School building and classroom accessibility are the first factors considered in a discussion of making provisions for mainstreamed physically handicapped students in vocational home economics programs. Legal mandates are cited, and ideas for adapting food labs and sewing labs for wheelchair students and students with visual impairments are noted. General curriculum adaptations and specific teaching approaches are noted for students with physical handicaps (amputation, arthritis, cerebral palsy, diabetes, epilepsy, muscular dystrophy, multiple sclerosis, spina bifida, and speech problems); hearing impairments; and visual impairments. The teacher's role in increasing the student's social acceptance is stressed.
Vocational Home Economics for the Mainstreamed Physically Handicapped Student: The Least Restrictive Environment

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# Table of Contents

I. Introduction .................................................. 1

II. The Law ....................................................... 2

   - Rehabilitation Act of 1973 ................................. 2
   - The Education for All Handicapped Children Act of 1975 .................. 2
   - Title II of the Education Amendments of 1976 .................. 4

III. Classroom Accessibility ........................................ 4

IV. Food Lab Accessibility ......................................... 5

   - Adaptations for the Wheelchair .............................. 5
   - Adaptations for the Visually Impaired ...................... 7

V. Sewing Lab Accessibility ....................................... 8

   - Adaptations for the Wheelchair .............................. 8
   - Adaptations for the Visually Impaired ...................... 9

VI. Needs of the Physically Handicapped ......................... 11

VII. Methods and Procedures for teaching the Physically Handicapped .... 11

   - Teaching Techniques ......................................... 15
   - Curriculum Adaptations ...................................... 15

VIII. Physical Handicaps .......................................... 16

   1. Crippled and Health Impaired .............................. 16
      - Amputation
      - Arthritis
      - Cerebral Palsy
      - Diabetes
      - Epilepsy
      - Muscular Dystrophy
      - Multiple Sclerosis
      - Spina Bifida
      - Speech Problems

   2. Hearing Impaired ............................................ 21

   3. Visually Impaired ........................................... 25

IX. Conclusions .................................................. 27

X. Appendix ..................................................... 33
INTRODUCTION

After the Individualized Education Program (IEP) is written, an appropriate placement must be found that reflects the student's prescribed program. This placement must be in the "least restrictive environment", which generally means an educational setting that will provide optimum learning. A student could be placed in a public school and follow regular schedules with the help of special supportive services such as a tutor, an interpreter (someone who translates speech into sign language) and a note taker. Or a student could be partially mainstreamed by participating in some regular classes. If a student is placed in a public high school, home economics will probably be among the first classes to be considered appropriate. Traditionally, home economics teachers have provided individualized learning for years. Home Economics also offers these students many basic living skills, pre-vocational and vocational skills.
THE LAW

To adequately, provide appropriate educational services for physically handicapped students, the first and foremost criterion to be met is complete and unrestricted physical access to the school building and classroom. There are three significant laws dealing directly with this.

Rehabilitation Act of 1973 P.L. 90-480

This law specifically provides that any institution built by or receiving federal funds will make all reasonable efforts to eliminate architectural barriers and promote unrestricted accessibility. This includes physically handicapped students in public education facilities. Compliance to this law is by June, 1980¹ (Section 502).

The Education for All Handicapped Children Act of 1975 P.L. 94-142

The law requires that each state is to establish procedures to assure all handicapped children a free appropriate education in "least restrictive environment." "All handicapped children" includes those who are in public or private institutions or other core facilities as well as those attending public or private schools. To the maximum extent appropriate, children with handicaps are to be educated with children who are handicapped. Handicapped children who can learn in "regular" classrooms with the use
of supplementary aids and services should attend these classes. If the nature or severity of the handicap is that the child cannot achieve satisfactory in a regular class, then special classes, separate schooling, or some other educational environment should be selected (Section 612 (5) (B).

The child should be placed in the school he/she would otherwise attend if he/she were not handicapped. If a handicapped child is so disruptive in a regular classroom that the education of other students is significantly impaired, the needs of the handicapped child cannot be met in that environment. Therefore, regular classroom placement would not be appropriate to his/her needs (Section 121a 522 (c) (d).

P.L. 94-142 does provide a safe guard that steps must be taken to insure that the "least restrictive placement" does not result in a harmful effect on the student or reduce the quality of his education program (refer to Appendix A).

Mainstreaming is a word commonly associated with this law, but, yet the word mainstreaming is never used in the federal laws. For many people the term mainstreaming implies regular classroom placement for all children with handicaps. This is a mistaken notion. Participation in the regular education program, to the maximum extent appropriate, depends on the unique needs of each child and should be
specified in his/her I.E.P. (Individualized Education Program). The I.E.P. is a list of the skills that a student needs to master in order to function in a least restrictive environment.2

Title II of the Education Amendments of 1976 P.L. 94-482
The intent of the law is to insure that all persons will have ready access to training which is high quality, which is realistic for gainful employment, and which is suited to their needs, interest, and ability to benefit from training. There are several services for handicapped students that are available under this new law. They include (1) modification of the programs to enable the handicapped to develop skills which would lead to employment; (2) vocational instruction presented in a way that the handicapped person could benefit from them; (3) if necessary, extended time to learn a new skill; (4) supportive service such as the use of tape recorders, tutors, readers, note takers, and guidance counselors; (5) job placement and follow-up services.

