DOCUMENT RESUME

ED 330 152 EC 300 122

AUTHOR	Jones, Karen Harrell, Ed.
TITLE	Career Education for Transition: Curriculum Implementation.
INSTITUTION	Georgia Univ., Athens. Div. of Vocational Education.
SPONS AGENCY	Office of Special Education and Rehabilitative Services (ED), Washington, DC.
PUB DATE	90
CONTRACT	G008630112
NOTE	179p.
PUB TYPE	Guides - Non-Classroom Use (055) -- Tests/Evaluation Instruments (160)
EDRS PRICE	MF01/PC08 Plus Postage.
DESCRIPTORS	Career Education; Cooperative Learning; *Curriculum; *Disabilities; Education Work Relationship; Elementary Secondary Education; Mainstreaming; Middle Schools; Newspapers; Peer Teaching; Physical Examinations; Program Evaluation; Task Analysis; Teacher Made Tests; *Teaching Methods; Transitional Programs; Tutoring; *Vocational Education

ABSTRACT

Eight papers are presented to assist career resource teachers who are working with handicapped students to prepare them for transition from school to work. "In Their Own Words: Teachers Share Their Experiences in Working with Special Education Students" (Lewis Allen) describes the use of cooperative learning in English, electronics, and interior design. "Peer Tutoring and Task Analysis Applied to Health Occupations" (Karen H. Jones and Charlotte A. Rosebrook) comprises almost half of the monograph in presenting a unit on vital signs which illustrates the integration of peer tutoring and task analysis. The unit includes lesson plans; task analysis criteria, prerequisites, equipment, and procedures; evaluation checklists; a test; and transparency masters. Other papers include: "Strategies for Maximizing Participation of Special Learners in Vocational Programs: One School System's Approach" (Connie Handley); "Meeting the Challenge" (John Gugerty); "Evaluating Transition Programs" (Lynda L. West); "Adapting Lesson Plans for the Mainstreamed Student" (Judy W. Wood and Jennifer W. Miederhoff); "Adapting the Teacher Made Test for Students Mainstreamed into Vocational Education" (Judy W. Wood and others); and "Fun and Games in the Newspaper: A New Teaching Tool for Handicapped and Disadvantaged Students" (Jill Schwartz Burnham.) (JDD)

Career
for *Trans*
Curriculum
nplementati

Career Education for Transition: Curriculum Implementation

Edited by:

Karen Harrell Jones

Department of Vocational Education
College of Education
University of Georgia
Athens, Georgia 30602

1990

The development and dissemination of this monograph was financially supported by Grant No. G008630112 from the Office of Special Education and Rehabilitation Services, U.S. Department of Education.

Acknowledgements

A great deal of time and talent has gone into the preparation of this monograph. The career resource teachers who participated in the three year implementation of the Career Education for Transition grant have been working with handicapped students. Their input concerning the kind of information they felt would assist them when working with handicapped students influenced the selection of articles presented in the document. It is the hope of the CET staff that this monograph will be beneficial as they continue to work to prepare handicapped students for transition from school to work. Many school administrators allowed the grant personnel to work in vocational classrooms. We take this opportunity to express our appreciation for their professional support of this transition project.

The project staff for the **Preparation of Related Services Personnel in Career Education for Transition** grant have been dedicated and hard-working. Lewis Allen, Instructor, Debbie Johnson, Graduate Assistant, Debra Smith, Graduate Assistant, and Regina Meeler, Senior Secretary. I applaud your sincere labors to improve the daily living and work skills of handicapped youth. In addition, thanks go to Joan Taylor, Senior Secretary for Home Economics Education, for so cheerfully chipping in and helping out at times when needed a helping hand. The excellent word processing exhibited in the monograph are the work of Charles and Beverly Connor.

Lastly, I gratefully acknowledge the support of Home Economics Education, the Department of Vocational Education, and the College of Education at the University of Georgia with the development and implementation of the **Preparation of Related Services Personnel in Career Education for Transition Project**

Karen H. Jones

Table of Contents

In Their Own Words: Teachers Share Their Experiences in Working With Special Education Students

Lewis Allen
Career Education for Transition Instructor
Department of Vocational Education
University of Georgia
Athens, Georgia 30602

Introduction

In 1986 the University of Georgia was awarded a federal grant. The proposal was written by Dr. Karen Jones, an assistant professor in the home economic program, and Paul Sale, an instructor in the Division of Exceptional Children of the School of Education. The purpose of this three year grant was to investigate how vocational education can better serve special education students in learning life skills that will help them make a successful transition from school to the community. Vocational teachers currently in graduate school were recruited to participate in the grant.

