program implementor needs to start slowly. He/she can build and integrate signed concepts and their activities as he/she feels comfortable and according to how rapidly the students acquire the concepts. Hopefully, by the end of the first year, signed concepts and activities can be utilized in the total school day.

24. HAVE FUN!!! PERSEVERE!!!!
II
SENSORIMOTOR SIGNING UNITS

Since all daily activities need to be introduced with a sign and then followed with an active, participatory activity, the curriculum has been divided into several units which encompass a child's day. For assistance in deciding what words and experiences are found in a particular group's daily environment, see page 30, entitled Environmental Inventory, (Carlson, October, 1981). Each unit will include signs, activities and pictures. Additional information will be found under each unit.

A. Necessary Information to Review Before Beginning Sensorimotor Signing

1) Nuts and Bolts of Sensorimotor Signing
2) The Shaping of a Signed Concept
3) The Foundation of Communication prerequisites
4) Variations in Teaching the Same Sign: Apple
5) Providing Sign Generalization: Apple
6) Communication Training: Sign Reading Skills
7) Possible Candidates For Signing
8) Example of Programing For Signs
9) A Suggested Introduction of New Signs by Month
10) 50 Expressive Words Most Likely to Learn
11) Directions to Sign Evaluation
12) Sign Evaluation
13) Tentative Activity Calendar
14) Sample of Activity Form
15) Table of Activities
B. Colors (which develop environmental awareness and seriation).
   1) This section includes the American Sign Language Alphabet
      and signed numbers
   2) Hints for Teaching Colors
   3) A variety of activities involving colors and perceptual
      building concepts.

C. Food (relevant, functional and tangible)
   1) This section includes first foods
   2) Breakfast
   3) Snacks
   4) Lunch and dinner
   5) Coloring sheets
   6) Activities around food

D. Discipline and Directions (necessary in developing classroom
   activities)
   1) This section includes examples of Discipline Signing
   2) Specific activities to further instill discipline concepts

E. Emotions, Feelings and Our Senses (imperative to sensorimotor
   development)
   1) This section includes "emotional faces"
   2) Activities involving the senses

F. Daily Needs/Living (necessary to basic survival)
   1) This section has many areas of signs, including basic need signs,
      manners, daily needs, signs for significant others, sample commands,
      body parts, and simple daily activities.
   2) Also included: How to Involve Significant Others in a Signing
      Program
3) Activities grouped in categories including: At the table, toilet, pool (dressing/undressing), grooming, nap time, observing and knowing our body parts, time to leave school, learning our names, and holiday signs for fun.

G. What We Do: Verbs and Movement (essential to the development of the child)

1) This section includes animal signs utilized with the activity and sign pull.

2) Movement activities that provide concept generalization and active movement interaction with the environment.

H. Objects and Places Found in the Daily Environment (to stimulate object grasp and labeling which are also vital to survival and communication).

1) This section includes several variations in training object recognition.
NECESSARY INFORMATION TO REVIEW

BEFORE BEGINNING SENSORIMOTOR SIGNING
Exclaim: Very Good! or
Good signing apple!
Sign good.

Then go on to the next child; say their name.

Show the object or picture.
Say and Sign, This is an apple.
Ask, What is this? Respond and Say/Sign apple.
Mold the child's hand/s into apple, verbalize apple.
Say and Sign good signing apple.

Allow the child to hold the apple!!

(For preschoolers good and thank-you are used interchangeably; but, within context.)

Allow the second child to hold the apple. Sign and Say, Give the apple to the second child. Gesture from the first child to the second child.

Follow this procedure, until everyone has had a turn.
The Shaping of a Signed Concept (Continued)

A. After two months, wait 15/30/60 seconds before molding the child's hands into a particular sign. If the child does not initiate the sign, mold his hands. (This is a fading cue process).

B. After 3-4 months, fade the response of apple after asking "what is this?" If no response, ask the question again and then sign/say apple.

C. After 4-7 months, show the picture/object and wait 15/30/60 seconds before signing and saying apple. If the child does not spontaneously sign apple, ask "What is this?" Sign and say apple.

D. A child who achieves Step C is ready for a delayed consequence fading. Wait 15/30/60 seconds before allowing child to hold object/picture.

E. As concepts are introduced, put up the picture (Peabody pictures are excellent) at eye level of the children. Sometimes at playtime you, the teacher, practice the concepts. This will instill modeling and self-initiated practice. Concepts learned for only 5 minutes a day in a group do not lead to mastery. (Note: Cover pictures with acetate or vinyl, self-adhesive-clear. Otherwise, sticky hands and curious bodies could destroy).

F. By the 8th or 9th month, some children will begin to verbalize while signing. Encourage both responses. Say and sign apple.

G. As the child begins to say the word apple, fade the sign, allow them to only say the word.

H. Do not despair! First signs take the most time to master. The children are learning that signs are names and concepts.
THE FOUNDATION OF COMMUNICATION PREREQUISITES

Beside teaching signs through experience, the instructor is laying a solid foundation of communication prerequisites. If few signs occur during the first six months, but these behaviors have become consistent in the child's repertoire of interactions, success has been achieved!

Interacts with environment.

- focuses on objects
- follows moving objects visually
- points or reaches for desired object
- grasps or holds objects
- actively retrieves objects
- manipulates objects
- explores environment

- visually
- physically

Shows a desire to communicate.

- attempts to get attention by
  - using eye contact
  - using voice
  - using touch
- attempts to express needs by
  - pointing or reaching
  - looking at
  - vocalizing for
  - random gesture
The Foundation of Communication Prerequisites (Continued)

___ attends to those attempting to communicate with him

___ auditorily

___ visually
Do the sign with your hands-on their body.

Sit with the child on your lap in front of a mirror. Show them the sign. Say apple. Mold their hand/s into apple. Say apple. Have the child look in the mirror.

Have the child teach Mom.
Outside on the lawn

At play

With a parent, the bus driver, the speech therapist or classroom attendant

Choosing between two or three fruits/choices
Finding the object

Seeing the object in an unexpected place.

Manipulating the object in an unusual method.

At home
At a restaurant
At a store
On the bus
In the car
Anywhere
Communication Training

Sign Reading Skills

1. Given a demonstration of a sign, and several pictures of signs, the child selects the correct picture.

2. Given a picture of a sign, the child correctly imitates that sign.

(Potocki, Patricia A.; Miller, Barbara L., 1980)
Communication Training
Sign Reading Skills

3. Given a demonstration of a sign, a picture of that sign, and a set of objects, the child selects the correct object.

4. Given an object, a demonstration of its sign, and a set of pictures of signs, the child selects the correct picture.

(Potocki, Patricia A.; Miller, Barbara L., 1980)
Communication Training

Sign Reading Skills

5. Given a set of objects and a set of corresponding pictures of signs, the child matches them correctly.

6. Given a set of pictures of objects and a set of corresponding pictures of signs, the child matches them correctly.

(Potocki, Patricia A.; Miller, Barbara L., 1980)
<table>
<thead>
<tr>
<th>Needs Assessment</th>
<th>Strong Candidate</th>
<th>Questionable Candidate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Level</td>
<td>Early Preoperational (Above 2 1/2 years)</td>
<td>Late sensori-motor (s/m) Stage VI (18-24 months) (Poor) Below s/m Stage VI (Below 18-month level)</td>
</tr>
<tr>
<td>Chronological Age</td>
<td>Generally above 2 1/3 years Decision not dependent on C.A.</td>
<td>(same)</td>
</tr>
<tr>
<td>Verbal Comprehension</td>
<td>At least 1 year above production</td>
<td>Less than 6-month discrepancy with expressive skills (Poor) Limited meaning associated with words</td>
</tr>
<tr>
<td>Intentional Communication</td>
<td>Varied, consistent means to express intent, needs, perceptions</td>
<td>Highly restricted gestural, vocal performatives (share/request/comment/inform/ask/protest)</td>
</tr>
<tr>
<td>Manual Dexterity</td>
<td>Independent, controlled finger, hand, arm movements</td>
<td>Labored, inconsistent, imprecise movements</td>
</tr>
<tr>
<td>Imitation/Retention of Signs</td>
<td>Attends well to model, self-corrects, consistent production, deferred imitation</td>
<td>Needs numerous presentations/prompts. Cannot produce after time delay</td>
</tr>
<tr>
<td>Interest in Signing</td>
<td>Seeks out new signs/prefers sign versus other mode</td>
<td>Does not focus on signer/resistive to sign training/learning rate better in alternative system</td>
</tr>
<tr>
<td>Speech Production</td>
<td>Unintelligible or highly restricted phonetic repertoire</td>
<td>Articulation patterns consistent with developmental level</td>
</tr>
<tr>
<td>Speech Intervention</td>
<td>Minimal vocal/verbal changes after 6 months therapy</td>
<td>Steady increase in vocal/verbal behaviors with therapy</td>
</tr>
<tr>
<td>Family Support/Training</td>
<td>Family wants sign program/family training available on weekly basis</td>
<td>Signs restricted to classroom/no family training commitment</td>
</tr>
<tr>
<td>Staff Knowledge of Language Development</td>
<td>Information recent in structural/content/pragmatic (functional) areas</td>
<td>Limited understanding of signing as a language system</td>
</tr>
</tbody>
</table>
### TABLE I

**Possible Candidates for Signing**

<table>
<thead>
<tr>
<th>Needs Assessment</th>
<th>Strong Candidate</th>
<th>Questionable Candidate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff Support/Training</td>
<td>Staff committed to sign program/ provides for regular training sessions</td>
<td>Responsibility for sign program assumed by single staff person</td>
</tr>
<tr>
<td>Staff Signing Ability</td>
<td>Fluency can meet child's signing objectives</td>
<td>Limited knowledge of sign systems or sign production</td>
</tr>
</tbody>
</table>
## ENVIRONMENTAL INVENTORY

<table>
<thead>
<tr>
<th>Time Length</th>
<th>Setting</th>
<th>Area</th>
<th>Participatory activities</th>
<th>Observed activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequent</td>
<td>Home</td>
<td>Bedroom</td>
<td>Sits; bats at toys; looks at books; sleeps</td>
<td>sis play guitar; Mom reads; Jim plays cars; room cleaned</td>
</tr>
<tr>
<td>Frequent</td>
<td>&quot;</td>
<td>Kitchen</td>
<td>Eats; sits it special chair</td>
<td>Mom cooks; Sis does dishes; radio on</td>
</tr>
<tr>
<td>Occasional</td>
<td>&quot;</td>
<td>Playroom</td>
<td>Lays on floor</td>
<td>Other children play; cleaning</td>
</tr>
<tr>
<td>Frequent</td>
<td>School</td>
<td>Ask the teacher; I don't know this information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rare</td>
<td>Grandmas</td>
<td>Livingroom</td>
<td>Lays on floor; sits on lap</td>
<td>People talk; Grampa dances</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>John can't go into any other rooms at Grandma's; there are too many steps.</td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>Grocery Store</td>
<td>It's too hard to get him there so he's left at home.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## FORMAT 2: VOCABULARY LIST

<table>
<thead>
<tr>
<th>Area: Playroom (NE corner)</th>
<th>Date: 1-6-80</th>
<th>Cataloger(s): Mom and Sis</th>
</tr>
</thead>
</table>

### Categories

<table>
<thead>
<tr>
<th>People</th>
<th>Actions</th>
<th>Places</th>
<th>Feelings</th>
<th>Silly words</th>
<th>Etc.</th>
</tr>
</thead>
</table>

- **Concept or words**
  - Jim**++** hit## floor**++** sad## fooey##
  - me**++** kick## here* mad## p-p-p-p *##
  - Gramp sit## outside* angry## hic#
  - you**+** bounce## wall# bad# looney##
  - Mom*## run## wall# happy##
  - lay**

* Concepts within the child's experience.
# Concepts at the child's developmental level.
+ Concepts of interest to the child

*(Carlson: Selecting Vocabulary; October, 1981)*

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<th>General Focus/Degree of Structure</th>
<th>Classroom/Home Setting(s)</th>
<th>Goals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquisition</td>
<td>1:1 Sign instruction</td>
<td>To learn how to form signs.</td>
</tr>
<tr>
<td>Formal: Highly Structured</td>
<td>Snack</td>
<td>To gain confidence in forming signs.</td>
</tr>
<tr>
<td></td>
<td>Story</td>
<td>To acquire mnemonic devices, i.e., initialization and associations.(^a)</td>
</tr>
<tr>
<td>Transfer &amp; Maintenance</td>
<td>Snack/Meals</td>
<td>To begin to form combinations of signs.</td>
</tr>
<tr>
<td>Semi-Formal: Semi-Structured</td>
<td>Story</td>
<td>To learn new signs.</td>
</tr>
<tr>
<td></td>
<td>Music</td>
<td>To learn and read signs, i.e., to understand other's signs.</td>
</tr>
<tr>
<td></td>
<td>Child-directed play</td>
<td>To establish a core of signs and to increase variety.</td>
</tr>
<tr>
<td></td>
<td>Walks</td>
<td>To begin communicative use of signs.</td>
</tr>
<tr>
<td></td>
<td>Dressing</td>
<td>To begin to self-correct production with and without prompts.</td>
</tr>
<tr>
<td></td>
<td>Bathing</td>
<td>To increase communicative use to communicate in familiar settings/situations.</td>
</tr>
<tr>
<td></td>
<td>Academic Instruction</td>
<td>To practice for fluency (retrieval &amp; formation).</td>
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<tr>
<td>Generalization</td>
<td>Snack/Meals</td>
<td>To self-correct production.</td>
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<td>Informal: Natural</td>
<td>Story</td>
<td>To self-correct use of signs, i.e., to use the appropriate sign.</td>
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<tr>
<td></td>
<td>Music</td>
<td>To increase the use of sign combinations.</td>
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<tr>
<td></td>
<td>Child-directed play</td>
<td>To begin using signs as a language system.</td>
</tr>
<tr>
<td></td>
<td>Riding in the car</td>
<td>To spontaneously use signs to communicate.</td>
</tr>
<tr>
<td></td>
<td>Trips to the zoo, beach, grocery store, shopping, movies</td>
<td>To demonstrate confidence in using signs to communicate in a variety of settings/situations, with a variety of people.</td>
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<tr>
<td></td>
<td>Walks</td>
<td>To help other children/adults understand and learn signs.(^b)</td>
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<tr>
<td></td>
<td>Gross Motor Skills/Games</td>
<td>To teach children and other adults signs and how to read signs.</td>
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<td>Bathing</td>
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\(^a\) Adult goal.
\(^b\) Child goal.
A SUGGESTED INTRODUCTION OF NEW SIGNS BY MONTH

SEPTEMBER
Wake up Song
Red
Thank you
Milk please
Eat please
Apple
Popcorn
Wake up, red
Grace
Eat please, etc.
Sugar (dessert)
Water
No
I love you

OCTOBER
Orange
More
Look
Pick up toys
Watermelon
Strawberry
Animal
Book
Cookies

Sit
Now
Please
Potty
Head
Color generalizing
Birds
Elephants
Come
Sleep
Find your cards
Which color
Yes

Applesauce
Banana
Play
Crawl
Pay attention
Angry
Mouth
Walk
NOVEMBER

Brown  Toast
Jump  Slide
Milk  Cone
Cereal  Eggs
Sleep  Skate
Orange juice  Pig
Soup  Ice cream
Crackers  Apple pie
Blue  Butter

DECEMBER

Sandwich  Nose
Hamburger  Baby
Hot dog  Kiss
Smell  Green
Apple, orange, banana-differentiation  Red
Tree  Stop and go
Wait  presents

JANUARY

Open please  Work
Begin names and signs  Cat, dog
Hands  Feet
Mommy  Brother
Daddy  Crackers
Me  Cheese
Sister  Colors
Body parts  Blue
JANUARY (Continued)

Color matching

My name is

FEBRUARY

Emotions, sad, happy, angry, sick

Soup

Touch

Tricycle

Soft

Taste

Fire truck

Hard

Monkey

Hot, cold

Swim

MARCH

How are you today?

Peanut butter

Bacon

Colors

Fine

Body parts

Sharing

Animal

Rain

Train

APRIL

Girl

Boy

I want to eat please

I want milk please

Shoes

Socks

Car

Vegetables

Carrots

Corn

I want a hug please

In, out

Wash table

Conversation

Hi

Will you be my friend

Squash

Beets

Body parts
MAY

Big
Little
Lettuce
Tomatoes
Up
Down
Fun
Funny
You
Time to go home

Beans
Potatoes
Cheese
Boat
While
Black
Purple
Grass
Flowers
### ASSESSMENT GUIDE:
50 Expressive Words Most Likely to Learn By the End of the Year

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35
DIRECTIONS TO THE SIGN EVALUATION

1. Find the word/sign using. Mark the date introduced. If desired, insert activity # in this square.

2. Check receptive square (utilizing program implementer's judgment) when the child internally knows the concept apple. A matching activity can facilitate this assessment.

3. Check the imitation square when the child imitates the sign, i.e., apple, upon seeing the apple and the sign for apple. (The child no longer needs to be physically guided or have his hands molded by the instructor.)

4. Check the verbal clue when the child hears the word apple and signs apple with no prompting other than the verbal word.

5. Check the spontaneous square when the child signs apple upon seeing the picture or object apple without any verbal or sign clue.
## SIGN EVALUATION

### SIGNS I'M SURE THEY KNOW

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# SIGN EVALUATION

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Child's Name ____________________________

38
Child's Name ____________________

SIGN EVALUATION

SIGNS I'M SURE THEY KNOW

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### SAMPLE COMMANDS

- Hang up your coat
- Brush your teeth
**Child's Name**

**SIGN EVALUATION**

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Child's Name

SIGN EVALUATION

SIGNS I'M SURE THEY KNOW

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Child's Name _______________________

SIGN EVALUATION

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TENTATIVE WEEKLY ACTIVITY CALENDAR (Example)

WEEK 1 Weekly Themes - Popcorn, red, apple, sit down, pull, toilet, see, eat, walk

DAY 1
Enter and groom (hang up coat, toilet)
Walking around classroom (walk)
Red everywhere in classroom (see/red)
Sit down at table (red, pull, apple) (toilet and wash hands)
(out, to play)
Lunch (sit down, eat) (toilet, wash hands, rest) (out, play)
Sit down at table (review red, apple, pull)

DAY 2
Enter (take off coat, toilet)
Walk around school (walk, see)
Make popcorn (popcorn)
Jump & walk to music (jump/walk)
Sit down at table (red, pull, apple) (toilet, wash hands)
(out, to play)
Lunch (sit down, eat, toilet, wash hands)
Play and see outside (review red, popcorn, apple, ball)

DAY 3
Do the same as Day 1

DAY 4
Do the same as Day 2

DAY 5
Review and reinforce weekly signs

Comments and Growth: Children's hands mold with resistance. Children enjoyed making popcorn. 4th day anticipated eating popcorn. No spontaneous ability to toilet, wash hands, recognize red or apple.
TENTATIVE WEEKLY ACTIVITY CALENDAR

WEEK 1

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5

Comments and Growth:

____________________________________________________________________

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TENTATIVE WEEKLY ACTIVITY CALENDAR

WEEK 1

DAY 1

DAY 2

DAY 3

DAY 4

DAY 5

Comments and Growth: _______________________________________

__________________________________________________________

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SENSORIMOTOR SIGNING

A PRESCHOOL SIGN AND ACTIVITY MANUAL

FOR MODERATELY RETARDED CHILDREN
SENSORIMOTOR SIGNING
for the
Preschool Moderately Retarded Child
I CAN SIGN MUSIC. I CAN PLAY MUSIC.