CLASSROOM ACCESSIBILITY

Assuming that the school building has been made accessible for the physically handicapped student to enter and function in adequately; we will look at the classroom. Problems commonly found in the classroom are:

(1) no handrails to facilitate independence and freedom of movement.
(2) worktables or desks that are too low for wheelchairs or uncomfortable for students with leg braces.
aisles that are too narrow to accommodate crutches, canes, and wheelchairs.

(4) classroom door too heavy or too narrow.

(5) no cot or mattress for needed rest periods.

(6) chalkboard placement that prohibits handicapped students from doing boardwork.

According to Honna and Graff, non-handicapped students should be informed openly and accurately of disabled peers particular mobility problems and advised as how to assist. Integration of the physically handicapped into regular class seating arrangement is encouraged unless physical needs call for preferential seating at front or back of the class.

Basic environmental adaptation goals are functional mobility, operation flexibility and production cooperability. This can be done through the use of aides and supportive services.

**FOOD LABS**

Adaptations for the Wheelchair

There are two basic ways to give handicapped students access to the foods laboratory experiences—remodeling one kitchen unit or providing a "temporary" kitchen. **Forecast for Home Economics** gives the following ideas for remodeling:

1. lower counter tops and eliminate most base cabinets, thus permitting a wheelchair to roll up and under the counter. Cabinets should have easy grip handles.
2. the sink should have a 6-inch shallow, single-control faucet and the rear drain built in to allow for a straight on approach.
3. food waste disposer, hood fan and light switches controlled at the front of counters.
4. a fluorescent light fixture for the major portion of the area, with small lamps tucked under the cabinets for additional lighting.
5. have much of the shelves open and low enough so they can be easily reached from a sitting position.
6. major appliances are standard with the handicapped person in mind. A self-cleaning oven with a lowered level and easy access to controls.
7. easier clean-ups with a food waste disposer and dishwasher.
8. side by side refrigerator allows easy entry into either the freezer or fresh food selection.

One may obtain funds for making the classroom more accessible to the handicapped student. Addresses are listed in Appendix F (resources and addresses).

A remodeled kitchen may not be feasible for the particular school district in which one may find herself, so **Forecast for Home Economics** offers an alternative of the "temporary" kitchen. These ideas can be created with minimum expense.

1. Tables, 30 to 32 inches high and 16 to 18 inches deep, and be used in place of counters. Portable appliances can be substituted for major ones. A toaster oven, electric skillet or microwave oven can take the place of the standard range or oven. A two-burner hot plate can substitute regular surface units. If a regular range must be used, an over-the-counter mirror can be installed so the student can see the contents of what's in the pan.

2. Doors can be taken off the sink cabinet to give leg space. The existing sink will probably be too deep for the person in the wheelchair to reach into. To remedy this, use two dish pans, one inverted with the other on top face up. A single-handled faucet can replace the two-handled faucet. If the sink area can't be altered, a large water container, with a dripless spout, can be placed on a shelf or a table to serve as a water supply. One or two dish pans placed on a table near the water supply can serve as the sink.

3. Shelves can be attached to a nearby wall for lowered storage of packaged goods and dinnerware. Rolling carts can also be used. Pots and utensils can be hung on straight, unslanted pegs mounted on a wall.

4. Use long barbecue tongs to reach items that are too high.

5. Roll-out shelf trays and lazy susans can be used in refrigerators and kitchen cabinets.
ADAPTATIONS FOR THE VISUALLY IMPAIRED

The kitchen should be organized to promote both safety and ease while working. Let the student come in before beginning classes to become oriented to the food lab. A flat-edged rubber mat should be on the floor in front of the sink to help prevent skidding should water splash on the floor. Electric range is preferable to a gas range for safety reasons. Timing is extremely important when cooking, so raised numbers or dots should be used. Elmer's glue works well for this applied in small dots.

Magnifying glass and/or enlarged type can aid the visually impaired in reading recipes. Braille form or enlarged type can aid the visually impaired in reading recipes. Braille form or tape recorder recipes can be used for the blind (refer to Appendix F).

Measuring can be done by placing one finger inside and the other outside the measuring cup, which has a raised rim at every quarter and third of a cup. This allows one to feel when enough liquid has been poured into it. For measuring non-liquid items, raised markings on measuring cups and spoons can be used and leveled with a knife.

For safety, a serrated knife should be used for cutting. This knife gives one more control than a smooth blade. Brightly colored paper or sandpaper should be used to mark off positions on temperature and speed controls on appliances.
SEWING LAB

Adaptations for the Wheelchair

Sewing is a difficult activity to perform with loss of fine dexterity and opposition in the fingers and thumbs. Often those confined to wheelchairs are also uncoordinated or may have one or more amputations. For these students grasping the needle to pull it through fabric is fatiguing; cutting with scissors requires strong opposition and places stress on the joints and may be impossible if there are joint deformities (possibly from arthritis). Two hands are usually needed to sew; one to hold the needle and one with which to thread the needle. When there is a loss of function in one hand, one can use a cork to stabilize the large-eyed needle while threading. When finger opposition is weak, pulling a needle through fabric may be impossible. Sometimes a thimble will help in pushing. At other times, a substitute for hand sewing should be considered. Latex-based mending liquids or iron-on tape to mend rips and put on hems.

A sewing machine may be used to save time and energy. In most cases, a sewing machine can be used by a physically handicapped person without special adaptations. The controller on a portable machine is designed to be controlled with the foot, but can be placed on the table and activated with the hand, wrist, elbow or upper arm if necessary. Two commercial aids available to help the physically handicapped student are:
(1) a commercially available folding card table with drop-in section, and

(2) a swing-up shelf on a spring that is used for typewriters, which locks in place. Notions may be stored on a pegboard near the sewing area. Ironing equipment should be handy to the sewing area. If an adjustable table is not available on which to place a sewing machine, an adjustable ironing board works well.