Three graduate level courses were development. The first two courses studied characteristics of special education learners, federal regulations dealing with special education, current transition theories and models, and a heavy emphasis on classroom methods and techniques that enhance the learning of special education students.

The third course was a practicum designed for the students to implement the ideas that they developed in the first two courses. What follows are their experiences and thoughts as they implemented their ideas designed to improve the educational experiences of special education learners in vocational classrooms.

Raymond Casteberry, middle school industrial arts teacher, noted, there have been and probably always will be barriers to those people in our society who are in some way different from "the rest of us". It may be the color of their skin, the way they dress, their religious beliefs, or maybe their native language. For those who suffer from some mental or physical difference, these barriers are, more often than not, the greatest that exist. Fortunately, in our school systems, these barriers are slowly being brought down.

The most obvious barriers are such things as the lack of ramps for wheel chairs, handicapped parking, and bathroom facilities in public places. These are the physical barriers, the most visible and the easiest to correct. The less obvious barriers, that still occur and are the hardest to overcome, are attitudes that limit the success of mainstreaming.

Meeting the special needs of each of the handicapped students in our schools is important, yet many programs still don't include provisions for special students. Many classroom teachers make no modifications for these students in their lessons, due impart to a lack of training, time, funding, or a combination of the three.

It is my hope that involving special students in exploratory vocational programs, such as industrial arts, will help them become a little more well-rounded, a little more accepted, a little more capable of independent living perhaps even more employable.

Cooperative Learning at Augusta Technical Institute

In the summer of 1988 the three course sequence was offered on the Augusta Technical Institute campus. Six Augusta Tech staff members enrolled in the grant, as did one staff member from nearby Swainsboro Technical Institute. These teachers expressed an interest in studying techniques effective with lower academic functioning students. They were concerned that lower functioning students were not actively involved in class activities, consequently they were falling behind in their work. They also observed that many of these students were socially isolated. The teachers posited that the students isolation may contribute to their high rate of attrition. After being introduced to the basic concepts of cooperative learning, from the publications of David W. Johnson and Roger T. Johnson, of the Cooperative Learning Center, at the University of Minnesota, they decided to implement cooperative learning in hopes of addressing these concerns.

An important principle of cooperative learning is that members of the group have a vested interest in all members of the group learning the material. Note how the teachers in the following reports attempt to insure this interest through the grading procedures.

Debbie Clark teaches business education classes at Augusta Technical School. Here is her report on how she used cooperative learning in her classroom.

The purpose of this English 141 class is to review grammar, punctuation, and capitalization rules. There are 23 students in the class. A tremendous amount of material is covered within a relatively short period of time. Therefore, students are provided minimum amounts of time to practice the material covered. This activity was prepared to review students on the basic uses of the comma in writing.

The students were divided into groups of 5 or 6. The next time I utilize this activity, I will utilize groups of 3 or 4 because it was difficult for each person to see the paper when they put their desks together. After the group members reviewed the rules on comma usage, they punctuated several sentences. These sentences were checked by the instructor and errors were discussed within the group.

The group members were then given an individual quiz where each person had to punctuate sentences. The individual grades on the quiz were averaged to generate a group score. Students in groups where the average was 90 - 100 received 6 extra points on their upcoming unit test; 80 - 89 received 4 points; 75 - 79 received 2 points.

The results were as follows:

One group received 6 points.
Two groups received 4 points.
One group received 2 points.

During the activity I moved around watching, listening, and observing the groups interaction. Three of the groups had a person who immediately took control of the writing. One group split the writing among three members. This group was especially effective including ALL members in the activity. Nothing was written down until all members agreed. Three of the groups stayed on task without any reminding. One group had to be reminded twice to discuss ONLY the activity. (This group had the lowest average. There was a good mixture

of abilities; however, no group member took any type or leadership role.)

Students' reactions to the activity were positive. All students were actively involved in the group work. This class is normally lecture-drill. The students really enjoyed the change of pace. The only reason this type of activity would not be used on a regular basis is time. The activity took about one and one-half hours to complete.

Jigsaw is a popular cooperative learning technique. With Jigsaw each student in the group is assigned different material to study. When the group meets, each student shares the information he/she covered. This makes the group dependent on each member to learn and report what they have learned. Debbie used expert groups with her class. This involves getting students who studied the same material together before meeting with their main group. This creates interdependency in group members. Here is Debbie's report on using the Jigsaw technique in her marketing class.