COME AND LEARN TO SIGN
AND TO BE AN ACTIVE
PARTICIPANT IN OUR
WORLD.

MY ENVIRONMENT AND
WITH
ACTIVITY

AND TO INTERACT

COMMUNICATION

SIGN

FROM TIM: I AM A DOWN'S SYNDROME CHILD. I HAVE LEARNED TO

DIEHDM IM FROM TIM!! I AM A DOWN'S SYNDROME CHILD. I HAVE LEARNED TO

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**DAILY LIVING: INVOLVING SIGNIFICANT OTHERS**

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SAMPLE OF ACTIVITY FORM

NAME OF ACTIVITY:

SIGNED WORD/CONCEPT:

WHY THIS CONCEPT:

PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED:

NATURALISTIC CONSEQUENCE/REINFORCEMENT:

CONCEPTS TAUGHT:

MATERIALS NEEDED:

PROCEDURES:

VARIATIONS:

COMMENTS:
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**Signed Word/Concept:**

**Why This Concept:**

**Senses Utilized:**

**Motor Movement Involved:**

(Other than sign)

**Piagetian/Developmental Concepts Utilized:**

**Naturalistic Cue:**

**Naturalistic Consequence/Reinforcement:**

**Concepts Taught:**

**Materials Needed:**

**Procedures:**

**Variations:**

**Comments:**
108 OTHER ACTIVITIES

OR

SUGGESTED IDEAS

NOT PREVIOUSLY MENTIONED
1. Playing with Playdough colors
2. Musical colors

FOODS
3. Drink of (Water please)
5. Peeling and munching carrots (many older retarded children have never used a potato peeler. An excellent way to develop independent skills and healthy nutritional habits).
6. Food Bingo
7. Rolling tortillas into binoculars and looking at the world (see)
8. Breakfast at McDonalds
9. Eating out
10. A picnic at the park
11. Naming and shopping for fruits; shopping for a meal
12. A fruit: Parts to whole, whole to part
13. Match the fruit to the picture
14. See, touch, taste the apple
15. Matching fruit colors to its color
16. Making and asking for scrambled eggs
17. Which box has the cookie under it?
18. Blending eggs, milk and bananas
19. Make a cookie face
20. Making lunch
21. Out of 5 fruits, give me the apple
22. Fruit or vegetable
23. Making cold homemade ice cream
24. Choose a fruit
25. Peanut butter and jelly sandwiches
26. Water please/milk please
27. Making toast
28. Making ice cream cones
29. Making orange juice
30. Making hot chocolate
31. Potatoes, potatoes and more potatoes
32. Making cookie shapes
33. Making cookie faces
34. Opening soda pop
35. Find the picture on the wall
36. Practice the picture on the wall
37. Stand up/sit down
38. The people on the bus go up and down
39. Make this sign and shake the rattle
40. Find your circle
41. Yes/No
42. HELP! or Help me please!
43. Make a face. What does this face say?
44. Acting out and imitating emotions
108 Other Activities (Continued)

45. The seeing book
46. Smelling jars
47. The feeling book, board, cube; The feeling box
48. Sugar and salt: Are they the same or different?
49. Peek-A-Boo
50. Feeling with one's hair and feet
51. Noises, noises, noises
52. Noisemakers
53. Popcorn balls
54. Find the sound
55. Chocolate pudding finger painting
56. The blindfold and touching
57. The blindfold and hearing
58. Touching everything
59. Scratch and sniff stickers
60. A taste of this and a taste of that
61. Does it taste like it smells?
62. Mud! Mud is fun! (See picture)
63. Mr. Potato Head (A great way to teach and match body parts)
64. Mirror, mirror on the wall (Matching body parts)
65. Simon says
66. Body parts during the bath
67. Classroom scrapbook
68. Family album
69. The corner of significant other pictures
108 Other Activities (Continued)

70. The doll uses the toilet
71. Help each other get dressed
72. Books are to read, not tear
73. Trying out the toilets in the stores
74. Flush the toilet
75. Put your baby to sleep
76. Pin up a body part
77. Where is the doll's head?
78. Where is the toilet? Where is the sink?
79. Shampooing our hair
80. Washing with water. Washing everything
81. Warm water/cold water
82. Giving water to the Guinea Pig
83. Rain is water
84. What are you wearing?
85. Who is a girl? Who is a boy?
86. In and out go the arms
87. Dressing up the doll
88. Running errands around school
89. Catch the bubbles (Children love to chase magical bubbles)
90. Give, get, bring the ball
91. Roll the giant ball
92. Verbalize and sign child's movement
93. Building towers
Other Activities (Continued)

94. In and out of the bucket go the blocks
95. Hide and seek
96. Playing at the park
97. Tight spaces
98. Obstacle course to lunch
99. Let's explore the balance beam
100. The hockey pokey
101. Reach for an object (6-9 months)
102. Put the ball on the picture of the ball
103. Given an object, the child signs it's name
104. Put down the ball, pick up the telephone
105. Make Snoopy (a puppet) pick up the picture of the ball
106. Sign labels on objects
107. Toys, toys, toys everywhere
108. Magical object bag
SIGNING RED AND PLACING THE RED RING ON THE POLE
MORE COLOR FUN

SIGNING AND POUNDING GREEN

MOLDING THE COLOR BLUE.
FUN WITH PLAY DOUGH.
MORE COLOR FUN

LEARNING TO WRITE MY NAME IN BROWN

BROWN MUD HAS MANY CREATIVE USES! I WASH OFF!
No sign language manual is complete without the sign language alphabet. Since many signs, including colors, use the alphabet, the alphabet has been included in the Color Section.

Nor is a sign language manual complete without the number shapes. Many signs are made from number shapes. Included are the numbers 1-12.
Most signs were taken from the sign language book entitled *Sign Language For Everybody* by Jeanne Huffman; Bobbi Hoffman; David Gansee and Anna Fox, California: Joyce Media, Inc., 1975.
Represents color spectrum of rainbow.

**color**

Lipstick on the lips.

**red**

Squeezing juice from an orange into mouth

**orange**

Indicates dark skin.

**brown**

Emphasis on the first letter of the word

**green**

Shows color of a white T-shirt

**white**

83
Indicates dark eyebrows.

**black**

emphasis on the first letter of the word

**yellow**

emphasis on the first letter of the word

**purple**

emphasis on the first letter of the word

**blue**
HINTS FOR TEACHING COLORS

Colors are presented in recommended teaching order.

1. To ask "What color is this?", sign color and look at the child.

2. Red is vivid, easy to learn and a good color to begin teaching the concept that symbols are language, resulting in communication and understanding. Teach only red (to this population) the entire month of September. Emphasize matching skills.

3. Orange is taught in October and November (Halloween and Thanksgiving). Review red, integrate the two colors, begin the concept same color/different color. Use orange in 3/4 of your art activities.

4. Introduce brown in November, reemphasize orange, emphasize recognition skills.

5. Introduce green in December, reemphasize red. Begin seriation skills. Filter white into art activities.

6. Introduce blue in January, incorporate white. Build seriation, same, different, matching, and recognition skills.

7. Introduce yellow in February, restress red. Show how red and yellow make orange (this concept won't be mastered, but can be fun).

8. March is a review and color recognition month.

9. Introduce purple in April.

10. Introduce black in May. The two colors of purple and black will most likely not gain success until year two.

11. Use spring to facilitate color mastery.

12. June is color assessment provided in many situations, objects and places.
COLOR

ACTIVITIES
ACTIVITY # 1

SECTION: Colors

FORMALxINFORMALxTEACHING STRATEGY

(Circle one)

SENSES UTILIZED: Sight, hearing, tactual, and kinesthetic.

MOTOR MOVEMENT INVOLVED:

(Other than sign)
Touching and walking and reaching.

NATURALISTIC CUE:

Different places where red can be found.

CONCEPTS TAUGHT: The color red is red in many places, other colors, looking for color.

MATERIALS NEEDED: Three places where a red object or the color red is hung.

PROCEDURES: Seat the children in a row of chairs. Show a color red. Sign/say (red). Choose a child and say, "Let's find (red)." Take them to the first place where red is. Sign/say (red). Mold their hands into (red). Take them 10 feet further and sign/say (red). (Have something red there). Have them touch the red color. Mold their hands into (red), (good). Go to the third place. Have them touch and see the red. Sign/say (red). Mold their hands into (red), (good). Return to seat. Hug. (Good, showing me red). Attention span is only 4-6 minutes. Do three times a day with only a third of the class at a time (or 4 times a day with a fourth of the class each time.

VARIATIONS:

Look for red outside. Look for red on people's clothes. Have a day where everyone wears only red (or a week). Make red jello.

COMMENTS: Introduce only red for the first month. Do this activity every day. The consistent, many, persistent trials will pay off. Patience, a concept and foundation is being developed. Color is a higher cognitive level, but can be readily found in the environment.

NAME OF ACTIVITY: Colors, Colors, Colors Everywhere.

SIGNED WORD/CONCEPT: Various colors

WHY THIS CONCEPT: To learn to generalize colors. A color must be in more than one place.

PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED: Sensorimotor phase of development 2 years, 6 months.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Walking to different places with color social reinforcement.
NAME OF ACTIVITY: Stacking colors.

SIGNED WORD/CONCEPT: Names of colors, on.

WHY THIS CONCEPT: Builds seriation skills, large to small, color recognition, eye-hand coordination.

PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED: Seriation; 2-4 years old. Object grasp 7-12 months.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Placing a ring on the stack.

CONCEPTS TAUGHT: Colors, seriation, visual memory, taking turns, eye-hand coordination.


PROCEDURES: Seat children in a semi-circle. Show the rings. (Follow the shaping of a signed concept.) Remove the rings, signing/saying each color. Hold up the largest ring and sign/say (what color) is this? (red). Help each child sign (red). Pick a specific child and sign/say (what color) is this? (red). After this, child with help signs (red). Allow them to place a ring on the stack. Help if necessary. Go on to the next ring. Try to let this activity go on longer than 10 minutes.

VARIATIONS: Nesting rings. Give the child the rings and allow them to experiment without signing the colors.

COMMENTS: This is a shaping color, seriation and eye-hand coordination activity. Be patient and persistent. The activity has many built-in cognitive advantages.
NAME OF ACTIVITY: Pound the color

SIGNED WORD/CONCEPT: What color, individual colors, in.

WHY THIS CONCEPT: Object grasp and acting upon the environment motivates color recognition.

PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED: Active environment interacting; 12-18 months.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: The chance to pound down the color used.

CONCEPTS TAUGHT: Colors, pounding, communicating consequences, active participation upon the environment.

MATERIALS NEEDED: The workbench, optional color cards.

PROCEDURES: Follow the shaping of a signed concept. Hold up the round peg and ask "What color is this?" Sign What color? "This is red." (Red). "Do you want to pound this red block in?" (Red, in). Sign red. Child pounds in red block (Red). "Good pounding the red block in." (Good red in).

VARIATIONS:

COMMENTS: Children love this activity. This activity fosters a traditional boy activity for both girls and boys. Parents of boy students often comment on the absence of traditional boy toys in the classroom.
ACTIVITY # 4  SECTION: Colors

FORMAL/INFORMAL Teaching Strategy
(Circle one)

FORMAL/INFORMAL

SENSES UTILIZED: Sight, tactual, kinesthetic, sound, sometimes taste.

MOTOR MOVEMENT INVOLVED:
(Other than sign)
Hand and finger grasping, hand-wrist coordination, eye-hand coordination, reaching for crayon.

NATURALISTIC CUE:
Paper and crayon

CONCEPTS TAUGHT: Individual colors, pre-coloring skills, fine and gross motor hand control.

MATERIALS NEEDED: Paper, crayons.

PROCEDURES: Follow the shaping of a signed concept.
Show the paper and the crayon orange.
"We are going to color this paper orange. Demonstrate.
Hold up the crayon and say, "This is orange."
"What color is this? Orange!"
After the child signs orange, he/she is allowed to scribble to their heart's content.

VARIATIONS: Murals, butcher paper on the floor, paint.

COMMENTS: Physical guiding may be necessary when first teaching this concept. Acetate covering the table surfaces is suggested since many children cannot stay within the boundaries of the paper.

NAME OF ACTIVITY: Scribbling orange.

SIGNED WORD/CONCEPT: What color?

Individual colors.

WHY THIS CONCEPT: Pre-writing coloring skills, color generalization, fine motor development, active interaction with environmental objects.

PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED: 2 years. Experimenting and interacting with objects within the environment.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Scribbling orange on a paper.
ACTIVITY # 5  SECTION: Colors

FORMAL/INFORMAL TEACHING STRATEGY (Circle one)

SENSES UTILIZED: Visual

MOTOR MOVEMENT INVOLVED: (Other than sign)
Eye coordination, eye-hand coordination

PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED: 2 years, 6 months. Visual environment exploration.

NATURALISTIC CUE:
Painting or touching the pieces of clothing.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Child touches clothing and color, signed.

CONCEPTS TAUGHT: Looking at colors and clothes, differentiating colors and specific clothing items, matching colors.

MATERIALS NEEDED: Color cards, children's clothing.

PROCEDURES: Follow the shaping of a signed concept.
"What color is Charlotte's shirt?" Point to the shirt.
"Barbara's shirt is red." Make the children sign red.
"Can you find red in another place?"
Again have the children sign red.

VARIATIONS: Change the locations and times when this activity is used. Use a doll. Show the child and their red shirt in a mirror. Have color days where the children all wear red. (Notes to parents will be needed.)

COMMENTS: This is a good waiting-to-go-home activity. Attention span for this activity is only 4-7 minutes.
ACTIVITY # 6 SECTION: Colors

NAME OF ACTIVITY: Matching skills-Color Bingo.

FORMAL/INFORMAL TEACHING STRATEGY
(Circle one)

SIGNED WORD/CONCEPT: Various colors.

WHY THIS CONCEPT: To match colors and review colors in a fun way.

SENSES UTILIZED: Sight, tactual, kinesthetic, hearing.

PIAGETIAN/DEVELOPMENTAL CONCEPTS
UTILIZED: 2 years, 6 months - 3 years.

MOTOR MOVEMENT INVOLVED:
(Other than sign)
Eye-hand coordination

NATURALISTIC CUE:
Bingo color card

NATURALISTIC CONSEQUENCE/REINFORCEMENT:
Matching corresponding color on own card.

CONCEPTS TAUGHT: Listening, looking, matching, color recognition, how to play a game.

MATERIALS NEEDED: Color and shape bingo (found at Little Red School House) or teacher made version of color bingo cards and playing and calling.

PROCEDURES: Have the children sit around in a semi-circle. (This game should only be introduced after several colors have been introduced and practiced.) Pass out cards. Review colors and signs found on each child's card. Call and sign each color. Have the child sign the color before giving them the matching color. According to the child's ability, either physically guide, mold model or verbally prompt the child in the correct sign. 15-20 minutes is the maximum time span for this activity. It works best with 4-6 children.

VARIATIONS: Toys, names, colors, pictures, foods.

COMMENTS: This activity take a lot of supervision and patience. It will not be very successful until approximately the fifth month of signed color training.
ACTIVE LEARNING ABOUT EGGS!

(Tim's sign for egg)
MORE FOOD PICTURES

POPCORN

SERVING ICE CREAM

USING JAPANESE FRUIT MAGNETS

I EAT. MY DOG EATS.
First Foods Introduction Sheet
Most signs were taken from the sign language book entitled *Sign Language For Everybody* by Jeanne Huffman; Bobbi Hoffman; David Gansee and Anna Fox, California: Joyce Media, Inc., 1975.
motion of corn popping
popcorn

old fashioned method of sprinkling
salt on food
salt

something on end of finger
food
drinking from a glass
drink

ring an apple
apple

milking a cow
milk
ORANGE

Squeeze an "O" hand in front of mouth.

peeling a banana

banana

sweet tasting

sugar

"W" indicates water for drinking

water

cracking an egg open

egg

old fashioned way of toasting bread on a fork

toast
FIRST FOODS INTRODUCTION ACTIVITIES

Making popcorn
Asking for food at lunch
Asking for a drink
Apple pictures, objects
Apple - see, touch, and taste
Apple - part and whole
Asking for milk at lunch
Which is the apple? Which is the orange?
Tell me which fruit you want: the apple or the orange?
Eggs in the carton
Cooking and asking for eggs
Making toast
Sugar and salt - are they the same or different?
Exploring fruit
What color is the apple, orange, banana?
Choosing from 5 + 5 items
BREAKFAST FOODS

Coffee
Tea
Bacon
Egg
Toast
Cereal
Milk
Butter
Jam
Breakfast Bread
Peanut butter
Pancake
Tortilla
Orange juice
Breakfast Words

milk

egg

coffee

butter

tea

jam

toast

cereal

bacon
motion of eating
breakfast

slicing a loaf of bread
bread

- Index and then thumb of A
  from under teeth
  (See "NUT")

TORTILLA
- Right hand on left, then left on
  right hand, press a tortilla

ORANGE
- S squeezes in front of
  repeat

JUICE
- Thumb-side of Y cuts down
  back of S

BUTTER
- Fingers flick backwards off
  heel to N. twice

PANCAKE
- Flat hand moves out and
  inverts
  (See "FLAPJACK")

PEANUT
- Index and then thumb of A
  from under teeth
  (See "NUT")
BREAKFAST FOOD ACTIVITIES

Making orange juice

Blending eggs, milk and bananas

Making hot chocolate

Fixing breakfast and ordering in the classroom

Making pancakes and bacon

Going out to eat breakfast at McDonalds

Spreading butter, peanut butter, and jelly

Rolling tortillas into binoculars
FRUITS

Apple
Orange
Banana
Strawberries
Watermelon
Grapes
Cantaloupe
Peach
Pear
coring an apple
apple

peeling a banana
banana

squeezing juice from an orange into mouth
orange

STRAWBERRY
(Alt. 1)
S shakes by little finger of palm-in horizontal left I; then add "berry"

WATER
Index finger of palm-left W taps chin

MELON
Middle finger snaps on back of left S (as if testing ripeness)
CANTALOUPE
Middle finger thumps top of left C
(See "MELON")

PEACH
S to flat-O, palm-in,
stroking cheek; repeat

PEAR
Grasp left flat-O; hand slides off into flat-O, changes to index and touches left fingers
SNACKS

Nuts
Pop
Popcorn
Gum
Crackers
Ice cream
Candy
Cookie
Carrot
Marshmallow
Pie
Cake
Snacks

**PEANUT**
and then thumb of A
m under teeth
(See "NUT")

**SODA**
Fingers of palm-down hand
flutter up from palm-right left
S-hand

**popcorn**

**gum**

old European custom of hitting crackers
with elbow allowing crumbs to fall into
soup

**crackers**

**licking an ice cream cone**

**ice cream**

**a sweet tooth**

**cookie**

**CARROT**
Scrape top of left C with thumb
landed A
(See "BEAN")
MARSHMALLOWS
M-hand touches top of horizontal left index, then bottom

cutting a piece of pie

pie

cutting a piece of cake

ake
LUNCH AND DINNER FOODS

Sandwich
Hot dog
Hamburger
Soup
Meat
Corn
Potato
Vegetable
Fruit
Cheese
Fish
Dessert
Lunch
Dinner
Pizza
McDonalds
Cocoa
Ice
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</tr>
<tr>
<td>Pickle</td>
<td>Chicken</td>
<td>Thirsty</td>
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<tr>
<td>Hamburger</td>
<td>Fish</td>
<td>Delicious</td>
</tr>
<tr>
<td>Hot dog</td>
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<td>Mayonnaise</td>
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<td>Ketchup</td>
<td>Gravy</td>
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<tr>
<td>Tomato</td>
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Two pieces of bread together
sandwich

Links of weiners
hot dog

Forming a hamburger patty
hamburger

taking soup with a spoon
soup

Side of beef hanging on a meat hook
meat

eating corn on the cob
corn
piercing a potato with a fork

**VEGETABLE**

Touch index finger of "V" to cheek, then turn and touch middle finger of "V" to cheek.