When handling fabric on table and one hand is non-functional, a brick covered with thick fabric may be placed on the material to anchor it. A strap placed over the top of the brick allows the person to lift the brick with elbow flexors and forearms when grasp is weak. A standard clipboard can be used to hold some items steady while sewing. A magnet can be used to pick up pins and needles when finger dexterity is limited.

Adaptations for the Visually Impaired

Sewing equipment should be kept in a specific place in an orderly way. One piece of equipment, the sewing gauge, has indentations every inch and a smaller indentation can be added every 1/2 inch. Indentations can be cut with a hand saw about one-eighth of an inch deep. Rough edges can be sanded down. The five-eighth's inch marking on the sewing machine can be marked with masking tape or any thick tape the student can feel. Temperature settings on an iron can be marked with liquid solder. Tape measures can be marked every 12 inches with staples, one staple at the 12-inch mark, two at the 24-inch mark, and so on. Fabric-coated tape measures can be
machine stitched every quarter-inch mark, with heavier stitching placed every inch. Machine stitched tape measures are safer and more accurate.

Threading a hand sewing needle can present unique manipulative problems to the visually handicapped student. The use of a large cork bottle stopper to anchor the needle while threading a large-eye needle seems to work best. A magnet works well to help pick up pins; the magnetic pin holder spills easily. The teacher must try not to insult students especially those with partial sight by marking equipment unnecessarily.

To teach hand sewing skills in a beginning sewing class, a teacher could use black buttonhole twist on white paper to illustrate stitches. Color contrast is helpful to the partially sighted and the blind can identify the stitches by touch more easily on paper than on fabric.

According to a study done at Houston State University, visually handicapped students preferred the whip-stitch to the slip-stitch, because it requires less time to execute and can be more easily felt and visualized by the visually-impaired student.\(^9\)

To adapt commercialized patterns to the needs of visually impaired students, teachers can cut out patterns on tag boards. Masking tape placed on each end of grain-line arrow to help students identify it. Dots of tape or safety pins placed
on each tag board pattern piece will help students differentiate pattern pieces, such as front, back, facings, and sleeves. This idea can also be used to indicate the pattern's right and wrong sides. Visually impaired students often have little or no experience in manipulating scissors and cutting shaped pieces. Teachers can instruct them to keep the fabric flat so they can cut accurately and can easily feel the outline of the heavy tag board against the fabric as where to cut.¹⁰

NEEDS OF THE PHYSICALLY HANDICAPPED

Each handicapped student has his own personality and needs; certain needs are basic to all individuals; the need for:

---belonging
---achievement and recognition
---economic security
---love and affection
---self-respect and a willingness to share experience with others
---guiding purposes to direct one's life

The need to be:

---relatively free from fear
---relatively free from feeling of guilt¹¹

If these needs are not met, the handicapped person is likely to experience:
1. greater frustration than the unhandicapped experience
2. absence of many usual play and social activities
3. slowness in schoolwork owing concern about the handicap
4. insecurity about the vocational future
5. withdrawal as an escape for meeting difficult situations
6. heightening and exaggeration of the problem of adolescence¹²

METHODS AND PROCEDURES FOR TEACHING THE PHYSICALLY HANDICAPPED

Many principles, procedures and techniques of teaching
which were first created or used for the instruction of exceptional children, are just as effective for regular class pupils. Actually, many regular home economics teachers have been using approaches very similar to special education teachers and with good results. Home economics teachers have had individualized curriculum for a long time.

General guidelines offered by the Council on the Exceptional Child can be used for all handicapped students:

1. begin a little below where the child is
2. use direct experience
3. help the child to set the pace of learning
4. employ principles of reinforcement systematically
5. give children chances for leadership
6. encourage constructive thinking
7. use peer instruction
8. use pupil feedback to check your work
9. move from the familiar to the unfamiliar
10. model those things you can
11. use reviews meaningfully
12. help pupils learn how they learn
13. limit extraneous stimuli
14. be sure pupils understand what is to be done
15. be consistent
16. use all teaching for diagnostic assessment; be observant of approach to task, wavering of attention and blocks to progress.

Redick and Lozzell give a basic procedure to follow to teaching the physically handicapped student:

**Identity** - Know who those students are prior to meeting the class for the first time.

**Conference** - Conferences can establish rapport and give the home economics teacher pertinent data. This will enable the teacher to learn more about the student's functional ability and previous experience in home economics.
Tour- Before the class has met, allow the handicapped student to tour the home economics facilities to determine accessibility. This is of particular importance for the physically handicapped student in a wheelchair and the blind student.

Learning Handicapping conditions- Become familiar with the student's handicapping condition through reading and conferences with family and school personnel; especially the specialist for the student's handicap (may be the special education teacher). Most important information includes: how the handicapping condition affects the student and the degree of functional ability. Keep the Buckley Amendment in mind when finding this information (refer to Appendix C). 14

Ideas gathered from observation and interviews give many ideas on how to include the physically handicapped student in the least restrictive environment. If the handicapped student is new in the school, it may help the non-handicapped students to discuss the handicapping condition in class. This activity is particularly recommended if it is found that the handicapped student is willing to discuss the handicapping condition. One needs to keep in mind whether this is emphasizing the student's disability. Also, how will this age group react or this particular class react to this activity?