When I utilized Jigsaw, I divided the class into 4 groups. Each member was given a reading which contained information about several pricing terms and strategies. The students were given 10 minutes to read the information. The students then reassembled into EXPERT groups and discussed their topics. Expert groups consist of students who have all read the same material. I roamed from group to group to make sure they understood their terms. The expert groups were given some questions to help guide their discussions.

The original groups formed once again, the next day, and presented their particular term to their group members. Each person was then asked to take a brief matching quiz covering the terms. I utilized the same grading procedure as I did in the earlier activity. Points were earned and would be added to their next major test.

Reaction to the activity varied. For the most part, they liked the interaction (they all know each other well); however, some of the students who scored well in a group where some of the members didn't were upset with the low scoring students. They (there were three students) said the others "..just didn't listen," when the information was presented.

I think this is an excellent way to teach terminology provided the instructor monitors the expert groups carefully to ensure the correct information is being prepared for the groups.

Barbara Nelms is responsible for preparing students for the Dental Assistant National Board Exam. Previously she reviewed the material by lecturing and leading class question and answer sessions over the material.

Each student was given the Mock Board Examination. The following day the students were divided into two groups. Each member of the group was given a role such as, Validator (to make sure the answer was correct); Facilitator (to make sure that each member played an active role); Recorder (the person who marked the answers on the answer sheet,) etc. Each group was given one copy of the Mock Board Exam, and they had to reach a consensus on the answers and record them. This took a six hour period with breaks.

Each student was given an individual grade for the board exam. This score was arrived at by assigning 50% to the grade made by the individual and 50% to the grade made by the group to which the student was assigned. The results from this process were excellent and the

students were most enthusiastic about the process. In the past, the instructor reviewed by verbally going over all the material. This resulted in many students tuning out and not being active participants. The amazing factor was to see how involved the slower students were and the amount of improvement they showed in their understanding of the material. I had been concerned that I would have several failures on the National Board Exam because of the number of academically weak students I had. I had one failure of the National Board Exam and an overall average above the National Average on the Exam. I am positive this activity was one of the major reasons the weak students passed the exam. The interaction with their peers was most positive and their improvement amazing.

Here is Barbara's experience in using Jigsaw.

Each student was provided with resource material and four lesson objectives for which the student would be responsible for presenting to the other students. The instructor was also available if additional explanation or resource material was needed.

This approach was used instead of the teacher lecturing on the material. The students complained greatly in the beginning about this approach; however, when the first session ended they showed a little more enthusiasm about it. Audiovisuals were shown that would have been used with the lecture. The grades on the test were higher than the students had been scoring when only the teacher presented the material. I have now used this several times, and the attitudes of the students have changed. They now like this approach and feel it has a positive effect on their learning process.

Some of the things I have noted are:

1. The students are much more attentive using the cooperative learning method.
2. The students' scores have improved with this method.
3. Class rapport has shown a great improvement. Slow students are now more involved with classroom activities.
4. The instructor receives much more attention when she adds a few comments to the materials presented by the students, than when she presents all the materials.

Lynda English teaches in the Career Development Center of Swainsboro Area Vocational Technical School. This program is for students that have not yet posted qualifying scores in some or all of the academic skill areas. There were 12 students in the class that participated in the following group works.

A test of 20 questions was given covering spelling, word usage, and sentence structure. Grades ranged from 55 to 95. The class was then divided into 2 groups and told to complete the test as a group. Five points would be added to each individual's original test score if his/her group completed all the answers correctly. For each question missed, a point would be deducted from the 5 points. The group who got the most correct would receive 5 additional points. One group got all the questions right and received 10 bonus points. The other group missed only one and received 4 bonus points.

Comments from students:

"I like this."

"If I could take the test over by myself now, I could make 100."

"I'll remember these answers a long time."

Comments from instructor:

"The students were very competitive in trying to get all the questions right. They spent a lot of time on each question and made sure everyone agreed on the answer. In this activity I see a level of intensity that is not always evident in ordinary assignments. I feel they will remember these words and rules when they are writing their assignments later in the course."

An individual test was given to six students over chapters 1 - 6 of the book *Your Attitude is Showing*. Grades ranged from 68 - 80. The day after the test, before I gave the tests back to the students, I gave them the chance to add 10 points to their grades. They could do this by taking the test as a group. If all questions were answered correctly, 10 bonus points would be added to all their scores. For every question missed, a point would be deducted from the 10 bonus points. Thirty questions were on the test. If they missed more than 10, those points would be deducted from their scores. They retook the test as a group and only missed 2 questions. Eight points were added to all the scores.