**FRUIT**

"F" hand back and forth at side of mouth.

**CHEESE**

Right heel on left heel mashes and twists slightly.

**FISH**

Hand flutters forward like swimming.

**DESSERT**

(Alt. 2)

Palms facing tap horizontal D's together.
- Motions of eating lunch and dinner.

- PIZZA: P draws a triangle above left palm.

- Mc Donald's: M makes the arches.

- COCOA: Index bent, thumb traces circle on back of hand twice. (See "CHOCOLATE").

- ICE: W on chin moves forward, fingers bending (contracting).
Lunch Words

- Tomato
- Ketchup
- Mustard
- Mayonnaise
- Hotdog
- Hamburger
- Pickle
- Cheese
- Sandwich
Food Words

food

hungry

thirsty

delicious

cook ©
(fry - "f")

bake

boil

restaurant

recipe
FOOD AND SIGN

COLORING SHEETS
breakfast

Rotate B-hand at wrist up to mouth
peanut butter
Flip thumb from under teeth, then flick N backwards off heel of hand twice

jelly
Shake bent 5 hand over palm up

sandwich
Insert filling hand from side between thumb and fingers
hamburger

Clasp hands, right on left, separate, then left on right (make a patty)

ketchup

ke side of K downward, likeottle

cheese

Mash and twist slightly-right
Milk

Milk

Cereal

Cereal

Sugar

Sugar
Break one H on
the other H + s

H fingertips touch and
separate, waving first 2
fingers

-and-thumb C
3 on back
Stab V on palm and then on back of hand

Flick N backwards off heel of hand twice

Thumb-side of Y cuts down back of S
Pour

"A" lifts and "pours" into side of C

Little finger brushes side

Pancakes

Palm down on palm up, flips to up + s
Peel index finger with thumb-tip twice

Claw hand "bites" index finger of other hand
Tap chin with L-thumb

in front of chin

Thumb edge of L cuts down back of S

lime

ange

lemon
fruits

Twist finger - and thumbtip of 9 on cheek + s

big

ittle

L-hands face each other, jerk slightly toward each other; repeat

Palm-out B's arc sidewise
drinks

Thumb on chin, drink from C + s

Touch lower lip with middle finger
Twist C around 1-fingertip

Twist S around 1-fingertip

st C fist around upper V jur, then around lower jur

Twist S around 1 fingertip

cherry

crawberry
pudding
Ladle P-hand up to mouth twice

jello
Shake bent 5 hand over palm-up + 0

C - thumb circles twice on back of hand 131
Stroke cheek, 5 to flat-o twice

peach

rapes

curved right hand fingers
is back of left hand + s

grapefruit

Grape + twist "g"
Twist middle finger of "P" at corner of mouth

pineapple

ap middle finger on back S (as if testing ripeness)

elon

and grasps flat-O per, then slides up to index

pear
pie

with middle finger of P
draw an X on the palm

cut

V-hand cuts tip of middle finger
Twist hand, index finger in cheek

Candy

Fingertips of V stay on cheek, bend and straighten them

Gum

Chew

A-hand circles on other A-hand up

135
cookie

Bent "5" hand twists in palm-up

doughnut

ing, circle downward to nd touching

ice cream

d moves up and down near
Fingertips bounce on back of other hand

B hand slides under palm down

Circle hands, right above left
Index fingers flutter up and down alternately

popcorn

pretzels

beer

B hand circles on cheek

Make horizontal "8" with P hand
inside of S, then

P hand draws triangle on palm-up
Ladle thumb-out H-hand up to mouth twice

Side of S taps arm near elbow twice + s

rackers

and brushes

napkin

oss mouth twice
Circle 9 above 0 as if swishing a tea bag.

Top-S on other-S, rubbing.

C-hand to S-hand across back of left hand.
Index fingertip of V on cheek; twist + S
meats

pinch flesh and shake hands up and down slightly + s
A hand passes other hand

pass

bread
slice back of hand three times with side of other hand

roll

Roll R-hands over and forward to palm over
potato chip

: V taps on back \i, then C strikes \ard on index

eftips circle several on palm

mustard

\ds, draw apart to S \tice
Flutter hand forward like swimming

F on palm, palm-down to up

Extended thumb of A circles in and up near mouth, spoons food in
chicken

twice with d + -en

hot

Palm in claw at mouth twists downward and to side

rench fries

F-hand down loops to right twice
potato
2 bent fingers on back

eel
A peels top of S

Flutter "5" hands
up and down alternately

boil
onion

idex fingers alternately
sticks, marking tear-tracks

ry

Twist X at corner of eye

slice

e side of S with palm
Thumb and finger of "9" pinch side of "H" hand and shake hand slightly.

Spread

Spread "0" to "5" on palm.

Mayonnaise

Fingers on palm down right "M" brush heel of left palm.
lettuce

it heel of L upwards on head

tomato

Index finger from lips, strike fingertips of flat-0

carrot

Scrape top of C with with thumb of A
desserts
Ladle D-hand up to mouth twice + s
FOOD ACTIVITIES
ACTIVITY # 7  SECTION: Foods

FORMAL/INFORMAL TEACHING STRATEGY
(Circle one)

SENSES UTILIZED: Sight, hearing, tactual, taste, small.

MOTOR MOVEMENT INVOLVED:
(Other than sign)
Hand-grasp and texture feeling

NATURALISTIC CUE:
Sight of specific fruit magnet

CONCEPTS TAUGHT: Fruits, their names and how they feel. Learning how to learn and sign a symbol for an object's name.

MATERIALS NEEDED: Fruit or vegetable magnets found in specialty cooking shops, wholesale arts and crafts material stores, novelty shops or Little Red School House. Some companies put out plastic fruit, life-size kits.

PROCEDURES: See the shaping of a signed concept or object recognition #1 and #2. Follow please! Introduce one fruit magnet at a time and review that concept twice a day for two weeks. During this time also show samples, both whole and in parts of the same fruit. Provide tasting, feeling and smelling samples. Then introduce the next fruit/magnet. Then teach both together, practicing choosing the correct one. Increase to three fruit. This is a (banana). Help them sign (banana). Praise and let them hold the banana.

VARIATIONS: Scratch and sniff stickers of apple, strawberries, bananas, etc. Review magnets and then cook with the same fruits. Find pictures of fruits. Go on a shopping expedition for fruits.

COMMENTS: These often end up in their mouths and will need frequent washings. Hang on a refrigerator or metal surface in view of the children, not necessarily within reach! This reinforces the learned concept and are easily located for teaching activity.
NAME OF ACTIVITY: Eggs in a carton

SIGNED WORD/CONCEPT: Eggs

WHY THIS CONCEPT: Teaches the name "egg", how eggs break and manual dexterity.

PIagetian/DEVELOPMENTAL CONCEPTS USED: 7-12 months, object concept and manipulation 12-18 months.

SENSES UTILIZED: Tactual, sight, hearing.

MOTOR MOVEMENT INVOLVED: Fine motor hand movement, pulling apart and putting together, eye-hand coordination.

NATURALISTIC CUE: Carton of eggs

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Holding and breaking apart an egg.

CONCEPTS TAUGHT: Manual dexterity, eggs, return, how eggs break, take.

MATERIALS NEEDED: Eggs in a carton is an educational tool/toy found at Little Red School House. There are 12 eggs which come apart and go back together. Inside each egg is a number with a corresponding amount of holes on one side and a corresponding number of pegs on the other side. Five pegs will not fit into four holes. The two sides must match.

PROCEDURES: Show the carton of eggs. Say/sign (eggs). Mold the first child's hands into the sign egg. (Good). (Take one) (Egg). Help the child take the egg from the box. Allow them to break apart and put the egg back together as all the children get a turn. Return to the first child and say/sign (Give back or Return the Egg) to the carton. Help them return the egg to the carton. Proceed to the second child who earned an egg. Make sure all eggs are returned. Children love to mix up or hide eggs. Put eggs in the refrigerator. (Sometimes curious hands quite upset the parents.) If this happens, generalizing is occurring!

VARIATIONS: Experiment with real eggs.

COMMENTS: This is a favorite sign and activity. The eggs are plastic and durable.
NAME OF ACTIVITY: What are we having for lunch today?

SIGN WORD/CONCEPT: Daily lunch foods.

WHY THIS CONCEPT: Teach concretely where and what the child is experiencing that day.

FORMAL/INFORMAL, TEACHING STRATEGY (Circle one)

SENSES UTILIZED: Sight, hearing, taste, smell, tactual.

PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED: Environment awareness 12-24 months, active environment participator.

MOTOR MOVEMENT INVOLVED: (Other than sign)
Eating movements.

NATURALISTIC CUE: Pictures of food or lunch.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Eating.

CONCEPTS TAUGHT: Names of food eating today, sign food or don't eat, review and preview food eating today.

MATERIALS NEEDED: Pictures of common foods served on the lunch menu, daily lunch.

PROCEDURES: Before lunch show some pictures of the food being served that day. Say/sign each picture. Have children sign each picture. At lunch time take two minutes to show hot dogs. Sign/say hot dogs. Choose three children and mold their hands into (hot dog). Verbalize hot dog. Show/sign/say potato. Mold three other children's hands into potato. Do the same with milk or one other food. Serve lunch, having the children sign (eat, please) (milk, please) before being served. Review and practice after lunch, before going home, with pictures.

VARIATIONS:

COMMENTS: This is hard to accomplish at the beginning of the year, but becomes easier as the expected routine is followed and more children spontaneously sign food names. Hot dog, milk and cookie tend to be learned first.
NAME OF ACTIVITY: Activity sequence puzzles.

IGNED WORD/CONCEPT: Pudding, what next?

WHY THIS CONCEPT: Sequencing is a daily living skill and a beginning vocational training preskill.

PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED: 2 years plus puzzles, time and order sequencing.

NATURALISTIC CUE:
Picture and verbal reminder of making pudding.

NATURALISTIC CONSEQUENCE/REINFORCEMENT:
Puzzle sequencing and social reinforcement.

CONCEPTS TAUGHT: Review of cooking activity, sequencing, time sequencing.

MATERIALS NEEDED: Pudding and pudding box, drawing or pictures of children making pudding.

PROCEDURES: Have just made pudding within the last 24 hours. Show the pictures (unopened box, bowl, spoon, milk), (opening box, pouring box), (pouring milk), (mixing pudding), (putting pudding in refrigerator), (eating pudding), or just make three sequences (before, during and after making pudding). Have a master sequence puzzle and several individual puzzles. Say/sign (How do we make pudding?) First we get the ingredients. Show picture and place in front of you. Help the children do the same. Then (what's next?) Show the picture of mixing the pudding. Place next to first picture. Help them do theirs. (What happened next?) Eating the pudding. Show the picture. Place and help them place theirs.

VARIATIONS: Jello; using the slide, swimming; getting ready for school, the school routine.

COMMENTS: This is a very advanced activity, worthwhile, but probably no child will be able to do it independently the first year of the program.
NAME OF ACTIVITY: Ordering the classroom breakfast.

SIGNED WORD/CONCEPT: Known breakfast foods.

WHY THIS CONCEPT: Solidly reinforces breakfast foods and makes the child make choices and communicate those choices. Concrete interaction with the environment.

PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED: 12-24 months, active participator in the environment.

SENSES UTILIZED: Sight, hearing, tactual, kinesthetic, smell, taste.

MOTOR MOVEMENT INVOLVED: (Other than sign) Making and preparing food

NATURALISTIC CUE: Picture menus, making breakfast.

CONCEPTS TAUGHT: Very advanced and time consuming review of breakfast foods, preparing breakfast foods, choosing food, communicating food, waiting turn, cleaning up after self.

MATERIALS NEEDED: Picture menus of each of the foods listed below:
Bread, toaster, butter, peanut butter, jelly, cereal, milk, bowls, spoons, pancake batter, butter, syrup, eggs, bacon, orange juice, pitcher, water, fruits already learned.

PROCEDURES: Before students come, have all ingredients ready to use. Precut fruit. Mix the pancake batter. Plan to take all morning and don't order lunch. Have children sit around the lunch table. Sign/say each item as preparation is occurring. Have their plastic covered picture menus in front of them. Have everyone stir the orange juice, put a strip of bacon into the pan, stir the pancake batter, put a slice of toast in the toaster, spread butter, pour cereal, crack and mix the eggs. Sign/say each food's name often. Prepare food. Show all the food, including the fruit.

VARIATIONS: Point to their menus (have food out of grabbing distance). Sign/say (What do you want to eat?) Do you want (banana)? If the answer is "yes", have the child sign (banana). Give them a small portion. Proceed next child. Proceed to next food. If possible, place the chosen food on its corresponding picture.

COMMENTS: Extra helpers are almost a necessity. Less choices are also possible. The children will not notice the cold food. Reheat if necessary. Have them help clean up the mess. Be patient and full of joy. Your students are becoming active communicators and active, independent participators of their environment. What is a mess when opening up the doors of their potential! Next, go to McDonalds and make them each order breakfast off their picture menu.
Discipline and Directions
A FAVORITE ACTIVITY THAT TEACHES IN AND PERCEPTUAL HAND DEVELOPMENT. ALSO INTRODUCES SHAPES.
USING DISCIPLINE AND DIRECTIONS

The effective, visual, quiet and fun alternative to classroom control!
Visually focus your auditory directives! Send that message home!

Use these concepts as often as needed in the daily routine of
conducting the classroom environment. Make sure your hands, face and
body posture tell the same message!

These signs are not used or taught for expressive output by the child.
These are receptive signs which, when used, should be understood and
followed by the child. (Receptive acquisition will be accomplished in the
majority of the children by Christmas). These signs are signed and spoken
simultaneously. By June, most children will have receptive mastery. This
mastery will occur with only sign language, only spoken language, or total
communication.
DISCIPLINE AND DIRECTION WORDS

* Sit down *In There
Pick up *Out Pay attention
Line up *Up *Stop Stop
Be careful *Down *Go Wait
Listen *Give Come Sit
Look *Bring Pay attention
Stand *Get * These words will be utilized
Yes Understand in the sample
No Work activity lessons
Good Try 1. In, out
Bad On Yes
Show Off Find
Wait *Over 2. Up, down
Be quiet *Under 3. Give, bring,
* Wipe your nose get Why
Same 4. Over, under
Different What color
Now 5. Big, little
Different Fine
Mad *Big 6. Stop, go
Fast *Little Today
Doesn't matter 7. Stand up,
Dirty sit down
Start/begin Clear
Finish Fun
What Smart
Where Again
Find Later
Use Here

TEACHER SURVIVAL SIGNS

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EXAMPLES OF DISCIPLINE SIGNING

Sign one appropriate sign and verbalize the sentence. Use the signed word that best fits the conveyed concept of the sentence.

1. Sit down in your chair.
2. Pick up your toys.
3. Line up at the door.
4. Listen to the music.
5. Look at this apple.
6. Be careful on the slide.
7. Yes, you may get a drink.
8. No, it is not your turn.
9. Good try/work.
10. To hit John is bad.
11. Show me your crayon.
12. Wait until everyone comes here.
13. Be quiet.
14. Please wipe your nose (blow).
15. Now! I want you here right now.
16. Sit down, listen, look, be quiet, or I'll get angry (mad).
17. Hurry up (fast)!
18. You may have water or milk. It doesn't matter.
20. Finish cleaning up.
21. What is this color/object?
22. Where is your coat?
23. Find your chairs.
24. Use the scissors to cut.
25. Put the block in the shape ball.
26. Take the block out of your mouth.
27. Point your hand up.
28. Put the baby doll down.
29. Give me your lunch tray.
30. Bring me the box of kleenex.
31. Get the ball that rolled away.
32. Do you understand? I don't want you running out the door.
33. Do your work. Stop playing.
34. Please try to use both hands.
35. Put the napkin on the table.
36. Take your hands off the stove.
37. Crawl under the table.
38. Climb over the box.
39. Is this the same color?
40. Which picture is not a car, but different?
41. Pick up the big ball.
42. Put the little shoe in the box.
43. Your hands are dirty!
44. Good! Now your hands are clean.
45. We are going to have fun. Let's listen to music and dance.
46. Good work! You are smart.
47. Jump again.
48. Bring the soap here.
49. Look over there at the flowers.