Accept and respect the handicapped as a person in his/her own right, a unique individual, as every other student in the class. Avoid over protection, yet be conscious of individual
needs. Many physically handicapped can participate in home economics activities, but some tasks may require adaptation. Ask the student for suggestions. Having lived with the handicap the student may have previously made adjustments for similar situations. If the teacher can provide a motivational learning environment, the student can usually find a way to do the task. Sometimes it will be easier to do a task for a handicapped student rather than teaching the student to do the task themselves or permitting the time needed. The teacher needs to remember the student after he/she leaves the class as to whether he/she is learning basic living skills, pre-vocational or occupational skills. It is important to learn so that after he/she is out of school, he/she will be in the least restrictive environment and because of skills learned.

Use resources and materials designed for use with the physically handicapped student in the "mainstreamed" classroom. This will save the teacher time, as well as the student. Experiment with various models of classroom organization that will free the teacher to serve those who require help. Also, it is especially important to be aware and seek help from qualified consultants (resource list in Appendix f.)
TEACHING TECHNIQUES

"The teacher's most important job is to create an environment conducive to emotional and intellectual growth for each child in the classroom." Several instructional techniques can be used to accomplish this such as: programmed instruction, learning stations, interest centers, media corners, contracts and games. One technique emphasized by several authors is peer teaching or the buddy system. "Two are better than one... for if they fall, the one will lift up his fellow; but woe to him that is alone when he falleth, for he hath not another to help him up." (Ecclesiastes 4:9-10) Handicapped students should be placed in a group where they have a buddy who helps them. One should not let several handicapped students work in the same group--this counteracts the principle of mainstreaming. The buddy should be a student who would enjoy this relationship, possibly a student aide. The buddy should be a source of encouragement and basic knowledge of subject matter. The handicapped students should be assigned to perform all of the group tasks: "they learn by doing."

CURRICULUM ADAPTATIONS

One should ask the following questions about the curriculum; does it:

--describe the terminal behavior
--measure the student's entry level
--require frequent student response
--clear criteria for correct response
--check points and prescriptions
--accomodate individual difference
PHYSICAL HANDICAPS

Crippled and Health Impaired

These students have limited abilities in self-mobility, sitting in a classroom and using materials for learning because of muscular and neuro-muscular handicaps. Some students have limited abilities due to skeletal deformities. Other students have limited strength, vitality, and alertness for schoolwork due to chronic health problems.

Amputation

Modification here will depend on student's age, site of amputation, whether the child has an artificial limb and the child's adjustment to the disability. The stability of the student with one hand is a main problem. Two pieces of equipment most often used for this person are the spike board (cutting board with suction cups on the bottom and rust proof nails sticking up) and a rubber placement to prevent things from moving around. A common "octopus" is also used frequently to stabilize objects. Something like cracking and/or separating eggs can be difficult with one hand. An egg separator works well for this. To open containers, one can place container between knees, or between hips and counter, or the mouth may be used in soft-packaged goods. A curved knife is a great aide in cutting and chopping, but a blender often can also do this job.
Arthritis

Modifications for this student will depend on student's age, severity of condition, independent travel ability and range of motion in the arms, hands and fingers. If joints of the upper extremities are severely involved, may need writing aids, adapted paper or special pencils. Small equipment will need to be adapted if hand joints are greatly affected.

Some research evidence shows that emotional stress is related to attacks of arthritis. The teacher should be aware of the student's emotional climate as well as changes in vision, as this is a problem associated with rheumatoid arthritis. Faulty posture habits should also be avoided.

Cerebral Palsy

The degree of involvement and severity of the condition may vary considerably. Classroom modifications will vary according to the need of the child. Some will need minor modifications; while others will need more. The teacher will need to work closely with an occupational therapist to have a basic understanding of treatment procedures so that she may reinforce desirable movements and postural habits.

The instruction may not need to be varied but modification or adaptation of materials and equipment may need to be done, so that the student may participate more fully in the classroom. Use of pencil holders and adapted typewriters
for written work should be used when fine motor coordination is difficult. Weights (sand bags) on one hand can aid in the more controlled movement of another hand. The teacher's innovation and use of resources available will greatly help in this diversified handicap (refer to Appendix F.)

It is important to allow the child to carry out his own task. It may take him considerably longer, but he must be able to complete it independently.

Diabetes

In the case of diabetes, the teacher needs to be able to identify the difference between insulin reaction and a diabetic coma. The diabetic student needs insulin injections, which may need to be administered during the day. Attention should be given to student's diet, toileting needs and activity level. If a student has an insulin reaction, contact medical help immediately. Symptoms common to an insulin reaction are: not being able to concentrate, hungry, dizziness, perspire excessively and trembling. When the student is showing symptoms of insulin reaction, often giving them a sugar cube, or pop or raisins or fruit juice with sugar, will aid the disappearance of these symptoms. The diabetic coma, however, is a failure to take insulin, an illness or neglect of proper diet. If there is too much sugar in the blood stream, the student must have an injection as soon as possible. Symptoms of a diabetic coma attack; first, nausea,
then frequent urination, flushed face, labored breathing, and vomiting. The teacher should keep the child warm, resting and call parents and/or nurse. The needs to be informed of student's schedule and diet. This student should need very little adaptation. The other students could learn most from this student in a nutrition class.