Comments from students:

"I really liked this because we discussed the questions among ourselves and saw things we didn't before."

"This really made me think about the questions."

"This is fun. It's kinda like cheating."

"When we talked about the questions, I saw I was not reading the questions carefully."

Comments from instructor:

"The students really got into trying to get all the questions right. The hardest part for me was not to give hints. I think they have a much clearer understanding of the material."

Austin Kersey teaches electronics at Augusta Tech.

During summer quarter, 1988, I taught Electronic Devices with six students. Two students were educationally and economically disadvantaged. I used cooperative learning as a means to complete a project. I divided the class into two groups. I assigned students to the groups in such a way as to assure the groups were heterogeneous in terms of academic skills.

The project was to design a power supply. All six students were somewhat hesitant about working with their group. The apprehension was due to the belief that their grade on the project would be determined by the other two in the group and they would have to accept a grade that did not reflect their work. The grading procedure involved adding group bonus points to their individual scores. This grading procedure helped because there was no way to lose points, they could only achieve extra points. After the groups began working, all fears vanished and cooperation was the role of the day. One student did the recording. Another looked up data needed for the components. The third in each group was the checker. He/She made sure the diagram and the components were correct. Enthusiasm and participation increased geometrically as the class proceeded. At the end of class the students did not want to stop. They made plans to meet with their groups after class to continue working on the project, which led to study groups that met after school hours. There was a marked increase in student scores on the test. I continued this exercise in the two

succeeding quarters with the same results. I decided to expand my cooperative style of teaching.

I then assigned topics to each student for them to discuss during the next class session. This also worked well. The students prepared themselves so they could present the material while the rest of the class listened. Students seem to absorb the material better when it came from their peers. Plus, it gave them a sense of being responsible for their own learning experiences.

Cooperative learning is an excellent review technique. Instead of me telling the students everything we've done that's important, I now have them discuss the material that will be introduced on the test. They see what their peers think is important to know and remember it better than they would if I lectured on the material. It allows the students to spend more time on the material that they know the least. The students are not as reluctant to admit they are having problems understanding a concept to their peers as they are with the teacher. They are also more willing to ask for help. I believe this social interaction helps build very important social skills needed to be successful on the job.

A word of caution to the teacher employing cooperative learning. Don't think cooperative learning will free you to do something else. The teacher must monitor the groups to listen for incorrect materials and to ensure that the students are indeed working on the assigned material. But, the teacher should not be continually butting in. If you think you should say something don't. Only interfere if asked or you know that you need to.

The class gave an inservice on cooperative learning for the Augusta Technical Institute faculty. The workshop was well received by the faculty. Many teachers tried the technique. During the following days I heard many comments by teachers and students all of which was positive. Some teachers made a game out of it like family feud or the super bowl. This proved to be a good learning experience for the students and a lot of fun for everyone.

Cooperative Learning At The Middle School Level

As mentioned in the above section, ensuring that all members of the group participate in the work of the group is an important principle of cooperative learning. This helps the special education student become an active member of the class. Another important principle of cooperative learning is that groups should be heterogeneously mixed with regard to academic abilities, sex, and race. Applying these two principles assures special education students of important social interaction with their peers.

Joy Davis, a middle school home economics teacher, provides an example of how to group students to assure the groups are academically heterogeneous. The Georgia Criteria Reference Test (CRT) score mentioned by Joy is a state wide test periodically given to all Georgia students. It was developed to measure essential skills which are a part of the Georgia curriculum.

Cooperative learning groups are an effective way to increase student participation in class. Cooperative learning works because the groups are heterogeneously mixed and the responsibility of learning is placed on the students. The students learn to function as a team, regardless of their individual differences.

Grouping:

Students are broken into groups using the following characteristics:

1. Six teams, each consisting of four or five members.
2. Students are first divided using CRT scores to break them into four groups of high. medium high, medium, and low ability levels.
3. Students are given a pre-test to determine prior knowledge of the subject area. Pre-test scores will be used to determine high, medium high, medium, and low ability levels.
4. CRT and pre-test scores are compared and broken into the final groups of high, medium/high, medium, and low levels.
5. Assign one person from each ability level to a specific table (1-6) to create heterogeneous groups.

Paul Chew teaches industrial arts in a rural middle school. He provides another method of assigning members to groups. He also touches on a method of preparing students for cooperative learning, as well as giving a detail account of his use of cooperative learning.