50. Pay attention now!

51. Stop! There is a car coming.

52. Go to the door.

53. Come to me with your hurt finger.
Most signs were taken from the sign language book entitled *Sign Language For Everybody* by Jeanne Huffman; Bobbi Hoffman; David Gansee and Anna Fox, California: Joyce Media, Inc., 1975.
fingers represent legs hanging over edge of chair
sit

picking up something with hand
pick up

people standing in a line
line up

fingertips represent eyes watching for hazards
be careful

two fingertips represent eyes looking from place to place
look/watch

STAND
V-fingertips stand on left palm
STOOD + STAND + P.T.
hand represents nodding head

yes

abbreviated NO

no

original idea - food was tasted, smelled and offered as acceptable

good

original idea - food was tasted, smelled and turned down

bad

pointing out something

show

motion in place until ready to move forward

wait
stop talking

be quiet

blowing your nose

cold (illness)

at the immediate time

now

facial expression shows anger

mad

gun recoiling when bullet leaves

fast

able to go either way

doesn't matter
key being turned

start/begin

motion indicates being completed
or ended

finish

fingers represent several ideas from
which to choose

what

point from one area to another

where

picking up an object

find

continuing motion to represent
frequent use

use
putting something into the hand
in

taking something out of the hand
out

showing direction up

showing direction down
down

handing something to someone
give

bringing an object toward self
bring
grasp and hold object
get

the "light bulb" in head turning on
understand

slaves being cuffed together
work

forward motion indicates effort
try

one thing on top of another
on

removing something from the top of
another
off
to go across something
over

to go below something
under

two identical objects
same

two objects that are not alike
different

showing size of object
big

showing size of object
little
Food dripping from chin
dirty

Wiping something clean
clean

My nose of clown being given another

Good ideas from the head
smart

Repeat it once more
again

When hands of clock have moved ahead
later
immediate area
here

THERE
Palm-up hand arcs forward

attention

attention is focused on one object
like blinders on a horse

lowering railroad crossing gate
stop

moving from one place to another
go

beckoning a person
come
Teacher's Survival Commands
(Or how to survive without pulling out your hair!)

STOP

WAIT

SIT

STAY

COOPERATE

MY ATTENTION

NOW

YES

NO
**HOW**
Backs of palm-down bent hands touching, roll hands from inward to outward

**WHY**
Open hand, palm-in fingers on forehead, moves out to palm-in Y

**WHAT**
Index fingertip brushes down across left fingers

**COLOR**
Fingers flutter in front of chin

**FINE**
Thumb of palm-left 5-hand on chest, move hand forward. (May be done sharply with F-hand)

**TODAY**
Light index to left index kly drop right arm on
ACTIVITIES FOR

DISCIPLINE AND DIRECTION
NAME OF ACTIVITY: In go the shapes

SIGNED WORD/CONCEPT: In

WHY THIS CONCEPT: Teaches manual dexterity, shapes and in. Great reinforcement tool.

FORMAL/INFORMAL TEACHING STRATEGY
(Circle one)

SENVSES UTILIZED: Tactual, visual

WHY THIS CONCEPT: Teaches manual dexterity, shapes and in. Great reinforcement tool.

MOTOR MOVEMENT INVOLVED:
(Other than sign)

Grasp and release, eye-hand coordination.

PIAGETIAN/DEVELOPMENTAL CONCEPTS
UTILIZED: 7-12 months plus, active object manipulator.

NATURALISTIC CUE:
Shape Ball or Cookie Monster, who eats shapes.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Pushing in a shape, social reinforcement.

CONCEPTS TAUGHT: Object manipulation, manual dexterity, turn taking, in, grasp and release.

MATERIALS NEEDED: Tupperware Shape-O Ball or Cookie Monster Shape Muncher and shapes.

PROCEDURES: Seat children around the table and show the Shape-O-Ball. Follow the shaping of a signed concept for the word (in). Say/sign (in). After the child with or without help signs (in), hold a shape over the correct hole and allow the child to push the object/shape in. Say/sign (Good, pushing the object in). Proceed to the next child. At the end of the year, many children will be able to find the correct space on their own.

VARIATIONS: Take a sand bucket and drop small colored blocks into the bucket.

COMMENTS: This is a good reinforcer for signs like "mommy", which may not have a natural, immediate consequence. Children are fascinated with this toy.
NAME OF ACTIVITY: Pick up your toys

SIGNED WORD/CONCEPT: Pick up toys

WHY THIS CONCEPT: Part of daily independent discipline and living, environmental manipulation.

PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED: 1 year, 6 months - 3 years, active object manipulation.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Social praise and toys off the floor.

CONCEPTS TAUGHT: Cleaning up after oneself, picking up toys. Following directions, proper places or homes for objects/toys.

MATERIALS NEEDED: A play area with toys, a container to place the toys into.

PROCEDURES: Clap hands three times. Sign/say (Pick up your toys). Model action and repeat command. Physically guide various children's hands to pick up the toys and put them away. Keep reinforcing with sign and verbal reminder that "we" are picking up our toys. As each toy goes in the container, say/sign (Good) putting the toy away, Timothy. Proceed to a new area and activity upon the toys being all picked up. The more fun the activities after toy pickup are, the more quickly the chore is finished.

VARIATIONS: Play a specific song that auditorilly cues the children that they are to pick up toys.

COMMENTS: Be patient. Make this a successful activity. Children do not need to be berated, even while picking up toys. Be funny. Practice ugly faces while everyone picks up the toys. Modeling and teacher guiding/involvement go a long way.
NAME OF ACTIVITY: Big and little box

SIGNED WORD/CONCEPT: Big/little, put

WHY THIS CONCEPT: Everyday size differentiation is needed. Concrete and fun.

PIagetian/Developmental concepts utilized: 3 years, active environment exploration and manipulation.

NATURALISTIC CUE: Big/little objects, big/little box/board, big/little voice.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Moving big and little objects.

CONCEPTS TAUGHT: Big/little, following directions.

MATERIALS NEEDED: Big box, plastic covered big and little board, 10 big objects and 10 little matching objects, big and little voice.

PROCEDURES: Seat children around the table. Pull out box. Lay out big side/little side board. Take out a big pencil. Sign/say (big) in a very deep voice. (Big or big pencil is acceptable). Place the big pencil on the big side. Then take out the little pencil and say/sign in a squeaky little voice and movement (little pencil). Place on the little side. Do this with all 20 objects. Put all but the pencils in the box. Take out the big hat. Ask/sign to the first child in a very deep voice (what) am I? (Big). Help the child sign (big). Let the child hold the big hat. Say/sign (Put the big hat) on the (big) side. Use your deep voice. Assist child in putting the big object on the big side. Say/sign in a deep voice (thank-you). Proceed to the next child with the little hat. Use of big and little voices facilitate the child understanding big and little.

COMMENTS: A favorite activity, but many, many trials are needed before this can be done without assistance.
**NAME OF ACTIVITY:** Reverse mainstreaming

**ACTIVITY #15**

**SECTION:** Discipline & Directions

**FORMAL/INFORMAL TEACHING STRATEGY**

(Circle one)

- **SIGNED WORD/CONCEPT:** Signs learned that day.
- **WHY THIS CONCEPT:** Bringing in a normal child improves own students' skills and encourages empathy or a lack of fear in the unhandicapped population.
- **SENSES UTILIZED:** Sight, hearing, possibly others.
- **PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED:** 4-24 months plus, bridging sensorimotor activities to pre-operation-al interaction.

**MOTOR MOVEMENT INVOLVED:**

(Other than sign)

- **NATURALISTIC CUE:** A child slightly more advanced.
- **NATURALISTIC CONSEQUENCE/REINFORCE-MENT:** Peer friendship and interaction.

**MATERIALS NEEDED:** A non-handicapped 2-3-4-year old child.

**CONCEPTS TAUGHT:** The day in a handicapped child's life, fun, a role model to imitate and learn from.

**PROCEDURES:** In the sixth or seventh month of the program, enlist a non-handicapped child to come to the class for two days a week. Do the same program, but include the non-handicapped child. Make them sign for each earned consequence, then have them sign/say the concept. Give reinforcement. Encourage the children to interact and play with each other. Keep notes on the interaction.

**VARIATIONS:** Have non-handicapped high schoolers help 2-3 days a week and at the same time have an adolescent handicapped student also help. Have the small children in the class visit a senior center. Send the more advanced students for an hour to a kindergarden or preschool. Encourage parents to take child out in public, to parks. Help parents understand normal development vs. handicapped development. As a teacher, if a child is not able to blend or mix in the mainstream of society, we aid in their isolation and social unacceptability. Bringing the non-handicapped person into their environment, their successful environment, allows the handicapped child to interact on more equal, successful terms. Non-handicapped students often have great fun coming to a new environment and learning the new language of signs or hand talk!
NAME OF ACTIVITY: What does a door do for you?

SIGN WALL/CONCEPT: Open/shut, please

WHY THIS CONCEPT: Doors are part of the environment that need to be acted upon in order to move from one place to another.

PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED: 2 years, active communicator and participator with the environment.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Movement through door or movement stopped by door.

CONCEPTS TAUGHT: Open/shut, door, environmental manipulation, movement is aided or stopped because of doors. Requesting to go outside with manners.

MATERIALS NEEDED: A working door.

PROCEDURES: Have children stand around the door to go outside. Make sure no one can get hit with moving door. Say/sign (open, please) and model the door opening. Take a child at random and say/sign (open, please) and then physically guide the child's hands to do the same. As soon as the child finishes signing (open, please), open the door and let them out to play. This activity takes two adults, one inside and one outside. Proceed to the next child. After the children learn open, repeat procedure in pushing shut the door (but not at recess time!)

VARIATIONS: Ask who wants to go out and then make them sign (open, please). Do this with containers or toys that open and shut. Opening and shutting the refrigerator is fun but may have consequences the teacher does not want to encourage. Opening and shutting drawers is fun, also.

COMMENTS: Children seem to learn open, please, very quickly when the door leads out to playtime. Shutting is a concept that appears to emerge at a much later time.
Emotions, Feelings & Our Senses
PICTURES ABOUT HOW TO EXPLORE THE ENVIRONMENT AND USE OUR WONDERFUL SENSES

A NATURE WALK AND STOP. FEEL!!!!!!

WATER! FEEL AND SEE!!!

SEE THE FIRE!
DON'T FEEL!!!!!

FEEL AND SEE MY DOG!!!!

(airplane)
HEAR!!!!!!
<table>
<thead>
<tr>
<th>Emotion</th>
<th>Additional Adjectives</th>
<th>Sensory Senses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Happy</td>
<td>More adjectives and emotional faces</td>
<td>To see</td>
</tr>
<tr>
<td>Sad</td>
<td></td>
<td>To hear</td>
</tr>
<tr>
<td>Hurt</td>
<td>Mean</td>
<td>To taste</td>
</tr>
<tr>
<td>Sick</td>
<td>Excited</td>
<td>To smell</td>
</tr>
<tr>
<td>Afraid</td>
<td>Sad</td>
<td>To touch</td>
</tr>
<tr>
<td>Feel</td>
<td>Disappointed</td>
<td>Hot</td>
</tr>
<tr>
<td>Cry</td>
<td>Tired</td>
<td>Cold</td>
</tr>
<tr>
<td>Smile</td>
<td>Calm</td>
<td>Dry</td>
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<tr>
<td>Laugh</td>
<td>Mad</td>
<td>Wet</td>
</tr>
<tr>
<td>Love</td>
<td>Happy</td>
<td>Hard</td>
</tr>
<tr>
<td>I love you</td>
<td>Surprised</td>
<td>Soft</td>
</tr>
<tr>
<td>Hug</td>
<td>Sick</td>
<td></td>
</tr>
</tbody>
</table>
To a child the world is filled with wonder and awe.

The child begins his exploration with Mother's expressive face, her emotional mirror.

His excited discovery of the world beyond the crib comes from touching, seeing, tasting, smelling, and hearing the magical, wonderous, elements of life.

The retarded need to be taught to search, explore, and bloom out of their inner world. Once taught and guided, the retarded express the same joy and exploratory anticipation as the unretarded child.

"Please help me to unlock my doors and open my windows to the world beyond."

(An unspoken dream of the retarded child)
Most signs were taken from the sign language book entitled *Sign Language For Everybody* by Jeanne Huffman; Bobbi Hoffman; David Gansee and Anna Fox, California: Joyce Media, Inc., 1975.
feeling from the heart
happy

having a long face
sad

throbbing sensation
hurt/pain

showing areas of discomfort
sick/ill

back in fear
aid

emotions from the heart
feel
Tears running down face

cry

Outline a smile

smile

Nose to mouth movements when laughing

ugh

Close to one's heart

love

2. I love you.

HUG

Hug self with H's

(See "LOVE")
More Adjectives

mean
excited
sad

disappointed
tired
calm

mad
happy
surprised
SEE
Palm-in V from eye outward
SAW = SEE + P. T.
SEEN = SEE + P. P.

HEAR
H-hand rises to ear
HEARD = HEAR + P. T.
(See "SOUND")

putting food in mouth

taste

smelling something

smell

touch

turning something
mething hot out of mouth

motion of shivering
cold (weather)

moisture from body

WET
Drop palm-in flat hand off chin, then open and close both flat-O's

SOFT
Palm-up open hands drop slightly, closing to flat-O's; repeat
ACTIVITIES FOR

EMOTIONS, FEELINGS AND SENSES
ACTIVITY # 17 SECTION: Emotions

FORMAL/INFORMAL TEACHING STRATEGY (Circle one)

SENSES UTILIZED: Sight, tactual, hearing.

MOTOR MOVEMENT INVOLVED: (Other than sign)
Facial expressions, hand exploring.

NATURALISTIC CUE:
Picture of a facial expression and that of the teachers.

CONCEPTS TAUGHT: Faces show emotions, I have emotions, how do emotions feel?

MATERIALS NEEDED: Facial expressions found in the emotions section, a mirror, an expressive face, protective coverings over faces.

PROCEDURES: Show the happy face. Sign/say (what) is this face saying or feeling? (Happy). Make a happy face on own face. Sign/say (Happy). Show happy face in the mirror. Ask the children to come feel your happy face. Again sign/say (Happy). Let them feel your facial expression, while maintaining a happy expression. Have them imitate, feel and look at their faces in the mirror. Introduce only one emotion at a time and review for two or three weeks before introducing another emotion. Sign/say emotions on the faces of the children as they occur. Have them look in the mirror. Encourage their faces to show appropriate emotions. Exaggerate own faces so that they are easier for the children to imitate.

VARIATIONS: Mix up faces. Which is the sad face? Play at acting out and making emotions in the mirror. Move out emotions. Practice in unusual locations (the grass), take pictures of significant others in the various emotions. Practice identifying.

COMMENTS: No way is the only way. This is a vital concept if the children are going to be able to interact effectively with their environment and significant others. Use your imagination to train, induce and review emotional expressions.

NAME OF ACTIVITY: What is this face feeling?

SIGNED WORD/CONCEPT: Facial expressions

WHY THIS CONCEPT: Facial expressions are part of all communication, but especially necessary in sign language. Retarded children need training in eye gaze focusing.

PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED: 0-12 months plus, environment awareness and exploration.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Facial imitation and tactual expression.
NAME OF ACTIVITY: If you're happy and you know it, sign.

SIGNED WORD/CONCEPT: Sign review

WHY THIS CONCEPT: Relaxed way to review signs to music.

FORMAL/INFORMAL TEACHING STRATEGY (Circle one)

SIGNED WORD/CONCEPT: Sign review

WHY THIS CONCEPT: Relaxed way to review signs to music.

SENSES UTILIZED: Hearing, sight, kinesthetic.

PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED: 1 year, moving to learn and learning to move.

MOTOR MOVEMENT INVOLVED: (Other than sign)

Smiles and rhythmic body swaying.

NATURALISTIC CUE:

Teacher's smile and the song "If you're happy and you know it"

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Signing/signing togetherness, laughter.

CONCEPTS TAUGHT: Music, happy, sign review.

MATERIALS NEEDED: Hands, smile.

PROCEDURES: When there is a lull in the day or the children are tiring from learning or becoming fidgety, say "Let's sing!" Sing only happy except for the sign being reviewed. The words to the song are: "If you're happy and you know it (clap your hands), if you're happy and you know it, you really ought to show it, if you're happy and you know it (clap your hands).

VARIATIONS: If you're happy and you know it (sign mommy)....

If you're happy and you know it, (sign/show me your nose)...

Objects, emotions, body parts, significant others, fruits, other body movements, march around the room, singing and signing the song.

COMMENTS: Have fun. Take 3-5 minutes to enjoy each other and review. The children will be ready to return to a harder task.
NAME OF ACTIVITY: Popcorn and the senses

SIGNED WORD/CONCEPT: See, feel, taste, listen, smell, popcorn.

WHY THIS CONCEPT: Making popcorn uses every sense and one kernel of popcorn makes excellent reinforcement.

FORMAL/INFORMAL TEACHING STRATEGY
(Circle one)

SECONDS UTILIZED: Sight, hearing, smell, taste, tactual, kinesthetic.

MOTOR MOVEMENT INVOLVED:
(Other than sign)
Jumping up and down

PIAGETIAN/DEVELOPMENTAL CONCEPTS
UTILIZED: 4-12-18 months, environmental awareness, exploration through the senses.

NATURALISTIC CUE:
Sight, smell, sound of popcorn.

NATURALISTIC CONSEQUENCE/REINFORCEMENT:
Eating popcorn.

CONCEPTS TAUGHT: Sense stimulation, involvement and awareness of environment, cooking popcorn.

MATERIALS NEEDED: Pan, oil, popcorn, lid, salt, container, napkins and a wet washcloth.

PROCEDURES: Have the children sit around a table away from the stove. Sign/say "We are going to make (popcorn)." Be excited. Let the children feel the uncooked popcorn and cold oil. Wash hands. Show the oil being put in the pan. Talk about turning on the (hot) (stove). Heat oil with lid on. Meanwhile, model, mold and practice the sign (popcorn). Put the popcorn in the pan, add lid. Make the children be very quiet and put their hands to their ear. When the first kernel pops, show the sign (popcorn). As each popcorn pops, jump up and down. (The first time just demonstrate, later having the children jump up and down to the beat of the popcorn). As the smell permeates, sign/say (smell). Exaggerate the intaking of a breath. When the popcorn finishes, remove from the stove and sign/say (hot popcorn). Remove lid. Show popped corn. Be careful to not get it too close to grabbing hands. Put popcorn in a container to cool. Pass out napkins and practice signing, molding (popcorn, please). Allow each child to add some salt. Sign/say (salt) before adding. Sprinkle some in their hands and allow them to taste. Sign/say (popcorn, please). Sign/say (eat) the (popcorn). Proceed to the next child. Wash hands, table and pan. (More, please) is readily learned when used with making popcorn. Use popcorn in later daily and weekly reinforcement for compliant behavior. Popcorn stays fairly fresh for a week.
ACTIVITY # 20  SECTION: Senses

NAME OF ACTIVITY: Playing with water

FORMAL/INFORMAL TEACHING STRATEGY
(Circle one)

SIGNED WORD/CONCEPT: Water fun

ACTIVITY # 20 SECTION: Senses

WATeR fun

WHY THIS CONCEPT: Water has many uses, teaches children how to play and enjoy water, environmental interaction.

SENSES UTILIZED: Sight, hearing, tactual, kinesthetic, taste.