Epilepsy

This child's achievement level may be lowered because of missed classes and possibly being mis-labeled a behavior problem. If the seizures have been controlled for several years, there should be no real problems. If it has been recently diagnosed there may be more problems with seizures until they can be controlled. If a child does have a seizure in class, there is much the teacher can do to make it the least restrictive environment. Nothing can be done for the petit mal and psychomotor seizures except explain behavior to other students. If a student has a grand mal (refer to Appendix F) the teacher should:

1. Keep calm—ease the child to the floor and loosen his/her collar. The seizure cannot be stopped, but needs to run its course.
2. Remove sharp or hot objects which may injure the child but not interfere with the movements.
3. Do not force the mouth open or place anything between the teeth.
4. Turn the child's head to one side for release of saliva—place a soft object under the head.
5. Allow the child to rest upon regaining consciousness if he/she wishes—do not remove the child from class unless it has been medically advised.
6. If seizures persist beyond a few minutes, call school nurse for instructions and notify parents. This will rarely happen, but should be treated immediately.
The teacher needs to assure students that their classmate is not in danger, will not be hurt and should be okay in a matter of minutes. This may be a good time to brief the class on their classmate's illness. "The more understanding that is promoted, the more acceptable the other students will display." This child leads a normal life and the teacher should not shelter or discriminate restriction of activities.

Muscular Dystrophy

This disease is often slow, progressive and fatal. Every possible effort should be made to maintain the student in the regular classroom as long as possible. The most important role of the teacher is to stimulate these students academically, recreationally and socially as much as possible without making exceptions and by expecting the same of these students as others. The stage in which the disease is will determine the amount of adaptation that will be necessary.

Multiple Sclerosis

Often with this disease as well as muscular dystrophy and cerebral palsy, the student has weaknesses of the upper extremities and/or incoordination. Judith Klinger gives some suggestions for these individuals. When grasping is a problem, pouring or sprinkling of food is easier if the container is held in the palm of the hand and supported by the weight of the thumb. Occasionally one's teeth can be used to open soft packages or hold a spatula for scrapping
a bowl. When working with a long-handled utensil, interwoven between one's fingers and supported by one's thumb, often lets one turn foods without any assistance. When incoordination is a problem, unbreakable dishes work best in the kitchen. A sponge works well under vegetables when cutting to stabilize the vegetables. A one-blad chopper is a sage and functional "knife" good for chopping onions, green peppers and walnuts. It's very important that this student slides items, not lifts them; use wheels, don't carry.

Spina Bifida

If this child has good use of his upper body, arms, and hands, educational modifications are minimal providing the school and classroom are accessible to his wheelchair.

Speech Problems

Speech problems can be categorized as follows: (1) articulation problems; (2) language problems; (3) voice problems; (4) stuttering or other noninfluencey problems. When the teacher suspects a problem of this nature, she should refer it to the speech specialist for testing. If there is a known problem, the teacher should be informed to reinforce correct speech patterns. There are a great deal of words in the home economics vocabulary that can be used for this.

HEARING IMPAIRED

According to Dr. Garretsen, "Deafness involves much more than the inability to hear. It is difficult to gauge the
full severity of the handicap. Hearing impairment separates
the child...from people... Deaf children may well be
isolated in the mainstream, physically present, but
intellectually absent." 20

Since these students are unable to hear, hearing-impaired
students do not acquire the English language readily. Even
after years in school, by high school their reading level
may only be a fourth or fifth grade level. Home economics
textbooks written at this level of reading are usually
intended for the mentally retarded with concepts being
repeated. Hearing-impaired students fall within normal
intelligence range and become frustrated with the endless
repetition of information.

To provide appropriate learning experiences, the teacher
could change the number of paper and pencil learning
activities that require the student to read and write to
acquire information. Instead teachers can rely on
demonstrations, captioned non-verbal 8 mm filmloops,
captioned 16 mm educational films (refer to appendix) and
educational games that teach concepts using a minimum of
language.

When lecture-discussion is necessary, the room can be
arranged so the hearing-impaired student can see those who
are talking and use lip reading. An interpreter could be
used to ensure the student is aware of all communication
occurring in the room.
When note-taking is essential, a note taker should be provided, or by having one of the students place a piece of carbon paper and additional paper under his sheet of paper while taking notes. Lessons can be illustrated with overhead projectors. If the student knows all the vocabulary words used and if the teacher uses simple sentences, overhead projectors can also be used to reinforce lessons.

The school speech therapist and media specialist can be helpful in determining appropriate teaching strategies. Phyllis Gibson, a hearing-impaired specialist, gives the regular classroom teacher suggestions on teaching strategies. The teacher needs to treat the hearing-impaired the same as other students his age, intelligence, etc., with the only limitation being that of his handicap to modify his goal. Each group of hearing-impaired students are different, just like each of your students are different. The teacher needs to make sure the student is attending (not just "listening") when the class begins. However, one should not expect continuous attention. Don't expect the hearing-impaired child to understand at all times no matter how bright he/she is. Use of many visual aids will increase the number of "sensory associations" the student can store. Writing on the chalkboard while no speaking, then turn around and speak to the class. When the teacher is speaking, she should articulate clearly and speak in a moderate speed. Have the student sit in place where he/she can see the teacher's face and his/her
peer's faces. When new vocabulary is introduced, the teacher may send the list home with the student to have his family help or give the list to the resource specialist.

Many children with a hearing impairment use hearing aids. These aids can help the child's hearing and can help him understand better, but no hearing aid will permit a child to hear exactly as he would hear if he had normal hearing. The teacher should speak in a natural voice not shout, only certain types of cases will raising the voice have any effect. One can encourage the child to be unashamed if he does not understand and to state his confusion or apprehension immediately. Often, after a head cold, hearing level will be lessened beyond the already permanent loss.