I have used cooperative learning for two quarters. My students have responded enthusiastically to this "new" way of working and learning, and I have found it to be a break from the traditional students-working-at-their-own-desks-type of learning. They definitely like the opportunity to work together, to be able to help each other, and the social interaction that occurs when they work in small groups.

To choose the cooperative teams, I first gave a quiz that covered some of the information that we were studying., Based on the grades from these quizzes I selected the teams. The teams were heterogeneous in nature so that each group represented the class as a whole. Sometimes I choose team leaders and gave them the assignment of selecting the members for their team. To make sure the groups were heterogeneous I required the first choice to be someone of a different race and same sex. Then on the second choice they would be required to choose someone of the same race but opposite sex, etc.

The students accepted the idea of cooperative learning very well, even though that it meant they might not get to be with their friends. I think this is partly due to the fact that we discussed what cooperative learning was and why it was important. I told them the emphasis is on learning to work together with other students. It's important to emphasize that students may have different skills; one member may be good at organizing the group and another may be good at working with their hands. We also discussed teamwork as an important element in working with others versus working alone for individual accomplishment. I also told them that most people who lose their jobs do so because they don't get along with the people with whom they work. Cooperative learning then, is really about learning those skills that are needed to work together as a group. We discussed these skills briefly, but I felt it would help to have a curriculum that deals specifically with these skills and how they can be learned.

I incorporated cooperative learning in a unit on rocketry in one of my classes. Cooperative learning teams were utilized in several different ways throughout the unit. First, they were used to complete workshops and assignments in class. I did not use a textbook in my class, so much of the information was presented in discussions, lectures, and demonstrations. To see whether students had grasped the key elements, I used worksheets as a means of reviewing and testing

what they had learned. Using their class notes and handouts, the cooperative teams got together and completed their assignments. Then we reviewed again, as a class, to test their learning up to that point and see where any problems might be. Students had the opportunity to make corrections to their work before it was turned in for a grade.

The second way cooperative teams were used was to review for a quiz bowl, and a final test covering the material that had been presented. Quiz bowl is a team competition which can earn extra credit for team members toward their final test. Before the quiz bowl the teams got together and were given a list of questions. Sometimes the questions had the answers with them, and other times the group had to research the questions and agree on the correct answers. Teams were allowed to devise there own strategy for reviewing and testing each other on the material. The key was for all members to participate and learn as much of the material as possible. I used check sheets for the team leaders to complete to keep track of each team members participation. During the quiz bowl, individual team members were called on to answer specific questions. If missed, the next team had a chance to answer the question. The questioning continued until a correct answer was given. If answered incorrectly by all of the teams, the question was thrown out, and another was picked for the same players. In the first round, the first player in each team was asked a question and points were scored when the question was answered correctly. In the second round, the second player on each team was asked a question, etc. Each team had the same number of questions during the quiz bowl.

Before play starts, it is important to set the rules. From experience I found these rules were necessary to make the competition fair and move smoothly.

Rule 1: Repeat each question twice and twice only. The player may answer the question after it is stated once, or have the option of having the question repeated. If an incorrect answer is given, the next player on the next team must answer the question without the question being repeated, unless the question had been read only once, to the first student. This requires that all team players pay attention when a question is being asked.

Rule 2: Players may not talk or discuss the question until the correct answer is given. This is aimed at preventing players from helping each other during the contest. If a team is talking during play, a point can be deducted or their next turn skipped. Because there is often a lot of excitement, it is helpful to remind students that there is no talking during the question. Members may cheer their team if they score the correct answer.

Rule 3: Each player will have 5 seconds to answer the question. The timer will call "time" and the judge will call for an "answer". If no attempt is made, the question goes to the next team.

Rule 4: Teams must keep track of whose play it is, and if necessary, raise their hand when it is their turn. This is especially necessary when teams have uneven numbers of players and it gets confusing to the judge whose turn it is. Any team going out of order will lose their turn. Again, this makes all players pay close attention.

Curriculum Modification in a Secondary School

Marvelyn Smith used the following modifications, in her high school home economics class, in teaching an interior design unit about the use of colors. She first lists learning strategies to be used by all students, then gives the modifications for the special education students. The concepts behind these modifications could be generalized into any classroom situation.

Day One

Learning Strategies:

1. View and discuss filmstrip "Living Color."
2. View and discuss transparencies outlining chapter two on color schemes.
3. Review orally using the color wheel.