PIAGETIAN/DEVELOPMENTAL CONCEPTS
UTILIZED: 8-14 months, active environment interaction

MOTOR MOVEMENT INVOLVED:
(Other than sign)
Active running, jumping, splashing.

NATURALISTIC CUE:
Water hose or wading pool.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Feel of water.

CONCEPTS TAUGHT: Water is fun, feel-see-hear the water.

MATERIALS NEEDED: A hose, wading pools, a faucet, water, towels, hot weather.

PROCEDURES: Undress the students and put their bathing suits on. Training pants work well with the 3-4 year olds. Take them outside. Show them the hose and pools. Say/sign (water). Show them how the water turns on and squirts. Show them the water going in the pool. Begin squirting children as the pools are being filled. Allow someone to squirt you. Demonstrate screaming, running, laughing (having fun playing with water). When this activity needs a break, have children sit in the pools and splash water with their feet and hands. Dry them off and dump the pools or take a walk in the grass and air dry. Sign/say (water) as often as possible. Go into classroom, seat children. Sign/say (water), then give them a drink of water. Before giving each child their water, mold their hands into (water).

VARIATIONS: Introduce other uses of water and display their pictures (drinks, fun, washing bodies, clothes, tables, cars, brushing teeth, flushing, swimming). Teach the class to (swim in water).

COMMENTS:
NAME OF ACTIVITY: Mobiles flying through the air

ACTIVITY #21  SECTION: Senses, sight, nap time

FORMAL/INFORMAL TEACHING STRATEGY
(Circle one)

SENSES UTILIZED: Sight, hearing, tactual.

MOTOR MOVEMENT INVOLVED:
(Other than sign)
Sense stimulation and object reaching.

NATURALISTIC CUE:
Mobiles flying through the air.

CONCEPTS TAUGHT: Environment awareness and sense stimulation.

MATERIALS NEEDED: Pictures, objects, colors, sounds, feeling shapes, string and hangers, imagination, ideas or idea books.

PROCEDURES: Make your room an environment to explore through the senses. Place mobiles everywhere, especially over the nap time area. Use colors, cutouts of materials or animals, bells, kitchen utensils, objects learning about, fantasy characters. Take pictures of the children and significant others and hang them at the children's eye level. A stagnant environment fosters passive, uninvolved students. A room that stimulates the senses wherever one looks will activate curiosity. Explore. Do a sound mobile, a feeling one. Take time out of each day to look, watch and discuss one of the mobiles (of course, during this time sign/say the colors and names).

VARIATIONS: Help children to make own mobiles, petition ideas and materials from the parents.

COMMENTS: Watch out for moving objects. The children's eye level is shorter than most teacher's height!
NAME OF ACTIVITY: Taking a walk and seeing nature

SIGNED WORD/CONCEPT: See

WHY THIS CONCEPT: Children first exploring their environment use the communicative gesture of pointing out the world of awe around them. Retarded children often do not spontaneously do this action.

PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED: Environment awareness, exploration and interaction, 1 year, 6 months.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Fun, enthusiastic social praise, everyone looking at what was pointed to.

CONCEPTS TAUGHT: To see, to communicate to another, to look at something that interests one, possibly colors and sounds, visual focusing.

MATERIALS NEEDED: An environment outdoors to look at, hands and eyes.

PROCEDURES: Take a leisurely stroll with the class. Stop often to look at small or big or colorful items. Each time, stop and say/sign (see). Do this sign/say (see) several times very excitedly! Help the children to see and to sign (see) or at least point to what is seen. Be sure to react with great approval and enthusiasm if a child initiates their own (see). In order to explore the environment, one must first become aware of it.

VARIATIONS: Take a stroll through the school, or the classroom, or down the road. Watch for specific colors. Listen for sounds. Feel textures.

COMMENTS: This is a fun activity for adults and children. The world is a place of wonder. Help open the child's eyes to wonder and awe. This activity encourages spontaneous communication and alleviates frustration from formal learning for both the children and the teacher.
NAME OF ACTIVITY: A ring of pictures

ACTIVITY #23  SECTION: Senses: Sight

FORMAL/INFORMAL TEACHING STRATEGY
(Circle one)

SENSES UTILIZED:
Tactual

MOTOR MOVEMENT INVOLVED:
(Other than sign)
Picture flipping.

PIAGETIAN/DEVELOPMENTAL CONCEPTS
UTILIZED: 1 year, beginning control of
environment.

NATURALISTIC CUE:
Ring of pictures.

NATURALISTIC CONSEQUENCE/REINFORCEMENT:
Communicating basic desires.

CONCEPTS TAUGHT: Communication intent, object and activity pictures and signs.

MATERIALS NEEDED: A large binder or key ring, protective covering over the
pictures, pictures glued to index cards, a catalogue or polaroid to take child's
pictures, hole puncher.

PROCEDURES: Obtain pictures of foods, common objects, activities and places that
the child is familiar with. Take pictures of the child doing things and people
in their life. Place the pictures on either index cards or cardboard from shirt
boxes or cut pieces of cardboard boxes. Cover with protective acetate or plastic.
Punch out a hole in each picture and put through ring. (Start with only one to
three pictures). Put a leash on the ring. Show the child one picture. Sign/say
the picture (Mommy). Mold the child's hands into (Mommy). Verbalize Mommy.
Picture of food for eat and a picture of milk or a drink of water for drink.
Repeat two to three times a day, until one sign/picture is used to communicate
need. Send back and forth from school and home. As picture is learned and used,
add a new picture.

COMMENTS: Too many pictures confuse the issue and keep the child from beginning
to communicate needs. At first, many, many, many trials are needed. Teach parents
first three signs and way of reviewing the pictures and signs. Stress the need
for a child to have a reason to want to communicate. A child given food without
having to ask for it will not learn to communicate to ask for food.
NAME OF ACTIVITY: Follow the light

ACTIVITY # 24  SECTION: Senses

FORMAL/INFORMAL TEACHING STRATEGY
(Circle one)

SENSES UTILIZED: Sight, hearing.

PIAGETIAN/DEVELOPMENTAL CONCEPTS
(MOTOR MOVEMENT INVOLVED;
(Other than sign)
Visual tracking and focusing coordination.

SENSES UTILIZED: Sight, hearing.

PIAGETIAN/DEVELOPMENTAL CONCEPTS
(Other than sign)
Visual tracking and focusing coordination.

NATURALISTIC CUE:
Moving light.

NATURALISTIC CONSEQUENCE/REINFORCEMENT:
Seeing and finding the moving light.

CONCEPTS TAUGHT: See, watch, light, visual tracking and focusing, increased attention span, environmental awareness.

MATERIALS NEEDED: Flashlight, several flashlights, colored tissue paper and rubber bands, soft soothing music.

PROCEDURES: Have the children sit or lie down on the floor. Turn the lights out and turn the flashlight on. Say/sign (watch, see). Move the light around in a dancing motion on the ceiling. Say/sign (watch, see). Move the light to the wall or upon different children. Attention span is 5-10 minutes. After the children are used to this activity, wrap colored tissue paper over the lights, giving each child a flashlight. Turn off the lights. Sign/say (watch, see). Children become delighted with dancing colors.

VARIATIONS: Use simple light and train tracking skills with a smaller light and directly in front of the child.

COMMENTS: Make this fun, sensual and stimulating. Do not do it too often, but offer it as a special treat.
NAME OF ACTIVITY: Shaving cream

ACTIVITY # 25  SECTION: Senses-Touch

FORMAL/INFORMAL TEACHING STRATEGY
(Circle one)

SIGNED WORD/CONCEPT: Feel, touch, clean

WHY THIS CONCEPT: Active interaction with the environment and sense stimulation.

SENSES UTILIZED: Sight, hearing, tactual, kinesthetic, sometimes taste.

SENSES UTILIZED: Sight, hearing, tactual, kinesthetic, sometimes taste.

MOTOR MOVEMENT INVOLVED:
(Other than sign)
Circular hand movements.

PIAGETIAN/DEVELOPMENTAL CONCEPTS
UTILIZED: 1 year, 6 months, sensory stimulation.

NATURALISTIC CUE:
Shaving cream on table.

NATURALISTIC CONSEQUENCE/REINFORCEMENT:
Feeling and playing with the shaving cream.

CONCEPTS TAUGHT: Touch, fun, cleaning, environment and sense interaction, feel.

MATERIALS NEEDED: Shaving cream, water, table, towels.

PROCEDURES: Seat children around table. Spray shaving cream all over the table. Say/sign (touch with your hands). Demonstrate playing, touching and spreading the shaving cream. Encourage children to do the same. Allow to go on for 5-8-10 minutes (or until mess is over your tolerance). Give the children towels and sign/say (clean/dry). Assist. Rinse out towels. Rewipe tables and, if possible, have children hang them out to dry.

VARIATIONS: Whipping cream, pudding, painting walls with water.

COMMENTS: Shaving cream is a great way to clean a dirty table. Although tasted, children are not known to consume lethal quantities of the shaving cream.
NAME OF ACTIVITY: Touching animals

SIGNED WORD/CONCEPT: Touch

WHY THIS CONCEPT: Animals are alive and provide tactual stimulation. Animals are part of life and awaken awareness in children.

FORMAL/INFORMAL TEACHING STRATEGY (Circle one)

SENSES UTILIZED: Sight, tactual, kinesthetic, smell.

MOTOR MOVEMENT INVOLVED: (Other than sign)
Petting, stretching to see around the other children.

SIGNED WORD/CONCEPT: Touch


SENSES UTILIZED: Sight, tactual, kinesthetic, smell.

NATURALISTIC CUE: Sight of the animal.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Petting the animal, softly.

CONCEPTS TAUGHT: Animal care, gentle touching, taking turns.

MATERIALS NEEDED: A small animal. Guinea Pigs work very well. Hamsters tend to bite. Bunnys are good but tend to be too big to hold comfortably. Chicks tend to be held too tightly. A cage, animal food and water.

PROCEDURES: Have the children sit quietly on the floor. Say/sign "We are going to (touch) the Guinea Pig, Sugar. (Who) wants to be first?" At the first gestural attempt, allow the child to touch and pet the Guinea Pig. Model gentle touching as the Guinea Pig is removed from the cage. "(Who) wants to be next?" Proceed until every child has had a turn.

VARIATIONS: Feed the animal, water the animal, clean the animal's cage, hold the animal.

COMMENTS: Children will spend hours watching an animal. Feeding, watering and cleaning an animal allows for informal generalization of these concepts to occur, thus building a firmer experiential foundation. Animals facilitate active involvement within the environment.
NAME OF ACTIVITY: Food textures

ACTIVITY # 27  SECTION: Senses

SIGNED WORD/CONCEPT: Soft, rough, hard, smooth, different food names.

WHY THIS CONCEPT: Sense stimulation and interaction with the environment.

SENSES UTILIZED: Taste, smell, tactual, sight, hearing.

PIAGETIAN/DEVELOPMENTAL CONCEPTS UTILIZED: Children first learn about their world through their mouth, 1 year, 6 months.

MOTOR MOVEMENT INVOLVED: Hand-mouth coordination, mouth chewing and swallowing.

NATURALISTIC CUE: Sight of various foods.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Feel and taste of various foods.

CONCEPTS TAUGHT: Foods feel and taste different.

MATERIALS NEEDED: Popcorn, orange, carrot, bread, ice cream or pudding, cheese, honey, small containers and spoons, wet washcloth.

PROCEDURES: The teacher may sign/say the various foods and textures or just talk about them. A few signs during the lesson are encouraged so that sensorimotor signing is consistent. This is a receptive lesson. Do not have the children repeat signs. Place small containers on the table in easy reach of the children. Name popcorn, have each child take some popcorn on their spoon. Everyone feel it with their hands and then with their mouth. Go on to the next food. Exaggerate the textures and the experience. Have the children help clean up.


COMMENTS: Yes, it will be messy, but fun. This activity works better if the children are not starved or full. For every 5 children, 1 or more adults are recommended.
NAME OF ACTIVITY: Movement and the blindfold

ACTIVITY # 28  SECTION: Senses and Movement

FORMAL/INFORMAL TEACHING STRATEGY (Circle one)

SENSES UTILIZED: Sight, hearing, tactual, kinesthetic.

MOTOR MOVEMENT INVOLVED: (Other than sign)
Hand searching, activity and body movement.

NATURALISTIC CUE: Teacher's voice and blindfold.


NATURALISTIC CONSEQUENCE/REINFORCEMENT: Blindfold experience and removal of blindfold.

CONCEPTS TAUGHT: We see with our eyes. Without eyes, exploring the environment is harder and takes using other senses and our body.

MATERIALS NEEDED: Blindfold or soft scarf big enough to be used around a child's head.

PROCEDURES: Seat the children on the floor by a balance beam, stairs and a large, soft pillow. Say/sign "I am going to (cover your eyes) and help you move." Cover own eyes and move over or on the balance beam, pillow and stairs. Praise self. Choose a child least likely to start crying. Sign/say "I am going (to cover your eyes)." Gently blindfold the child's eyes and slowly guide him over the objects. Do half the class the same way. Do the other half the next time you do this activity. If a child is extremely fearful, only put the blindfold on for 20 second and don't try to make them move.

VARIATIONS: Use the blindfold and feel things. Use the blindfold and listen to things.

COMMENTS: This is beneficial but can cause anxiety. Be careful. Positioning the child in your lap and holding them close to you can overcome their fear and apprehension.
NAME OF ACTIVITY: Dressing bag

ACTIVITY # 29 SECTION: Senses or Daily Living

SIGNED WORD/CONCEPT: Specific items of clothing.

SENSES UTILIZED: Tactual, sight, hearing.

WHY THIS CONCEPT: Attention focusing, reinforcing names of clothing, element of surprise and thinking.

MOTOR MOVEMENT INVOLVED: (Other than sign)
Grasp and reflex, pulling, shaking.

PIagetian/DEVELOPMENTAL CONCEPTS UTILIZED: 1-2 years, object manipulation and exploration.

NATURALISTIC CUE:
Bag of unknown objects.

NATURALISTIC CONSEQUENCE/REINFORCEMENT: Holding an article of clothing.

CONCEPTS TAUGHT: Feeling, seeing and recognizing clothing, clothing names.

MATERIALS NEEDED: Large bag half full of children's clothing.

PROCEDURES: Seat the children around the table. Show them the bag. Sign/say "(What) is in the bag?" The first child to display a gestural response gets to reach in the bag and pull out a garment. After it is held up for everyone to see, sign/say "(What) is this?" Wait. Sign/say, "It is a dress (sock, shoe, pants, etc.)." Help the child sign the article of clothing and go on to the next child. Allow the dress to remain with the first child. After everyone has an article of clothing, ask "(Who) has the (dress)?" "You have the (dress)." "(Put the dress) back in the bag." "Good putting the dress back in the bag." Rehelp them say/sign (dress). Go on to the next item, shoe.

VARIATIONS: Use table utensils, toys, fruits, other items the children have learned about.

COMMENTS: Groups should be no more than 4-6. If necessary, divide the class into two groups. This is not an introductory activity, but a review activity. This activity works better with older or more cognitively developed children.
COMPUTERS IN TEACHING WRITING: AN ANNOTATED BIBLIOGRAPHY

A Thesis
Presented to the
Faculty of
California State
College, San Bernardino

by
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June 1984

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ABSTRACT

Computer-assisted instruction in writing dates back nearly two decades, but widespread interest in use of the technology grew rapidly after the introduction of microcomputers to the classroom in the late 1970s. By 1984, it seemed appropriate to measure the extent and success of computer-assisted writing instruction, and this thesis attempts to serve that purpose via an annotated bibliography and summary essay.

The bibliography consists of seventy-five entries, published between January 1966 and January 1984. Included are articles from English journals, technological trade publications, education and consumer periodicals, and the proceedings of a special conference dealing with computers and writing instruction. Each article is briefly described and its place in the literature as a whole is evaluated. The articles are divided into four major categories of current computer usage: Drill and Practice, Tutorial/Dialectogue, Word Processing, and Textual Analysis.

The summary analysis, which opens the thesis, discusses each major usage of computers in writing instruction and concludes that there is no good evidence to date indicating that teachers must, or even should, use computers as a major component of writing instruction. Greatest prospects seem
to exist for the word processing function, but only with

substantial improvement in software designed specifically for the classroom.
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INTRODUCTION

It is axiomatic that technology moves faster than scholarship--much faster. Nowhere is this more evident than in the development of microcomputers and our understanding of how (and even whether) they can be used successfully in the teaching of composition. Since the first microcomputers (popularly called personal or home computers) became widely available in 1978, advances in microprocessor design have created machines that do more, and do it faster, than previous machines that were barely out of the cartons. Yet, in the same period, application of this remarkable technology has barely touched American education. And, despite a great deal of early prophecy, computers are less used in composition instruction than in almost any other discipline. The purpose of this essay, and the annotated bibliography that follows it, is to trace how, and with what success, microcomputers are used to teach writing and to suggest some of the prospects and problems for future development.

There are four basic applications of microcomputer technology software now being used to teach writing: drill and practice, tutorials/dialogues, word processing, and textual analysis. They are described in order of ascending
complexity and, roughly speaking, chronological development.

Drill and practice programs were the first major applications of computer technology to writing instruction, and it is easy to see why. These programs are relatively easy to write, inexpensive to buy, and convenient to use. They are organized on the same principle as the traditional drill methods used in flashcards or workbooks: repetition and practice builds competency. Drill and practice programs are prevalent in the areas of grammar, syntax, and general mechanics, and are frequently used in a remedial capacity. They are the mainstays of "learning laboratories" where media instruction is used to remediate fundamental writing deficiencies. A recent directory of software lists over 250 programs which provide practice in these areas and constitute 80% of all "language arts" writing software (See Chartrand, p. 15). Proponents of these programs point to the "activeness" involved in learning to use the program and the immediacy of the computer's feedback to student response. They also laud the computer's patience, accessibility, and confidentiality in dealing with remedial and slow learners.

Regrettably, most drill and practice programs become very tedious and, at least after the novelty disappears, few students seem willing to spend much time on them. The early programs were entirely linear, which means students were locked in to a progression of exercises that might not fit their needs or interests. Many of these programs are still
in use today. The largest single development of this software occurred in the mid-1970's at the University of Illinois and resulted in PLATO, a simple to use set of drill and practice programs in five disciplines: accounting, biology, chemistry, English, and mathematics. The programs were tested at five community colleges, however, and the results indicated that they did little to improve student writing achievement (Wresch, p. 32). As a simple beginning to computer assisted instruction (CAI), drill and practice programs were certainly necessary, but they were soon criticized for constituting a trivial, ineffective, and wasteful use of computer technology. The proliferation of these programs and the inevitable commercial hype that flowed from the firms marketing them did little to endear CAI to teachers of writing.