Other suggestions offered by several sources include:
- try to limit the amount of external noise which can affect the learning situation.
- provide the student with tapes and headphones to block out external noises.
- assignments should be written.
- whenever possible indicate the location of related materials in texts or workbooks.
- a simpler outline on the chalkboard will aid the student in following the lesson.

One question not dealt with as of yet--How does the teacher communicate with the hearing impaired or deaf?

1. To get the child's attention simply call his name. There's no need to touch him unless the student is deaf. If the teacher expects the student to hear, he will become conditioned not to hear.
2. Give the child time to respond, if he has trouble maintaining his attention the teacher can guide him to the correct answer and then repeat at the word or phrase again.
3. Keep within a fairly close range so students may hear easier; it's more difficult if the speaker is more than five feet from the hearing aid.
4. Use normal speech patterns. The child learns to understand communication better if it occurs in sentences.
5. Encourage speech development by using short, clear phrases, speak at a moderate pace and don't gesture too much.
6. Verbalize often and give frequent repetition.
7. "Clue the child in" on what is going on when he hasn't been in class.22

**Visually-Impaired**

It has been found by some researchers that these students have a moderate lag in academic achievement. They contribute this to a number of reasons: (1) slower concept development associated with impaired vision; (2) slower reading rates; and (3) inappropriate instruction procedures.

Adaptations in the classroom include: sitting close to the chalkboard and teacher; avoiding glare created by having student work facing a window; keep doors either open or closed (ajarred doors can be a potential safety hazard in mobility); provide adequate storage of special equipment such as braille or large-print books and adequate desk space for using these books.
Suggestion for working with the visually-impaired student are:

- plan activities with the visually-impaired child, not for the child.
- expect the student to meet reasonable standards of performance and behavior as one would the rest of the class.
- don't fuss over accomplishments as if "remarkable" or "wonderful."
- don't avoid such words as see, look in the blind student's presence.
- don't feel that all his/her difficulties and needs are due to visual loss.
- don't pity the child and feel that special arrangements must be made for everything.

Teaching aids are often available from state and local agencies dealing with the visually impaired. These services include: loan of a brailler, special writing paper and "talking books." These special books are recorded especially for use by blind and other physically handicapped persons. These books and machines are loaned free of charge through one's state and regional library for the blind and physically handicapped.

When giving directions to the visually-impaired student, be an active participant in a sewing demonstration. For example, while the teacher describes and demonstrates how to thread a sewing machine, a visually-impaired student might actually be threading one. If the student is unwilling to do this, the teacher may need to take time for two separate demonstrations. Researchers believe that demonstrations and instructions appropriate for blind students are also appropriate for sighted students.
OPINIONS AND ADVISE OF RESEARCHERS

Mary Anne Stowell's research in Portland Public Schools, Oregon; she found the following to be the teacher's major barriers to successful implementation of mainstreaming:

1. the lack of support personnel
2. insufficient funds for purchasing needed equipment and materials
3. lack of resources in smaller school systems
4. lack of teacher time
5. the restrictiveness of federal and state program guidelines on local flexibility in using funds
6. lack of awareness among occupational and vocational education teachers of employment
7. inadequate teacher preparation
8. lack of accessible facilities

Martha Carrier feels that physically handicapped children should be placed in a special school only under certain conditions such as: (1) if he needs special equipment which is not available in a regular school; (2) if the needs of the child demand too much of the teacher's time (especially multiple-handicapped children); (3) if therapy is required; (4) if there is a severe emotional problem.

CONCLUSIONS

The least restrictive environment, is it possible in Vocational Home Economics? From my readings, observation and interviews, I feel it is, but my main concern is the student's peer relationships during adolescence. A study done in 1978 showed that a physical handicap was a disliked character of an adolescent peer. Often these students need to learn social skills so they may be more socially acceptable. There are several primary goals the teacher can try to
develop to make his social acceptance less of a barrier.

These attributes include:

1. understanding and accepting the child and have him accept himself.
2. to feel he is a worthwhile individual.
3. to have a sense of responsibility.
4. to view his assets and limitations realistically
5. to strive for attainable goals
6. to find a place for himself among his peers

Although courts have ruled that inadequate funding is no excuse for inadequate facilities, school settings should be as close to "normal" as possible. After all isn't a part of education learning about one's environment and oneself - the physically handicapped are part of the student's environment and society. No educational plan for a disabled child can be effective if it takes place in an environment where the student is separated from other children by an invisible barrier of curiosity and fear. The right to learn in the "least restrictive environment" means more than simply the right to a public education; it implies the right to participate in ordinary school life, to have friends and activities as nearly typical as possible. An East Providence Rhode Island school system developed a systematic program to ease the handicapped student into the "mainstream"; with no program will the student find the school an unfriendly and lonely place or worse, a place to be teased by his peers. If the school is better prepared to meet these physically handicapped students, it will then be a "least restrictive environment."
FOOTNOTES


5. Ibid. p. 131.


10. Ibid.


12. Ibid.


16. Ibid. p. 119.


19. Ibid.


Corn, Anne Lesley and Iris Martinez. "When you have a Visually Handicapped Child in your Classroom: Suggestions for Teachers." Pamphlet from American Foundation for the Blind.


Dewy, Margaret. Teaching Home Economics to Special Students. (J. Weston Walch, Publisher. O'rio). 1976.