Special Education Students' Modifications:

1. The regular students are required to take notes from the filmstrip. The Special Needs Students will be given a worksheet covering the filmstrip.
2. The SNS will be given copies of the transparencies with the important parts highlighted.

Day Two

Learning Strategies:

1. Complete word puzzle "The Word on Color."
2. Complete worksheet, "The Shades of the Truth."

Special Education Students' Modifications:

1. "The Word on Color" worksheet has been modified by giving the first letter of each word. The special education student may use their notes.
2. The special education student complete only the circled items on the worksheet, "The Shades of the Truth." They may use their notes.

Day Three

Learning Strategies:

1. Make a color wheel with crayons.
2. Complete worksheet, "Test your color I.Q."

Special Education Students' Modifications:

1. The colors have been labeled beside each circle on the color wheel.
2. The first letter of each word is written in on the worksheet, "Test Your Color I.Q." They may use their notes.

Day Four

Learning Strategies:

1. Review the following worksheets: "The Word on Color", "The Shades of the Truth", and "Test your color I.Q."
2. Begin looking for examples in magazines for color notebook.

Special Needs Student Modifications:

1. I will make sure they understand any items missed on the worksheets.
2. The regular students are required to find four examples of each color scheme. The special education student is required to find two examples of each color scheme.

Day Five

Learning Strategies:

1. Find four examples of each color scheme in magazine.

1b. Paste and label all color schemes on notebook paper.

Special Education Students Modifications:

1. They are required to find two examples of each color scheme excluding the split complementary color scheme and the double complementary color scheme.

Day Six

Learning Strategies:

1. Complete gluing and labeling of color scheme examples.
2. View and discuss film "Start Decorating with Color and Pattern."

Special Education Student Modifications:

1. I will assist them in identifying their examples.
2. The regular students are required to take notes from the film. The special education student will be given a worksheet covering the film.

Day Seven

Learning Strategies:

1a. Plan and color a color scheme for a room shared by two boys, ages fourteen and sixteen.

1b. Write a short paragraph explaining the reasons for selecting the color scheme.

Special Education Student Modification

1a. The regular students will be required to select two color schemes that are harmonious - one for each part of the bedroom. The special education student may select one color scheme for the entire bedroom.

1b. They should list their reasons for selecting their color scheme, rather than writing a paragraph.

Day Eight

Learning Strategies:

1a. Plan and color a color scheme for an older woman's bed - sitting room and a bedroom shared by two active children, ages seven and nine.

1b. Write a short paragraph explaining the reasons for selecting the color schemes.

1c. Compile all color schemes into one notebook.

Special Education Students Modifications:

1a. They may choose which room they want to color: the woman's or the children's.

1b. They should list their reasons for selecting their color scheme, rather than writing a paragraph.

Day Nine

Learning Strategies:

1. Complete worksheets: "Color Maze" and "Color Harmonies".

1b. Review answers to worksheets.

1c. Review orally for test on color.

Special Education Student Modifications:

1. The "Color Maze" worksheet has been modified by giving the special education student the first letter of each word. The "Color Harmonies" worksheet has the answers filled in to the questions they don't need to know for the exam.

Day Ten

Learning Strategies:

1. Complete objective test on color and color schemes.

Special Education Student Modifications:

1. They will complete a different exam than the regular students.

Student Contracts

Several of the teachers in the grant developed their own student contracts. Students found the contracts to be motivational. Teachers found it helped to think through and then write out exactly what they expected from individual students. The first student contract, designed by Paul Chew, an Industrial Arts teacher, is an example of a contract designed to address behavior management. The second contract, designed by Charlotte Rosebrook, a health occupations teacher, deals with academic issues.

Student Contract

DATE:_____ PERIOD:_____ INSTRUCTOR:_____

STUDENT:_____ GRADE:_____

Description of behavior: (Completed by the instructor)

Student responsibility: (Completed by the student)
List the responsibilities **not** being met.

Explanation: (Completed by the student)
Explain what should be done to meet this responsibility successfully.

Contract: This contract is for _____week(s). Both my instructor and I will keep a record of whether or not I meet the requirements of this responsibility. At the end of the contract period, if I have successfully met this responsibility, no further disciplinary action will be taken. If I do not meet this responsibility, I agree to the following consequence(s) agreed upon by my instructor and me.