Tutorial programs, and their more advanced cousins, dialogues, were a natural outgrowth of dissatisfaction with the limitations of drill and practice. Tutorials have the advantage of branching programs, which permit the computer to call forth information and exercises relevant to student input to the program. Instead of merely identifying an adverb in a sentence, for example, and flashing right or wrong to a student response, tutorials can note a wrong answer and display explanations and supplemental exercises for additional practice. These programs achieve greater flexibility by anticipating incorrect responses and providing immediate remediation only for those who need it. The goal is to
reach some equivalency to a human tutor, who can fashion exercises and instruction to the particular needs of a particular student; as such they represent a major improvement over the linear and lockstep drill and practice software.

But tutorials also have their problems and limitations. In many ways they are just better drill and practice and are not applicable to higher order thinking functions involving analysis, synthesizing, or artistic creativity. The fact that they can be used only for low order learning, of course, does not negate their value but it does mean that they should at least be superior to conventional methods at what they do. As yet no good evidence exists that they are. Also, tutorials are difficult to write and therefore much more expensive than drill and practice software; the branching function requires very elaborate programming and much more content knowledge, since anticipation of the broadest possible range of student responses to each question is involved. Although they constitute a refinement of the technology's application, tutorials are still useful only with certain students and under certain circumstances, primarily mechanics-deficient students who like and are comfortable with the technology.

In an effort toward further refinement and greater applicability to the writing process, dialogue programs were developed. These are the "talking" programs, tutorials that ask questions of students and that at least simulate some sort of response to answers. One of the earliest and most
often cited of these programs was developed by Major Hugh Burns, a writing instructor at the Air Force Academy. Burns, with the assistance of George Culp, wrote three writing invention programs based on three popular heuristic techniques. These use the questioning mode to prod students into topic delineation and the marshalling of evidence to support primary points. Each program gives the impression of conducting a dialogue between the computer and the student although, of course, the communication is not content specific and is entirely artificial. Burn's programs provide a methodical presentation of heuristic devices and in so doing help focus on what the student already knows, and what the student needs to know, before proceeding with the paper. Each program's manner is unfailingly friendly and encouraging (an often-claimed advantage over human teachers) but is entirely arbitrary in the sense that it responds identically to anything a student answers. For example, the program may prompt for facts supporting a thesis statement, but will respond warmly whether the student types a brilliant answer or gibberish. It takes more than a little hyperbole to call an exchange a dialogue when one side has already decided exactly what it is going to say before the other side even sits down to talk.

Dialogue programs do, however, represent an effort to encourage higher order learning functions during both the pre-writing and composing stages of the writing process and, as such, represent growth over earlier applications. They
do not, however, seem to do a better job of presenting heuristics than a good teacher, who can answer questions, clear up confusion, answer content-specific concerns, respond to student anxiety, and terminate the whole business and try something else, if that is advisable. Cheery responses aside, it would not take most students long to realize that the computer is a very rigid unbending instructor, even in dialogue programs that are intended to bring about creative and spontaneous thinking by their users. One advantage of these programs, however, is that the entire "dialogue" can be printed out as hard copy for students to take with them, and they can be easily and quickly revised during and after program use. Students who are able to consult and review the best of their interactions with the program may have a useful aid to their writing.

It is this application of computers to the creative processes of writing which constitutes the ultimate test of the technology's ability to simulate human intelligence. We need no further evidence that a computer's binary system can tabulate and calculate far better (and much faster) than can the human mind. The computer's superiority for repetitive drill and practice functions is also widely accepted, although the long-range efficacy of such applications for learning may still be in doubt. But the great challenge for computers lies with those subjective and complex processes that involve rhetorical invention and written composition, processes which the discipline itself does not fully under-
stand. Writing may be an act of creative intelligence that no computer can simulate, let alone duplicate. Computers will produce words via a programmed formula, but they can neither create nor evaluate those words in terms that constitute an understanding of human communication. It is this combination of amazing vitality and total stupidity that makes the computer such an enigma for teachers of writing and the authors of dialogue software.

Word processing is the most frequently used computer application in writing and it is the area with the most sophisticated hardware and software. The reason for that is not hard to deduce: It has direct application to productivity in business and industry settings. The sale of word processors and their software is now a billion dollar industry and is growing at a phenomenal rate. That sort of economic push tends to get results in technological development and, in these times of government deficits and lowered expectations, instructional applications have lagged. Ironically, the sophistication and complexity of word processing technology has retarded its use in school settings; commercial word processors have been too difficult for students to learn to use. The introduction in the Summer of 1983 of Bank Street Writer (and WANDAH) and other simplified word processing packages promises to create a genuine revolution in the teaching of writing, provided sufficient hardware is made available and students are taught to type. (Typing instruction packages already constitute the most
popular software, aside from games, being purchased by computer owners).

One tested application of word processing for writing instruction involves frequency and ease of revision for novice writers. It is reported that beginning writers are often loathe to revise their work because it necessitates the laborious process of recopying. With a word processor, students are said to be more willing to edit their papers, since the processor makes such corrections easily and can quickly print any number of draft copies. It is also reported that writers work more freely and spontaneously on the computer because the words that appear seem much more transitory than those on the written page. On the other hand, one researcher suggested that the mechanics of using a word processor may crowd short-term memory and lead to the development of poor composing practices, although simpler software packages may eliminate this problem. To date no conclusive evidence exists proving that word processing results in improved writing in any quantifiable sense, but improved programs, intelligent curricula, and expanded research may well find that result in the foreseeable future.

The use of computerized text analysis is at once the oldest and the newest application of computers to the instruction of writing. Efforts to use computers to grade student essays date back to the early 1960s and have reappeared off and on since then. The hope was that a program could be written which, through a few key elements (graph-
emes, punctuation, verb tenses, word choice, etc.), could identify the quality of a piece of student writing with a consistency equivalent to that of a panel of human readers. English teachers at once hoped for an end to the drudgery of grading stacks of student papers, and at the same time feared that their discipline might change radically or even disappear. It was at about this time that some English instructors began to downplay the importance of mechanics in writing and stressed the importance of content. The process of writing, it was said, is a learning experience of its own. In any event, the right combination of graphemes became one of the lesser concerns of a new generation of writing instructors who found the subjective nature of holistic grading to be better attuned to a modern view of what writing instruction should do. Like everything else in this area, no one can yet say whether the writing is better or worse for the changes.

The new view of computerized text analysis is in consideration of style, rather than mechanics. Computers can be programmed to identify sentence length, use of modifiers, active and inactive verb tenses, verbosity, cliches, T-units, and many other components that make up clauses, sentences, and paragraphs. The claim is that if we can get students to improve these small elements of composition, the overall result will be improved writing. One program even goes a step further and makes judgments on the affective style of writing by using a 1000-word semantic dictionary to
determine the emotional power of word choices. The authors hypothesize that computers may be able to scan and evaluate speeches and advertising copy to determine probable audience response (Anderson, p. 42). Most instructors may not be ready to go that far, but computer analysis of writing has the potential to grow more sophisticated in ways that will result in some valuable feedback to both novice and mature writers. If the computer is able to spot patterns affecting tone that a human reader would miss, text analysis could develop into a helpful tool for the composition instructor.

The four applications just discussed constitute the major uses of computers to date in the teaching of writing. Compared to the advances in computer technology over the past fifteen years it is not an impressive recounting, yet each application has potential value. Drill and practice programs may supply a modern learning skills laboratory with software that provides patient and accessible practice in grammar and mechanics for students from elementary schools through college. Branching and dialogue programs represent attempts to stretch computer technology to its creative limits. Word processing may improve student writing through simplification of revising and editing. Finally, textual analysis could allow us to identify and count components of writing that might otherwise go unnoticed, and improve revision as a major component of writing instruction. That no one of these applications has yet been developed to its full potential, nor been proven to facilitate writing excel-
ence, only illustrates the potential for research and development in the field.

Some barriers must be overcome before the full potential of microcomputers in the teaching of writing can be approached. Writing instructors at all levels have not been convinced that CAI can help them with their problems in teaching writing, a caution that has probably served them well in this instance. A discipline proud of its roots deep in the humanities is not likely to embrace computer technology too quickly. Of more practical concern, computer hardware has not been readily available in most schools. One microcomputer per classroom, let alone one per school, is not likely to have any real impact on instructional modes. ("Imagine one pencil per classroom," as one reviewer puts it.) Additionally, teachers and students will need to get comfortable with the technology, and students will need to acquire typing skills early, although improvements in "user-friendly" hardware and software will do much to facilitate easy accessibility.

Perhaps the greatest responsibility for the future of computer technology in the teaching of writing lies with the classroom teachers who will be under increasing pressure to use it. It is their responsibility to demand quality software that meets definite instructional needs, and to resist pressures to use computers simply because they are available and fashionable. It would be a perversion of both quality education and computer technology if the ability of
computers to identify specific features of grammar and syntax is allowed to become the focus of writing instruction, replacing the more subjective measures of writing as a process of learning. Just as the adoption of standardized tests may cause teachers to "teach to the test," so may the availability of computers cause teachers to mold their writing instruction to what the computer can teach, rather than what students need to learn, about writing. As the technology develops, it will fall to teachers to see that computers serve valid educational goals, rather than change teaching to suit computers.

Finally, the confidentiality of the writing process, including instructor evaluation of student writing, needs to be protected. The technology exists to tap into anything being written on a computer screen or stored in a computer memory; but this ease of retrieval, a benefit in other circumstances, can turn against the instructional process if used without the consent of the writer. Just as teachers need to know that outsiders will not eavesdrop on their computerized comments and evaluations to students, students need to know they can develop drafts or work on a tutorial without teachers eavesdropping on their work. As in other areas of modern life, misused computer technology can invade cherished regions of privacy.

Whatever the future may hold, to date there is no evidence that writing teachers need to use, or even should use, computers to teach writing. Computers are best suited
to drill and practice in mechanics and grammar, and even that benefit may wane as the novelty effect wears off. Students weaned on video games will not necessarily sit still very long for spelling drill, no matter how well it simulates PAC-MAN. The quick decline in popularity of such games (from their zenith in 1982) may be evidence that computer graphics grow stale rather quickly. And if this is so, how much less useful are the tutorials and dialogues that constitute little more than electronic workbooks? As one reads through the bibliography, it becomes apparent that the work of some courseware authors is shaped more by what the computer can do than by what needs to be done.

The annotated bibliography that follows does not pretend to be all-inclusive, nor does it need to be. It does, however, represent every major thrust (and most of the minor ones), of research and opinion in the area of computers in the teaching of writing published between January 1966 and January 1984. Those eighteen years saw no definitive and seminal work, but they did show a great deal of pioneering in the exciting convergence of a new technology with an old and respected discipline.
I. INTRODUCTIONS AND SURVEYS


Intended for high school English teachers and dealing with CAI to early 1977, Barth's essay is useful only for some of its citations, which were not found elsewhere. It briefly surveys computer grading, language arts applications, writing, and software. Unless the reader is seeking some obscure citations from the mid-1970s, it can be easily skipped.


Does the development of instructional software in writing deserve the same credit as traditional publications in English for a professor at career review time? Does an English professor teaching colleagues how to use a word processor deserve professional service credit equivalent to hours spent on curriculum committees? These and other very practical matters of concern to the discipline are discussed by Bourque in this deadly earnest call for academic respect for such endeavors. The author provides a checklist of "sensible criteria" for judging software and concludes that English departments that wish to join the contemporary move to CAI would do well to reward department members who are working successfully with computers.

Bradley, Virginia N. "Improving Students' Writing with Microcomputers." Language Arts. 59, No. 7 (October 1982): 732-743.

Bradley wrote this article for elementary school users as part of the Language Experience Approach to the improvement of reading and writing skills. Her review of computer applications includes invention stimulation, electronic mail (children writing computer letters to each other), text analysis, and word processing. Included are suggestions for materials and usage procedures and a sample sentence combining program for use by sixth graders. The
author concludes by observing that the children who use these programs seem highly motivated by seeing their language on the monitor ("really fun") and tended to be less bored, less apt to arbitrarily conclude their stories (in the case of first graders using the Apple Writer) and enjoyed the quick production of hard copies for student sharing. Guidelines for a specialized elementary school word processing system are also provided.


John Henry Martin teaches very young children (K-1) in Stuart, Florida how to write using a computer. This delightful interview with him provides an overview of his methods for using the computer to "strip the school of its drudgery and inefficiency, elevating it to a beautiful sustaining function within our society." Martin's obvious excitement over his discovery and his sincerity in its propagation place this article a notch above the standard "why computers are just wonderful" endpiece.


The origins of today's CAI, according to Briand, lie back in the early stages of the media-in-education movement, including lectures on videotape and the use of character generators. He is optimistic about a future where computers evaluate student writing via a quick printout analysis of grammar, spelling, punctuation, and the syntactical qualities of coordination, subordination, and modification.


A compilation of instructional software, the Directory includes nearly sixty pages of non-evaluative descriptions of about three hundred language arts programs, mostly of the drill and practice variety. More than half of the programs are applicable to composition instruction, ranging from elementary mechanics to a tutorial on parallel structure, sentence beginnings, and verbosity for high school students. Given the continuous development of new products and uncertain availability of old products this sort of compilation is probably useful only to scan the range of commercially avail-
able software and to trace trends in courseware development at a given point in time.


This interesting bibliographic essay came at a time when claims for CAI were becoming more muted (although Newsweek could still run a computer ad that described classroom computers as having "the stamina of Hercules, the patience of Job, and one pupil per class") and serious efforts were beginning to emerge in the area of tutorial and dialogue programs. Ultimately, Dieterich sees the success or failure of educational computing depending on how well teachers use it. If the computer can release the teacher from routine chores and provide more "quality time" for individual guidance and attention; if it can lead students to the higher order thinking functions which are the real goals of education (and which only the human mind can do), then it will be a blessing to everyone involved. The author was not blind, however, to the problems of classroom computer use: cost, amount, reliability, maintenance, complexity, comfort, standardization, and content. More than ten years after the publication of this report, it is probably fair to say that the problems are still more prominent than the prospects.


Franke wrote this article in order to voice questions about the misuse of computer applications in writing. Some of his concern relates to shunting remedial students, and "unsatisfying" teaching areas like grammar and mechanics, to the computer simply because instructors do not like to teach them. More evocative, however, is Franke's concern that the computer may change the entire nature of how the teaching process occurs. Programs already exist that can perform checks for spelling, punctuation, and other editing skills, as well as provide organizational formatting. At what point do we stop teaching these skills? And do students with access to such programs have a competitive edge on students who do not have them? Franke draws some parallels to the introduction of hand-held calculators to mathematics classes, but the easy availability of computers and composing/editing software is unlikely to come as quickly as the calculator revolution. At
root is the question of what do students need to learn how to do, for its own sake, and what can be left to machines to do? These are questions that few working in CAI instruction are asking, at least in print, and Franke deserves credit for raising them.


This NCTE publication is one of the earliest attempts (and probably still the best) to come to grips with computer teaching technology in a theoretical framework. It is a thoughtful and stimulating essay that pushes past both the utopian rhetoric of the computer advocates and the fear of total takeover by computer-phobes to conclude that computer-based English learning systems do have potential in the classroom. But Goldberg believes that some tough questions need to be asked about the effects of mechanized learning on teachers and students: Does it result in a mechanized view of the process of learning? Should one teach composition on Skinnerian principles of stimulus-response education, even if one can? It may be more than just computerphobia to fear that computers might serve human engineering goals that result in predictable standardized writing products. Goldberg concludes his monograph by proclaiming that while computers have an appropriate secondary role as an adjunct to learning they can never be truly formative in any enriching way. This evocative work, which contains an excellent bibliography on the formative stages of CAI, should be read by every person working in the field.


An Exxon Foundation Grant funded the research resulting in this lengthy monograph on computer applications in use during the 1977-79 period. Jaycox joins the call for computer literacy for humanists and outlines various drill and practice and tutorial applications. Although computer simulations are best used in math and science instruction, she sees an "encounter situation" use in English classes, provided good models are developed. After discussing course management applications (test banks and analysis programs) the author concludes with some

This article, in two parts, provides a superb overview of the history of CAI development. Although not focused on composition CAI, it does discuss PLATO and TICCIT, the two large-scale language arts programs that have been used for writing instruction. Readers seeking an understanding of how computer-based writing development fits into the overall growth of computers in education can get a clear perspective from this detailed but not difficult article. A long list of references is provided which can promote further study in dozens of different directions.


As part of an entire issue given over to computers and writing instruction, Kreiter-Kurylo has written a brief summary article describing computer applications in grammar and syntax, rhetorical invention, and composition analysis. The work of a single researcher is uncritically discussed for each (Wittig, Burns, and Briand, respectively) but there is no bibliography or source list and the citations for the three authors are rather obscure, when more recent and better sources (especially for Burns and Briand) are available. No new arguments are found in this article but it does provide a brief overview of the potential value of computers for individualizing instruction.


These proceedings of SWRL's 1982 Conference on the Role of Computers in Composition Instruction consist of five papers, summaries of courseware demonstrations, and a review of SWRL's work in developing computer-based composition materials. Taken as a whole, the work provides a good introduction to the state of the research in early 1982. Two of the five papers deserve close reading: Earl Woodruff on "Computers and the Composing Process" and Alfred Bork's "Reactions" to the proceedings.
Woodruff reviews the potential uses of computers as exploratory tools in writing, and describes programs that can boost a student's analytic and comprehensive view of his text. Under the rubric of "consultative interaction," the computer as consultant, questioner, and collaborator is postulated. Bork, whose highly regarded work with educational technology is on display at the University of California at Irvine, closes the proceedings with a cautionary paper that reminds the participants of the "bad practices" that characterize much of what is now called computer-based learning: dependence on print techniques, discontinuous program timing, trivial content, and too little interaction. The remaining three papers include a short "state of the art" monograph by Robert Shostak, Hugh Burns briefly describing his rhetorical invention programs, and Ann Lathrop in a non-specific description of proper courseware selection procedures. The proceedings also include uncritical courseware demonstrations and an explanation by the editor of SWRL's problems in developing computer-based composition materials. A short but useful bibliography is appended.


Leibowicz has written an excellent "state of the field" article summarizing the best research to date. It is a pretty meager lot, which is in itself instructive. Four types of CAI in English are described (drill and practice, tutorial, dialogue, text analysis and editing) and some hope is held out that the prevalence of drill and practice programs is coming to an end and that more useful and interactive programs will be available in the future. The usual plea is voiced for acceptance of computers by the discipline as "a potent ally in the English teacher's struggle for humanistic education," but the author concedes that he found no evidence of improvement in student writing due to CAI. He did find, however, that CAI "did no harm" and that students seemed to like it.