Interview with Mrs. M. Carrier, Allegheny County Schools, Cumberland Hills School. 1979.
Interview with Mr. Robert Marx, Director of Campus Planning for Indiana University of Pennsylvania. September 23, 1979.


Nelson, Hilding E. Glass Organization to Teach the Physically Handicapped Mt. San Jacinto College (Filmstrip and cassette)


Readings in Special Education. (Connecticut: Special Learning Corp.) 1978.


Supplementary materials from PAVA workshop conference on special education in Harrisburgh, Pennsylvania November 7 and 8, 1979


SOURCES OF APPENDIX A, B, and D.

Supplementary material from PAVA workshop conference on special needs in Harrisburgh, Pennsylvania. November 7 and 8, 1979.
CASCADE OF EDUCATION SERVICES

Children in regular classes, including those "handicapped" able to get along with regular class accommodations with or without medical or counseling supportive therapies

"OUT-PATIENT" PROGRAMS

Regular class attendance plus supplementary instructional services

(Assignment of pupils governed by the school system)

Part-time special class

Full-time special class

Special stations

Homebound

Instruction in hospital or domiciled settings

"Noneducational" service (medical and welfare care and supervision)

"IN-PATIENT" PROGRAMS

(Assignment of children to facilities governed by health or welfare agencies)

The cascade system of special education service. The tapered design indicates the considerable difference in the numbers involved at the different levels and calls attention to the fact that the system serves as a diagnostic filter. The most specialized facilities are likely to be needed by the fewest children on a long term basis. This organizational model can be applied to development of special education services for all types of disability.
MANUAL ALPHABET

Invented by Abbe de L'Epee of Paris, in the 17th Century. Used by the deaf throughout the world. Easy to learn.
The teacher should be informed of any physical or emotional problem that might be hazardous to the student or its' peers in a lab setting. Only information needed to select appropriate programs and services are to be given out.
APPENDIX E

Definitions

Arthritis- literally means, inflammation of a joint. It has been classified as follows: (1) arthritis caused by infection; (2) arthritis resulting from rheumatic fever; (3) rheumatoid arthritis; (4) degenerative arthritis; (5) arthritis due to joint injuries; and (6) arthritis originating from the nervous system. This disease mainly affects skeletal joints and often is accompanied by extreme pain. Medication is usually required.

Cerebral Palsy- Means that the part of the brain that controls body muscles has been damaged. Some children show early signs of disability, other diagnosis requires piecing together many subtle and fragmented clues. Often it is present from birth, causes may happen in early infancy, in most cases it occurs before birth or during birth. Symptoms vary greatly- some slight development lag, awkwardness and uncoordination, slight muscle weakness. In other cases almost no motor development will occur and other handicaps such as epilepsy, blindness, and mental retardation, may also be present. This disease can cause physical impairment of one limb (monoplegia), two limbs (paraplegia), three limbs (triplegia), or all four limbs (quadriplegia). There are three main types-(1) spastic- the individual moves stiffly and with difficulty; (2) athetoid- the individual has a voluntary and uncontrolled movements (3) ataxia- the sense of balance and depth perception are disturbed.

Diabetes mellitus- is a disease in which the body is unable to manage its food intake properly. The body is unable to burn up its intake of sugars, starches, and other carbohydrates because
one element necessary to that normal combustion is missing in adequate amounts. This element is insulin.

Epilepsy- is a condition characterized by sudden disturbances of brain function, resulting in temporary impairment of consciousness. The attacks range from major to minor reactions (from grand mal to petit mal). Under adequate medical supervision, a patient may remain completely free from seizures. Types of epilepsy include:

1. Grand mal- child becomes tense and slumps to the floor unconscious. Muscle jerking, sporadic breathing, loss of bladder control, and saliva emission proceeds for several minutes until consciousness is regained-usually the most alarming type.

2. Petit mal- brief interruption of consciousness often characterized by an appearance of daydreaming with twitching of the eyelids or other facial muscular movement. The child will have no awareness of this seizure.

3. Psychomotor or temporal lobe seizure- this type of seizure has the most complex behavior pattern. It may include constant chewing or lip smacking, purposeless walking or repetitive hand and arm minute to several hours.

Hearing Impaired- there are two groups- the deaf and the hard of hearing. Persons are considered deaf when their sense of hearing is non-functional for ordinary purposes. Deaf are classified at the congenitally deaf- those who are born deaf; or the adventitiously deaf- those who were born with normal hearing but whose hearing has become nonfunctional, due to illness or accident.

Muscular Dystrophy- is a progressive disease whose principle and tragic characteristic is a wasting away of the voluntary muscles. The child usually doesn't reach the age of 20.

Multiple Sclerosis- (Commonly called MS) is a chronic, crippling disease of the central nervous system, usually attacking adults.
Nerve messages from the brain to the muscles and organs are "short-circuited". Hence, normal nervous system control is lost over many different parts of the body, notably the muscles of locomotion. Symptoms of the disease vary greatly, among the most common signs are staggered walk, blurred or double vision, tremors, paralysis, numbness, slurred speech, bowel and bladder difficulties.

Speech problems are considered defective when its deviation from average speech draws attention to itself. Major categories of speech defects are: articulatory disorders, vocal disorders, stuttering, delayed speech and speech disorder associated with cleft palate, hearing impaired or cerebral palsy.

Spina Bifida— the congenital condition in which the vertebrae of the lower spine have failed to develop and close completely during the intra-uterine life.