__ 1. A letter will be sent home, **signed and returned.**

__ 2. I will write the responsibility ___ times.

__ 3. I will write a ____ page report on being a responsible student.

__ 4. I will write a ____ page report on a subject my teacher and I decide upon.

__ 5. I will do the following clean-up assignment for ___ hours:_____

__ 6. Other (specify):_____
_____

__ 7. Contract will be reinstated for a period of ___ weeks.

I agree to this contract and the conditions state herein. I understand if I do not carry through with this contract, the matter will be turned over to the office, and that this contract will be included with a discipline report.

_____ _____
Student Signature Instructor Signature

STUDENT-TEACHER CONTRACT

Student_____ Vocational Program_____

Date_____ Vocational Teacher_____

Support Personnel_____

Description of Task	Criteria for Completion	Teacher's Initials

I _____ agree to complete the task(s) identified above. I will complete the task(s) by _____ and understand that the established criteria for the task(s) must be met. After I have successfully completed this task I may _____. (reward)

Student Signature_____ Date_____

Teacher Signature_____

Date_____

Support Personnel Signature_____ Date_____

Student Information Forms

A very common problem expressed by vocational teachers concerns the lack of information about special education students assigned to their classes. In response to this problem the teachers designed their own student information forms. Here are three examples of the forms developed. The first form was designed by Joy Davis, a middle school home economics teacher. The second form was designed by Paul Chew, a middle school industrial arts teacher. The third form was developed by Marvelyn Smith, a high school home economics teachers.

STUDENT INFORMATION SHEET

Teachers, I would like your assistance. I am always glad to have special education students in my class, but I need to know a few things about each student. Please take a minute to fill out this form and return to me by the first day of each six weeks.

Thanks!!

Joy C. Davis
Home Economics

1. Student Name_____ Class Period_____
2. What is the child's specific identified problem?
3. Are there any special conditions or problems that I need to know how to handle?
4. Are there any specific goals in the I.E.P. that relate to my class? If so, what are the goals?
5. Does the child have a daily or weekly checklist?
6. What learning styles are best for the child?
7. What is the child's reading level?_____

   comprehension level?_____

TO:_____ DATE:_____

The following information is requested in order to provide an individualized instructional plan for the student. Your time in filling this out will be helpful and much appreciated. I will be available for staffings or conferences when needed. This information will help me become more aware of the needs and abilities of special education students. Answer only those questions you feel are relevant to the students needs.

Requested by:_____ **Program:**_____

Student_____ **Grade**_____ **Age**_____

Major teacher_____

Schedule. (subject-teacher)

1 _____ 2_____

3 _____ 4_____

5 _____ 6 _____

Reading level:_____

Comprehension: (circle one)

Poor Fair Good Excellent

Communication skills:

Oral: Poor Fair Good Excellent

Receptive: Poor Fair Good Excellent

Math skill level:_____

Competencies: (circle appropriate ones)

Add Subtract Multiplication Division Fractions Measurements

Does the student use a calculator?_____

1. **Major objectives to be addressed in vocational class:**

   1. _____
   2. _____
   3. _____
   4. _____

   (Attach additional sheet if needed)

2. Are the objectives part of the I.E.P. For this student?____
   Which ones?_____

3. What does the student wish to learn from this program (list specific interests, occupational preferences, or other information that might be helpful to the vocational instructor)?

4. What do you think are the special strengths of this student?

5. Describe how this student learns the best (ex. Visual or auditory learner or needs concrete examples, simplified instructions, etc.):

6. Describe the student's fine and gross motor skills and any limitations the student would have using tools or participating in other activities:

7. What are the past and present job experiences of this student? (Include school work experience)

8. Describe the specific learning problem(s) that this student faces in regular classroom.

9. Are there any medical problems that the vocational teacher should be aware of? (If yes, please explain)

10. Is any modification of facilities needed or special seating required? (If yes, please describe)

11. Is the family actively supportive of and involved in the progress of this student? Can they be reached by phone?

12. What support services (if any) do you think will be needed to serve this student in the vocational class?

13. Is the special education teacher available for conferences? If yes, what hour or period?

14. Is the student on a behavior modification program that needs to be carried over into the regular classroom? If yes, explain.

15. Is a periodic conference recommended by the special education teacher? If so, how often?

Other comments:

Thanks!

SPECIAL NEEDS STUDENT INFORMATION SHEET

I. Student:

Name_____
(Last) (First) (Middle)

Address_____

Telephone Number_____

Grade_____ Vocational Class Period_____

Sp. Ed. Teacher_____ available____ period_____

II. Parents or Guardians:

Father or guardian_____

Occupation_____ Business Phone_____

Mother or guardian_____

Occupation_____ Business Phone_____

III. History:

Classification_____

Specific physical or coordination problems_____

Specific behavior or emotional problems_____

Is the student on medications? YES NO
If yes, what time of day is it taken?_____

Learning style that is best for the student:_____

IV. Vocational:

Occupational preference of student:_____

Previous vocational courses taken by student:_____

Job history of student:_____

V. Class Schedule:

Please write students class schedule on the back of this paper. Include the period, subject and teacher.