Humanists should approach the computer bravely, according to Nold, because it is especially suited for the patient repetition sometimes required to teach a concept or skill. The humanist should demand more, however, than simple stimulus/response programs and Nold finds these rare. Poetry and
criticized, with the author cautioning against the un-informed purchase of software. The cautions, whether of instructors, various programs are dis- cussed in the article. Each is said to have value and deserves a trial by critical evaluation, but the result is a good introductory article for those seeking a quick overview of the topic. Many would contain that her statements are just as relevant years after she wrote. The author cautions against the un-informed purchase of software. The cautions, whether of instructors, various programs are dis- cussed in the article. Each is said to have value and deserves a trial by critical evaluation, but the result is a good introductory article for those seeking a quick overview of the topic. Many would contain that her statements are just as relevant years after she wrote. The author cautions against the un-informed purchase of software. The cautions, whether of instructors, various programs are dis- cussed in the article. Each is said to have value and deserves a trial by critical evaluation, but the result is a good introductory article for those seeking a quick overview of the topic. Many would contain that her statements are just as relevant years after she wrote. The author cautions against the un-informed purchase of software. The cautions, whether of instructors, various programs are dis- cussed in the article. Each is said to have value and deserves a trial by critical evaluation, but the result is a good introductory article for those seeking a quick overview of the topic. Many would contain that her statements are just as relevant years after she wrote. The author cautions against the un-informed purchase of software. The cautions, whether of instructors, various programs are dis- cussed in the article. Each is said to have value and deserves a trial by critical evaluation, but the result is a good introductory article for those seeking a quick overview of the topic. Many would contain that her statements are just as relevant years after she wrote. The author cautions against the un-informed purchase of software. The cautions, whether of instructors, various programs are dis- cussed in the article. Each is said to have value and deserves a trial by critical evaluation, but the result is a good introductory article for those seeking a quick overview of the topic. Many would contain that her statements are just as relevant years after she wrote. The author cautions against the un-informed purchase of software. The cautions, whether of instructors, various programs are dis-
problems of incompatible languages. This is a very balanced and literate primer on the application of computers to writing instruction and makes an excellent starting point for new readers in the area.
II. DRILL AND PRACTICE


In an apparently guileless report on what to do until the computers arrive, Anderson suggests various inexpensive devices that provide drill and practice opportunities without a computer. In so doing she inadvertently (or so it seems) compels the reader to consider whether such devices are not perfectly acceptable alternatives to expensive drill programs in terms of motivation, self-correction, and reinforcement. Reading this simple article is enough to make one re-discover flashcards.


Breininger's article recounts her efforts to create a set of drill and practice programs in grammar and vocabulary to which students will respond "like a conversation with a knowledgeable and witty friend." Although programmed reference to student names is far from unique, the use of material taken from trivia books is, and produces some fairly lively exercises that hold student attention. Similarly, colon and semi-colon exercises simulate a football game and might appeal to the Atari-generation in ways that workbooks never can. The root issue is whether such gimmick programs improve learning and whether their appeal fades too quickly to justify their costs; the author makes no effort to deal with this.


This brief summary article describes the computer-aided instruction component of the University of Colorado's College Expository Writing Program (CEWP). CAI packages are used for remediation of basic writing skills in grammar, spelling, and punctuation. Although the materials were originally tied to the PLATO system, the College later abandoned it to develop programs that could be used at a
wider variety of terminals. Lyons concludes that students were generally successful in improving basic writing skills with the computer programs, but he also recognizes that new software must go beyond simple binary exercises in mechanics if writing CAI is to ever find a wider constituency. As an interesting sidebar, the author reports substantial faculty resistance to the use of CAI in writing at the University of Colorado.


Efforts to test the effectiveness of CAI in teaching basic English grammar, punctuation, word usage, and spelling at Indiana University are detailed in this article. Students in elementary composition and newswriting courses using CAI were given pretests and post tests and the results were compared with those of students in courses not using CAI. No conclusive evidence that CAI improved learning was found. However, Oates points out that computerized materials can give students in a learning lab far more remedial work in mechanics than can most classroom instructors, and that both instructors and students appreciated the availability of the CAI materials. The disappointing results of the post test notwithstanding, Oates feels that CAI is an effective tool for teaching basic grammar review to beginning writing students.


The authors were involved in writing a remedial skills drill and practice program (SPELLWELL) for basic writers at Iowa State University. The process used to develop the program is discussed at length and the value of collecting data for program updating and improvement is lauded. There is no source list or bibliography.


In this oft-cited article, Schwartz articulates the position of most humanists currently working with computers in the teaching of composition: Computers can never replace teachers, but for certain uses and with certain students can be patient and understanding aides, freeing the teacher's time for more creative tasks. Of most interest are her use-
ful caveats for program purchases and her five-point litmus test for effective CAI. The latter includes respect for the human rights of the user, promotion of the individuality of the user, ease in use, support for the essential social character of human learning, and solicitation of user input for evaluation and modification of the program in the school setting. With better communication between programmers and users, the computer program may become a "kindly genie or mentor" rather than a "brutalizing monster." Much of Schwartz' discussion seems directed at drill and practice applications rather than the more advanced programs now coming to the fore; as such it seems oddly dated for a 1982 publication.


In the Spring of 1982, the Southwest Regional Laboratory (SWRL) in Los Alamitos, California held a conference focusing exclusively on the use of computers in the teaching of writing. Southwell was a participant at the conference and the editor of The Computing Teacher was impressed enough to request the author to summarize his presentation in this short article. It deals with teaching basic grammar to freshmen at York College (CUNY) in Jamaica, New York. CUNY's COMP-LAB materials were translated into a CAI format for microcomputers and, beyond the convenience and flexibility expected of auto-tutorial instruction, the computers added branching, patient and impersonal responses, and dynamics of presentation to the process. No conclusions are postulated, however, as to whether basic grammar competency was actually enhanced.


This article systematically describes the COMP-LAB system used for remedial grammar instruction at York College/CUNY. Sample lessons from computerized modules are illustrated and claims are advanced for CAI in grammar as a greatly effective teaching device (documentation pending publication of a report under preparation). It is difficult to separate the auto-tutorial values of COMP-LAB from the computer applications, but Southwell does report that basic writing students show favorable attitudes toward working on the computer. Although critical of "mindless drill and practice" software, Southwell's
sample runs might appear to fit that category.


In this detailed article Southwell argues that the computer may actually have the advantage over teacher-based instruction on remedial writing conventions and grammatical forms. By defining developmental as "teaching something new, rather than trying to fix something old and wrong," the author develops seven principles for remedial curriculum design that attend to positive learning results: a systematized program for delivering instruction and to monitor and test learning. Computers are appropriate for use in all seven principles because they lend themselves well to sequencing, checking retention and understanding, providing practice in concepts, and testing. Remedial learners are said to need the support system that good CAI can provide, to enjoy both the sense of control over their own learning and the privacy of communion with a computer terminal that eliminates personal embarrassment in front of teachers or other students. Sample software meeting Southwell's criteria is modeled.


This is a playfully written description of a verb-choice program developed by the author to encourage sentence construction within a sense of context. Abecedarian, as Williams calls his program, "attempts to show a portion of the English finite verb system at work." A sample running of the program is illustrated and the footnotes include the entire command list as well as suggestions for modifying the program so it can be run on other hardware. Readers interested in writing similar single-purpose programs would probably find this a useful model.


Zoller describes a summer session experimental program at the University of California at Riverside consisting of twelve grammar and syntax computer programs (developed by a local community college instructor) in a remedial English course serving fifteen students. The students, ranging from second semester freshmen to late seniors, completed at
least one program per week and met for a two-hour weekly workshop. No systematic evaluation of the computer component was attempted, since the time and sample were both so small; however, the students reported that they liked the activity of drilling on the computer and the instructor felt that CAI was useful in practicing some of the elements that comprise good writing.
III. TUTORIALS AND DIALOGUES


In this paper presented to the Ontario, Canada proceedings of COMIT (Computerized Multimedia Instructional Television), the author describes a computer-based tutorial developed for sophomore English students enrolled in a required critical analysis course. Students spent four to ten hours on a module covering analysis topics dealing with linearity, setting, imagery, and structure. In one of the more interesting aspects of the program, students were given an unpunctuated, unspaced version of a passage from a literary work and then asked to reconstruct it in a manner that would improve comprehensibility by other readers. Other programs (not all related to computer use) dealt with simple levels of comprehension and grammar and constituted basic English drill and practice that seemed out of place in a sophomore critical analysis course.


When the definitive history of the role of computers in composition instruction is written, this article will probably open the "beyond drill and practice" section. Captain Burns, an English professor at the Air Force Academy, and George Culp of the Computation Center at the University of Texas, combined their disciplines to develop three programs for pre-writing invention exercises. The programs consisted of questions to the user based on either Aristotle's enthymemes, Burke's dramatistics, or Young, Becker and Pike's tagmemic matrix. The programs were administered and tested with care and the results were systematically collected and recorded, a rarity in the research done thus far in the field. Although no definitive results were claimed, the programs were reported to assist students to articulate, refine, and preserve their ideas and, even without being content specific, questioning dia-
logues were judged useful to students in the pre-writing stage. It can be argued that an able instructor could present such heuristics to students without the help of a computer, and provide content-appropriate examples to boot; but Burns and Culp deserve credit for working beyond the common drill and practice programs of 1977 (when they began). Furthermore, the common computer values of self-pacing and endless repetition opportunities, when applied to these programs, may make them very useful to certain students in certain circumstances. The authors deserve pioneer status in the movement to build useful interactive programs; this article is worth reading for that alone.


This article, included as part of an entire issue devoted to the PLATO CAI system (and published by PLATO's creator, The Language Learning Laboratory at the University of Illinois at Urbana-Champaign), describes Hinton's efforts to develop tutorial programs applicable to upperclass and graduate level English. Using lessons on Tolkien, Chaucer, Yeats, and others, he attacks the problem of narrow, single-word response questions by providing greater free response opportunities. The result is questions that are narrow enough to permit computer response but open-ended enough to require intelligently reasoned input that indicates both good thinking and clear writing. Hinton's work does not necessarily promote improved composition, but it is a valid attempt to apply computers to student analysis of literary works.


Horodowich delivered this advocacy paper before the 1979 Annual Meeting of the Midwest Modern Language Association in Indianapolis. Citing the values of both the Tagmemic approach and computer-assisted instruction, the author argues that tagmemic analysis via computer provides a vivid lesson in clause analysis that confronts students with the need to make the choices that result in a personal style. Her Instruction Dialogue Author Facility (IDAF) program provides instruction on the four English clause types and then gives students practice in recognizing the types and creating their own complex and compound-complex sen-
tences. A readout for the program comments is provided in the appendices.


Compupoem, a language arts game activity, is often cited as an important example of involving microcomputers in the composing process. This short article by the program's author is an excellent introduction to Compupoem. Although generally restrained in his claims, Marcus believes the program has a role in teaching writing as a discovery process by stimulating invention and encouraging word sensitivity. Students choose words in response to prompts for specific parts of speech and the computer then arranges the words into a haiku-like poetic structure. Since the vocabulary is extrinsic to the program, poet-authors have ranged from fourth grade to graduate school. Marcus confronts the question of who is the real poet, the student or the machine, by applauding the use of such concerns for classroom discussions, but it seems likely that the program's greatest value lies in teaching parts of speech and not poetry.


With the boom in home computers has come a proliferation of popular periodicals aimed at the personal computer market; this article surveys creative writing software for that audience. The process approach to writing is briefly explained after which four programs are reviewed (Compupoem, Poetry Writing, Story Maker, and Cognitive Organizers) and the author tries his hand at developing his own instructional writing program for college students. None of the programs, including his own, are seen as particularly beneficial, although some kind words are spared for Compupoem. The software is seen as representing some "fresh approaches" to classroom writing, however, and more advanced hardware technology may eventually result in dramatically improved computer-assisted writing instruction.


Dr. Schwartz presented this heuristic for invention in a paper delivered before the annual meeting of the Conference on College Composition in San Francisco, March 1982. Through an interactive questioning process students were led to provide and
consider evidence in support of their own hypotheses. The program was tested in a 1981 World Literature class where some students used the program to write a timed in-class essay examination (not necessarily the best choice of tests) and some did not. There was no qualitative difference between the two groups, but the computer students did write more, and in greater detail. In a side note, Schwartz sees some value in the computer screen as a means for audience feedback to student writers.


Wordsworth II, a composition software package developed at Michigan Technological University, is described and evaluated in this article written by two of its authors. The package consists of eight modules based on a process approach to writing and is intended to supplement traditional classroom instruction in composition. Each module focuses on a typical discourse assignment (narration, description, persuasion, etc.). The narrative module is described in detail and represents a fairly sophisticated dialogue program with an elaborate branching function. Although the authors tend to wax poetic, Wordsworth II does not go beyond the standard invention program developed five years earlier by Burns and Culp. That not withstanding, however, this article is worth reading for its detailed model of a tutorial/dialogue program now in use.


Sharples teaches in the Department of Artificial Intelligence at Scotland's University of Edinburgh and has experimented with using computers to teach language awareness and control to primary school children. Using three "average ability" boys, the author structured nine sessions of between one and four hours each in which the students used LOGO to generate poetry. Early sessions involved random strings of words and were followed by poems structured by parts of speech and, finally, "sensible poems" that showed some measure of sophistication. Sharples concedes that the study of generative and creative linguistics does not require computers, but he did find that the computer captured the boys' imagination and that the matching algorithm used for word choice in the later stages of the experiment would have proven too tedious to simulate by hand. The article concludes by describing additional pro-
grams being developed that would consist of natural language generators focusing on stylistic peculiarities such as repetition, punctuation, the use of connectives and relative clauses, etc. These components are seen as less context dependent than other aspects, such as choice of description or narrative style, and therefore appropriate for computer investigation.


Although burdened by a great deal of jargon, this article provides an excellent description of attempts to develop composing programs for intermediate level grade school pupils. A first study dealt with optional assistance commands which responded to student requests for help with spelling, content, sentence openness and abstract element lists. The program was tested on a small group of sixth grade students and did not result in improved maturity in composing. The second study, building on the results from the first, provided for more active intervention in the composing process, but its testing on thirty-six eighth grade students resulted in complaints of excessive intrusiveness. The authors conclude that children enjoy using a computer to compose and that this enjoyment will probably result in more writing than otherwise, but that the tested programs do not necessarily result in better writing. The article closes with a call for further research on advanced-function composing processes.


The University of Wisconsin Center at Marinette, through the work of Wresch and others, has acquired a reputation as an early leader in the use of computerized instruction. In this short article Wresch describes the Essaywriter program he has developed for Freshman Composition. By leading students through a series of pre-writing questions, which then are structured into an essay, Essaywriter models a standard five-paragraph freshman composition (minus the conclusion). At the time of publication the author was working to improve the flexibility of the program by increasing the range of questions and permitting students to terminate the process if they reach a dead end on their topic or discover a better subject during program execution. This is very much a work in progress, but Wresch
reports that UMCM freshmen enjoy using it, especially in groups of three or four students who "share the surprise" of the resultant essay.


For the first decade of its development, CAI meant drill and practice to most educators, according to William Wresch, director of a grant for CAI across the curriculum at the University of Wisconsin at Marinette. This single fact may do much to explain why, despite all the early hopes and predictions, "computers have barely entered the English classroom let alone revolutionized it." Although drill programs have the advantage of focusing on small chunks of information, involve direct learner activity, and provide immediate feedback on answers, they tend to be inflexible and uncreative. When PLATO, the massive series of drill and practice programs in accounting, biology, chemistry, English and math (developed by Control Data and the University of Illinois) was tested at five community colleges, "no consistent impact on either attrition or achievement" was found. The author sees the real future of CAI in the more complex (and also more expensive and difficult to write) tutorial and dialogue systems. Through the use of branching (tutorials) and natural language programs (dialogue) CAI can become a legitimate partner in composition instruction. A few of the pioneer dialogue programs, including Bishop (journalism composition, Michigan), Burns (pre-writing, Air Force Academy), and Lanham (stylistic analysis, UCLA) are modeled.


In a paper presented before the annual meeting of the Conference on College Composition and Communication in 1982 (San Francisco), Wresch describes four computer programs (two pre-writing and two text-editors) that he believes can assist the writing process. None of the programs represent anything particularly new or inventive, although the paper does introduce Lanham's (UCLA) text editor and its relatively sophisticated ability to quickly provide statistics on sentence length, use of prepositions, "to be" verbs, and nouns ending in -tion, all in one program.
IV. WORD PROCESSING


The "computer kids" of the title of this interesting paper, delivered at the 1982 Annual Meeting of the Conference on College Composition and Communication, refers to engineering students at Drexel University who are taught that revision is to writing as debugging is to programming. Technical writing instructors use a word processing lab, including a system with an automated dictionary (SPELL), to encourage students to revise their writing and to show the special advantages of word processing for students who can expect to write products that will frequently require updating. It all sounds quite mechanical, with little concern for rhetorical instruction, but Arms seems to feel that technology-oriented students learn to write best by using a technological approach—something she describes as "the power of words in harmony with the power of the computer."


Apple Computers are commonly found in both homes and schools and this review of the latest Apple word processing software would be important reading for anyone contemplating the purchase of a personal computer and its attendant software. Since software is generally not interchangeable it becomes as important to judge software as it is hardware before making any purchase decisions. As Arrants puts it, "Word processing is intensely personal. Loyalty to a package sometimes exceeds loyalty to one's political party." The author gives high marks to the redesigned (for the Apple IIe) Apple Writer II and discusses at length the improved features that make it easier to use and more functional for writers at all levels.


In a small study at Montana State University
twelve faculty and four composition students used the University's central computer as a word processor and found themselves "attracted to the new technology." Beginning writers were assisted in learning to revise initial drafts and showed improved emphasis on reshaping ideas through successive drafts, with less emphasis on grammar and lexical substitution. With the elimination of the mechanical difficulties of hand-written illegibility and lack of time for extensive recopying, both students and faculty revised more often and more willingly.


Collier's hypothesis is that the use of a computer-based text editor will significantly expand the number and complexity of writing operations (additions, deletions, substitutions, and reordering) and increase the domains upon which these operations are performed (punctuation, words, phrases/clauses, T-units, idea clusters, and paragraphs). The result would be improved revising effectiveness. Unfortunately, Collier used only four students ("of varied writing ability") to test his intriguing theory and his results are interesting but hardly compelling. The "superior writer" did well and there is a general increase in manipulation of material within the shorter domains, more experimentation, and substantially more revision. But there were no serious or elaborate additions, and the most inexperienced writers carried forward more surface errors, and recognized and corrected fewer errors. Since none of the students were computer literate they found operation of the text editor's terminal stressful; those with the weakest typing and text editing dexterity preferred handwriting.


Computers can be used successfully to implement a revision cycle in composition instruction, according to this paper presented to the 1981 annual meeting of the Conference on College Composition and Communication (Dallas). Via a pattern of revision from pre-written text, microcomputer feedback on revisions, and analysis of writing errors with suggested corrections, students will see successful revision strategies modeled. The authors also suggest computers to teach sentence combining and how to generate and arrange content. Unfortunately all
of this is postulated with nothing more than intuitive evidence that it works to improve writing, and that it improves on conventional teaching strategies that deal with these matters. By 1981, one might expect such assertions to be supported with some reliable testing of the programs.