Scoliosis—can result from a birth defect or spinal injury, but 90 percent of all cases are of unknown cause. The latter type runs in families, affecting girls seven times more often than boys. Most commonly, it develops during the growth spurt between 10 and 15. If detected early, the problem can be stopped and deformity prevented with early detection.

Visual Impairment—there are two groups, the blind and the partially sighted. A blind student has so little vision that the senses of touch and hearing must be subsituted for sight when teaching. The partially sighted are able to utilize some remaining vision for learning, but special materials, instructional procedures, and conditions are necessary to accommodate the student.
APPENDIX F

Association for the Aid of Crippled Children
345 East 46th Street
New York, NY 10017

A foundation for supporting work in the field of prevention and
treatment of handicaps of children

The Child Study Association of America
9 East 89th Street
New York, NY 10028

The Association of Educators of Homebound and Hospitalized
Children
The Council for Exceptional Children
Mid-City Station
Post Office Box 6034
Washington, D.C. 20005

An association promoting professional relationships among educators

Bureau of Education for the Handicapped
Office of Education
400 Maryland Avenue, SW
Washington, D.C. 20202

Grants available for vocational home economics programs

Council on exceptional Children
1920 Association Drive
Reston, VA 22091

Provides research in the form of ERIC clearing house

Closer Look
1828 L. Street, NW
Washington, D.C. 20036

National Center on Education Media and Materials for the Handi-
capped
Ohio State University
220 West Twelfth Avenue
Columbus, OH 43210

Much research is being done there, a very valuable resource in
vocational education

Sharon S. Redick- Teachers Guides

The Physically Handicapped Student in the Regular Home Economics
Classroom:
--A guide for teaching housing and home care
--A guide for teaching nutrition and foods
--A guide for teaching grooming and clothing
The Learning Skills Series contains 4 workbooks junior high level-prevocational skills are emphasized related to newspaper ads, recipes, and thermometers.

American Diabetes Association
250 West 57th Street
New York, NY 10019

American Heart Association
44 East 23rd Street
New York, NY 10010

American Occupational Therapy Association
250 West 57th Street
New York, NY 10019

An open membership organization to promote occupational therapy for handicapped children.

The Epilepsy Foundation of America
1828 L. St. NW
Washington, DC 20036

"School Alert"—presentation for classroom teachers and others in recognizing epilepsy and techniques of management in the school classroom. This organization provides educational materials, literature, posters and other aids that can be adapted for a variety of age levels and situations.

National Epilepsy League, Inc.
203 North Wabash Avenue
Chicago, IL 60601

A voluntary agency providing services for epileptics.

Muscular Dystrophy Association of America, Inc.
1790 Broadway
New York, NY 10019

A voluntary agency dedicated to finding the cure of muscular dystrophy and related neuromuscular diseases.

The National Institute of Health
Bethesda, MD 20014

A governmental agency supporting research and training.

The National Easter Seal Society for Crippled Children and Adults
2023 West Ogden Avenue
Chicago, IL 60612

A voluntary organization providing services for crippled children and adults.
United Cerebral Palsy Association, Inc.
321 West 44th Street
New York, NY 10036

An open membership organization promoting work in cerebral palsy

The United Epilepsy Association
111 West 57th Street
New York, NY 10019

A voluntary health agency encouraging work in the area of epilepsy

American Association of Instructors of the Blind
2363 South Spring Avenue
St. Louis, Missouri 63110

An open organization working for the improved education of the visually handicapped

American Foundation for the Blind, Inc.
15 West 16th Street
New York, NY 10011

A voluntary agency promoting services to the blind

American Printing House for the Blind, Inc.
1838 Frankfort Avenue
Louisville, Kentucky 40406

A non-profit publisher of literature for the blind and partially sighted

Association for Education of the Visually Handicapped
711 14th Street, NW
Washington, DC 20005

Organizations providing information on the visually handicapped

Division for the Visually Handicapped, Partially Seeing and Blind
The Council for Exceptional Children
Mid-City Station, Post Office Box 6034

A division encouraging better educational services for visually handicapped children

Division for the Blind and the Physically Handicapped
The Library of Congress
Washington, DC 20542

Have "Talking Books" for the handicapped

Howe Press of Perkins School for the Blind
175 North Beacon Street
Watertown, Massachusetts 02172

One can purchase a brailer for blind student. Cost is relatively that of a regular typewriter

Minnesota State Services for the Blind
Communication Center
1745 University Avenue
St. Paul, MN 55460
General Mills cookbook "Cooking with Betty Crocker Mixes" available in braille and tape-recorded.

Cooking with Betty Crocker Mixes
1979 Large-type Edition
Box 6, Department 885, General Mills, Inc.
Minneapolis, MN 55460

Volunteers Services for the Blind, Inc.
919 Walnut Street
Philadelphia, PA

Braille-Ed. and large type Ed. of Easy Ways to Delicious Meals. A compiled cookbook.

Alexander Graham Bell Association for the Deaf
1537 35th Street, NW
Washington, DC 20007

An open organization promoting information relating to the deaf

American Hearing Society
919 18th Street, NW
Washington, DC 20006

A federation of speech and hearing organizations working toward the improvement of services in the field

The Convention of American Instructors of the Deaf
Gallaudet College
Washington, DC 20002

An open membership organization promoting the education of the deaf

Captioned Films for the Deaf
Special Office for Materials Distribution
Indiana University
Audio-Visual Center
Bloomington, IN 47401

Educational films to be used by the classroom teacher with captions

Susan Bookfinder
Project Coordinator
Meeting Street School
667 Waterman Avenue
East Providence, RI 02194