In this purely intuitive paean to the computer text editor, Daiute contends that the editor eliminates much of the tedium of, and therefore the resistance to, text revision, helps to remove writer's block, and provides a built-in audience response. Due to the impermanence of the computer-written word, authors are said to be more experimental in their approach to the task and children less tyrannized by tiresome and unrewarding tasks such as spelling and grammar checks and recopying. Since "people think fast and move slow" and computers do not think at all but "move fast and execute instantly" the text editor would appear to be the perfect device to take the drudgery out of writing by freeing short-term memory for the creative work of manipulating data and planning writing.

This article is convincing, but more research is needed before the text editor can be accepted as the unmixed blessing the author proclaims. We need to know if and how computer-writing changes an author's style and how it affects organization. Furthermore, there is some evidence (see Gould, "Composing...") that computer writing overloads short-term memory with the details of running the program and crowds out some of the ability to compose efficiently.


Text editors may not be the unmixed blessing that some claim, according to this article written by an associate at IBM's Research Center. In a well-planned and detailed study, ten IBM research professionals, all computer-experienced and used to the text editor, wrote eight letters, four on the computer and four in longhand. The discourses were specified as message, routine, map, and competitive. In both modes the writers spent two-thirds of their time planning, but the text-edited letters required 50% more composing time, in part because of the large number of changes the authors made in formatting, text positioning, and modifying the formatted
versions. The comparative quality of the two sets of letters was judged comparable. Gould concludes that text editors may lead authors to adopt poor composing strategies by dividing attention between the act of composition and the mechanics of using the editor.


This paper describes research completed at IBM to establish the ability of people who are not computer literate to handle instructions written in artificial, computer-compatible language. "Natural" vs. restricted syntax language was used experimentally with test groups of file clerks and comparisons were made on how well the instructions were executed. Gould determined that there is no "natural" form for expression of such matters: "Human linguistic and cognitive systems are better characterized as adaptive than as having strong natural tendencies." Presumably, Gould's employers at IBM were pleased to learn that it may not be necessary to avoid restricted syntax language in computer system design.


The IBM Corporation is developing a system of software packages that would provide office workers, particularly middle-level managers, with materials to check grammar and style efficacy in drafts of letters and memoranda. The system is not yet operational, but this detailed and technical article describes the intent of the software and the progress of achievement after two years of work on the project. The section dealing with the parsing of English sentences by the program provides a glimpse into the problems programmers face when they attempt to make natural language fit the limitations of a restricted syntax computer context. Other sections include reviews of grammar checking functions and strategies for style processing. This article is probably not of much interest to general readers, but it does leave one with a sense of appreciation for the complexity of detail that goes into development of text-critiquing programs.

This is a software profile and review of the Atari Corporation's latest word processing program. The reviewer found it easy to use with commands that are unambiguous and a menu that is simple to follow. New option functions such as Print Review (providing an actual screen format for what the printed page will look like) are described and a few drawbacks are delineated. Potential purchasers of word processing software would be well advised to check recent numbers of Creative Computing for excellent evaluative reviews.


Marcus, whose work with COMPUPOEM is often cited, has written an article about the values of word processing for pre-writing activities. Words on television screens are neither print nor television and this new and uncertain status ("videotext") may have value in promoting experimentation with words and sentences by writing students. Freewriting and invisible writing are discussed, as are several software programs which use the CRT to possible advantage. The notes provide a useful bibliography.


A DHEW booklet in three parts, these conference proceedings focus on the development of automated dictionaries, the use of word processors by school children, and the need for computer systems designed specifically for classroom use. The Report discusses video discs as well as computers and provides technical specifications for the computer hardware necessary for optimal educational use. Perhaps of most interest is the section detailing expectations for an automated dictionary based on current lexicographic, linguistic, and psychological research. This material is not readily found elsewhere and indicates that the "secretary's speller" now commercially available is far from adequate for school children learning to write on computers. The booklet closes with recommendations to the National Institute of Education calling for research and
funding toward the design and construction of hand-held automated dictionaries and experimental word processing systems.


Five persons, including the president of a software firm, two teachers involved in software development, and two other teachers, met with the CCN Editor (Olds) for a roundtable discussion on how word processors are, or can be, used in classroom writing instruction; additionally, this article includes short statements from each participant. The result is a thoughtful and incisive view of the potential uses of word processing. The participants vary in their estimation of the arrival time of educational (as opposed to secretarial) word processors, and all believe that teachers and administrators are currently ill-supplied with resources for using the technology; but all agree that word processing can develop better writing through improved composing strategies and more thorough editing. Given sufficient access to user-friendly machines (especially in the early grades when students are just beginning to write), instruction in typing skills, and the appreciation of writing as a dynamic process, the participants believe that a true revolution in writing instruction can be expected. Students will compose more freely, experiment with the flow of ideas more easily, and edit and revise more readily.


Overfield agrees that teachers of business English need to determine the needs of local employers and design their text-editing curriculum accordingly. She found that employers expect more than simple skill facility; they also seek workers who know standard English and have some communication skills. The author discusses in some detail her approach and methods for teaching text-editing, primarily to secretarial science and business students, and concludes that effective instruction in this area results in students who are well-prepared for assigned tasks on their first jobs.


Some humanists suspect that people who spend a
lot of time with computers, and particularly people who write about them, are devoid of a sense of humor. Schrodt, a political scientist teaching at Northwestern University, has written a jargon-filled and very technical-sounding article in which he describes...the use of a pencil for writing. Given that his prose mimics beautifully the writing found in dozens of computer science journals (the "character insertion subunit" is the end you sharpen, and the "block text extraction and replacement units" are a bottle of paste and some scissors), reading this article would be an excellent test of whether you are reading too many technical journals; if it takes you until the end to discover that the "GWP" is a pencil, you are.


A clarion call for computers as "the pencil of the future," this short article describes a program whereby Princeton University engineering students used computer writing/revising programs "to promote quick and clean drafts for sharing." Quoting E. M. Forster's dictum, "How can I know what I think until I see what I say," Schwartz applauds the move to a fluid, improvisational view of writing as a process of discovery and sees ease of computer deletion and revision as an important contribution to that movement. Computers are said to encourage more substantive revisions, reduce initial fear of making mistakes, and improve willingness to fully explore meanings, although no substantive evidence of these happy results are provided. One danger is also voiced: Computer printers make any writing look nice and this appearance may cover-up basic flaws in meaning--a phenomenon she terms "smokescreen revision."


In this front page article, Turner reports that "more and more students are discovering that the computer is the single greatest boon to writing, rewriting, and editing since the blue pencil," with the result that computer resources at universities are being strained and conflict is arising between traditional science students and new humanities users. A hierarchy of computer use seems to have arisen at many schools with mathematical, statistical, and data base users at the top, followed by
calculator-type manipulations, word processing, and with games at the bottom. Efforts at Yale and Princeton Universities are recounted as attempts to deal with the crunch, but most schools seem to place a low priority on word processor use at a time when students are clamoring for that function. Administrators are reported as seeing the purchase of personal computers by students as the best response to the new computer resources demands.


This is an "if only the computer could..." article focusing on text editing for young children. In order for computer technology to serve open learning theories and process models, more interactive and fewer static programs will be required. Sharing the common belief that computer editing can overcome the "mechanical aspects" of writing that deter proofreading, editing, and revision, the authors declare the need for a single-function text-editing system and model how one might work in a typical primary classroom writing instruction cycle. This advancement in technology is viewed as opening the way for computer instruction to facilitate "a feeling of being in dynamic communication" with the program.


This short article in a popular computer periodical reviews word processing software for both "tots and technicians." The Bank Street Writer, Talking Screen, and Quill programs are described in terms of their classroom applications. The article also discusses Bell Laboratories' Writer's Workbench but concludes that such advanced tools are not yet applicable to microcomputers and that, in any event, until personal computers are far more available no software will have much impact on the teaching of writing.


The Bank Street Writer program, developed by Intentional Educations, Inc., and the Bank Street College of Education in New York City, represents a major breakthrough in word processing software designed specifically for school children. This article provides a glowing review of BSW via observation
of children using the program and through the reviewer's own application in writing her review. Both adults and children were quickly taught to use the program (although adults had a little harder time) and both the home and school versions are described. The availability of this inexpensive, functional, and simplified software for word processing constitutes the beginning of a true revolution in the teaching of writing and this consumer's review of it does full justice to the event.
V. TEXTUAL ANALYSIS


Full-scale empirical research comes to a computer-based writing instruction support system in this study of Miami-Dade Community College's Response System with Variable Prescriptions (RSVP) program. RSVP was developed to provide individualized feedback statements to freshmen composition students in order to assist in correcting errors and expanding basic skills competency. After a brief description of the program the balance of the article details a 1978 research project (the program began at Miami-Dade in 1971) intended to test RSVP's efficacy and student and instructor attitudes toward it. Pre- and post-tests were administered to 74 students and prescriptions were produced on 361 essays. Substantial improvements in the test group over a control group were documented on an objective writing test (mechanics) but no discernible advantage for RSVP was shown by the holistic grading of essay examinations. Attitude surveys showed that the students tended to like the "personalized" nature of the feedback but instructors had mixed feelings (although only four teachers were involved). The study seems well designed and this article describes it with clarity, but readers interested in simply knowing how RSVP is being used might prefer to read the more cogent article by Kotler and Anandam published in College Composition and Communication (October 1983).


Why is some writing more interesting and enduring than others? The authors of this highly technical and quantified article attempt to answer that question by identifying, via computer item analysis, the general factors determining the attractiveness of aesthetic writing. The program stores in memory a semantic dictionary containing the one thousand
most frequent English words for which differential scores exist on the factors of evaluation, activity, and potency (compiled by Heise, 1963). It was used to scan sophomore-level essays on the topic of best and worst future personal careers, and was applied to several pieces of classic children's literature. The study concluded that the affective tone of entire passages could be measured by computer-assisted collection of the semantic differential scores, resulting in an emotional tone score that correlated well with those papers and children's books that human readers found most affecting. The authors conclude that their program could be useful in selection of textbooks (choose texts with high emotional interest) and, more chillingly for the future of rhetoric, suggest that speeches, memos, and advertisements be subjected to the program to ascertain whether "they will have the intended impact."


Bishop describes his program for computer analysis of student writing in journalism and English classes in this paper presented to the Conference on Computers in the Undergraduate Curricula, held in Claremont during June 1973. The program scans student writing for syntactic patterns specified by the author and comments on accuracy and style; the result is said to be an accurate accounting of a paper's strengths and weaknesses. In an unusual feature for such a paper, Bishop outlines three fairly easy steps for programming his system: listing key words and patterns, identifying the conditions where comments should appear, and translating the conditions into IF-THEN statements. For those who are interested this makes a good elementary exercise that can be tried on any microcomputer.


This article describing the CEEB-sponsored Project Essay Grade is a gem for researchers looking for the scholarly origins of computerphobia among composition instructors. Originally a paper delivered before the Boston convention of NCTE in 1965, Daigon makes elaborate claims for the benefits of computer-read essay systems. The Essay Grade program identified and counted preselected combinations of graphemes which were considered to be indicative of strengths and weaknesses in the papers. The machine's judgment correlated well with composition evaluations given by human graders dur-
ing the nine months of research. Daigon anticipated two adverse English teacher reactions to his conclusions: fear of the abdication of human prerogatives, and prejudices against the truly creative writer. He dismissed the former on the basis of progress ("exaggerated nostalgia for a simpler past") and the latter on the grounds that teachers harbor their own prejudices against creativity ("overburdened or untalented teachers who merely scan a paper, assign a number or letter grade, and write an innocuous comment or two"). To Daigon, the failing in a human contending with student compositions is that the person is not enough like a machine, which can "accurately and consistently respond to discernible elements of style without tiring perceptibly." He looks forward to seeing the machines made more human in their responses to substantive ideas and organizational development, perhaps with a computerized thesaurus to check content, and key words and phrases to detect organization. The author's hopes are probably still harbored by many computer technicians and school administrators but no one is so impolitic anymore as to seriously make such claims or so viciously attack the esteem of an entire profession. Daigon (an education professor at the University of Connecticut) drew battlelines early, and in so uncompromising a way, that his effects might still be felt today among late-career English instructors who came in contact with him in 1965-66. This is a must-read article.


Those who entertain only moderate expectations for computers in the teaching of writing often point to its uses in composition's small components: Computers may not be able to produce better writing but they may help teach some of the tools that go into better writing. Under the defensible assumption that word choice is related to writing maturity, Finn describes a word choice program, based on a standard frequency index and with some control for topic vocabulary. The program identifies tokens (words) and types (different words) for student essays and produces a list that can be judged for word choice maturity, an admittedly subjective determination. Eventually, Finn hopes to produce a program that will be able to prod word choice revisions, although that capacity was still undeveloped six years after the publication of this article.

Frase, a psychologist at Bell Laboratories, is often found in the literature dealing with Bell's "Writer's Workbench." This article is one in a series discussing readability formulas and argues that readability must not be confused with comprehensibility. The goal of improved writing is to make for more comprehensible reading and while the Workbench serves that end by identifying misspelled words and awkward phrases and sentences, and by measuring text abstractness, such measures do not by themselves provide clear guidelines for improving texts. This article is probably most useful within the debate raging over the use of readability formulas by reading instructors; Frase clearly stands with the holistic approach to text evaluation and, one may assume, the process approach to writing instruction.


The "Writer's Workbench" programs developed by Bell Laboratories constitutes the state of the art in computer text analysis and this is by far the best article to date describing the programs, the planning behind them, and possible instructional uses. The WW developed out of a very practical need by Bell technicians to simplify their work on documentation technology, but resulted in programs of advanced sophistication for editing and textual analysis and which show promise for higher-level learning applications in the future. The structure of the program sets is listed and the developmental rationale is explained; also, tests for validity and user response are provided. Of most relevance to composition instruction, however, is the article's concluding section on instructional applications; reasonable applications for tutorials, style modeling, and tutorial interactions are suggested. The reference list is comprehensive and provides readers who are interested with the resources to trace the intellectual roots of this complex and important development in computer-assisted writing.

Building on the work of Ellis Page, the authors attempt to develop computer-usable measures that can provide feedback to both teachers and students as part of general writing instruction. In short, the hope is to promote computerized essay grading from a placement or evaluative device to an instructional tool. Three stylistic admonitions, taken mostly from the 1965 edition of Strunk and White, The Elements of Style, were chosen (avoid excessive opinionation, avoid qualifiers that promote vagueness, and use "definite, specific, concrete language"). By programming the computer to find (or detect the absence of) specific words or phrases that relate to the admonitions, the authors hope to identify for students and teachers how any essay can be improved. Using 256 secondary-level research papers written years earlier for another study, the program was tested and found to conform to "common sense" predictions about good writing and the computer's ability to use specified words or phrases (i.e., "I think" as an indicator of opinionation) to judge stylistic traits. The authors conclude with some warnings about the usefulness of their study, but are basically confident that computers can be used to promote stylistic writing instruction if programmed properly.


One of the best known and most promising of computer editing software systems, Bell Laboratories' "Writer's Workbench," was tested at Colorado State University and the results are reported in this excellent article. Students entered their essays on the Bell system and then used a series of programs as editing/revision aids: SPELL, DICTION, SUGGEST (a substitution program), and STYLE (analysis). Thirty-eight freshman-level composition students completed the Workbench test group sections. These students "overwhelmingly agreed that using the computer was enjoyable, easy and not frustrating" and the study determined that the computer programs resulted in improved papers. The authors conclude by affirming the value of textual analysis as a teaching tool in composition and maintain that the computer is the best medium for that tool.

Kotler, Lorene and Kamala Anandam. "A Partnership of Teacher and Computer in Teaching Writing." College
Two Miami-Dade Community College instructors, working on an Exxon Grant, attempt to use microcomputers as a prescriptive agent in this article detailing the RSVP Feedback Program. Instructors evaluate a paper, based on its readability, label it at one of four levels of proficiency and identify on scantron cards specific errors warranting feedback. The computer then provides a detailed diagnostic letter to the student, giving examples of suggested remediation. RSVP was field tested at five community colleges in 1979 with the reported results that "teachers and students alike endorse the capacities of instruction and organization inherent in computer-based instructional systems such as RSVP." Unfortunately, that ringing endorsement is not accompanied by any genuine testing. We know that students usually enjoy their first brush with computer instruction (the novelty effect) and since the program was field tested over only one semester, the long-range efficacy of RSVP must be considered unproven.


Page perceives the problem of essay evaluation as "the problem of transforming a string of input symbols into some appropriate string of output symbols." This could translate into the sequence letters in a student essay (input string) resulting in a letter grade or comments (output string). The essay as essentially a physical object, with which the computer can appropriately deal, is then discussed in terms of both philosophical and practical ramifications for writing instruction. Essays are divided into considerations of content and style and a series of proxies (simulation of a human product) and trins (intrinsic variables that interest human judges). Based partly on the five principal traits believed important in essays (as developed by Paul Diederich for the Educational Testing Service), a program was developed and tested for validity against a panel of human judges ("32 highly qualified English teachers from the schools of Connecticut"). The results showed favorably on the computer's ability to simulate expert human judgment on the five principal traits of good student essays. Page looks forward to the day when computers can read ordinary handwriting, although he also paradoxically calls for "low-cost, noiseless, power-driven character printers" to emancipate primary school children from
"the inefficient and painful problems of handwriting."


In this paper presented to the 1980 meetings of the American Business Communications Association, Schwartz describes a study aimed at facilitating stylistic simplicity appropriate to audience in student writing. Two business and technical writing classes received identical reading assignments, classroom activities, and writing assignments. Students in one class, however, received feedback on their writing from a computerized readability formula program and then revised their work. The test group did score higher on the stylistic simplicity scale but this did not correlate with overall writing achievement on the assignments. The author concludes that her program would be most useful for students who usually write too complexly for their audience.


This essay is so quantitatively technical as to be virtually unreadable by persons not fully conversant with such measures as eigen values, six-factor orthogonal and oblique solutions, and rotated solution proxes. Slotnick shows why computer measurements work as approximations of the attributes of good writing that human judges look for. Via principal component analysis, a series of "trins" (extrinsic factors such as quality of ideas, spelling, diction, etc.) and specific qualities (subsets of factors relating to the trins) were identified and translated into characteristic proxes (aspects that the computer could count and thereby use to evaluate the trins). The result of these discussions, for most readers, will probably be a vague appreciation of how computers are able to approximate human graders of student essays. Readers who are more familiar with statistical measurements may find it interesting to evaluate the validity of Slotnick's tests.