Strategies for Maximizing Participation of Special Learners in Vocational Programs: One School Systems Approach

Karen H. Jones
Department of Vocational Education
624 Aderhold Hall
University of Georgia
Athens, GA 30602

Connie Handley
Vocational Home Economics
Stephens County Middle School
Toccoa, GA 30577

Overview

According to studies made in various parts of the country, 50 to 75% of all disabled persons are unemployed (Wehman, 1986, p. 3). This problem of unemployment has been recognized by our federal government. Public Law 98-199, the *1983 Education for Handicapped Act* amendments, provides that handicapped people can receive federal funds and support for secondary education and a variety of transitional services. It is anticipated that this, in turn, will provide special education graduates with the training needed in order to get a self-supporting job.

Service providers and agencies should not focus exclusively on the transition process. The initial step involves providing all students with quality foundation services in the public schools and communities related to the various vocational alternatives (Wehman, 1986, p. 5). In addition, students must be provided with sufficient vocational training and future job openings in their areas of vocational study.

Public schools are the foundation for the transition process. In this setting, the student learns basic living skills and employability skills for the marketplace. According to Wehman (1986, p. 6), an appropriate secondary program includes three critical characteristics: (1) functional curriculum, (2) integrated schools, and (3) community based service delivery. A functional curriculum consists of skills required in realistic local employment situations. This functional curriculum should start very early for disabled youth due to the fact that they tend to learn at a slower pace than other "normal" students. Educators should help students begin to understand the important of a job in the regular world at an early age. A selection of appropriate vocational objectives for training should be made at each age level throughout the years (Wehman, 1986, p. 7).

Phase I

Vocational Options

Integrated schools basically refers to serving disabled and nondisabled students of the same age group in natural work settings. Students work side-by-side in settings in the community and vocational classrooms. Community-based instruction involves training in vocational areas that have a potential market for employment in that community. This training would take place in settings which represent the community or significant segments of communities and which provide job training services (e.g. vocational Rehabilitation, United Way) (Sarkees, Scott, p. 13).

In order for a student to get the most benefit from vocational training, an individualized transitional plan (ITP) should be written. This plan would be written approximately four years before the student's graduation. The plan would assist in the student's future placement in a post-school vocation. This ITP is targeted toward a long-term goal while an Individualized Education Plan (IEP) is focused on a yearly educational plan (Wehman, 1986, pp. 12-15).

Responsibilities of Educators

School personnel play an important role in preparing handicapped and disadvantaged students with a vocational future. Teachers at the elementary level should allow students to sample types of jobs they may have when they get out of school. The elementary teacher should introduce students to concepts such as work, money, and employer relationships while in the classroom (Wehman, 1986, p. 20). Elementary teachers should also maintain contacts with teachers at other educational levels in order to keep the introductory vocational curriculum up to date.

The middle school level is important level in preparing students for the actual vocational training at the high school level. It is a major stepping stone in a student's future vocational placement. General work habits including neat appearance, being on task at the work station, and appropriately responding to supervisor criticism should be taught in vocational classes at the middle school level (Wehman, 1986, p. 21). The students may have been exposed to these work skills earlier in school, but at this level they get the chance to practice them in restricted vocational labs. The student is introduced to various jobs that they might hold in the future. The student can locate vocational areas that they are interested in and develop entry level skills related to these positions. These learned entry level skills are what senior level teachers build upon.

At the secondary level, the student focuses on vocational training toward a future job area. The teacher and student evaluates the success or failure in previous vocational experiences. The student then works toward increasing or improving production rates, improving the job performance quality, building endurance and stamina, gaining vocational experiences in real life situations, and being placed in a job or making a transition into an adult vocational program (Wehman, 1986, pp. 23-24).

After the student has completed secondary school, it is important that he school system provides follow-up for the special needs student. This will help them to assess the school instruction and adult services offered to these students. This, in turn, will point out ways these services need to be modified in order for these students to receive full benefits of such services.

Implementation Plan for One Georgia System

Stephens county is a rural county in Georgia with a population of 23,005. Although the county is rural due to its geographical setting, a majority of the farms are small family owned and run businesses. There are no major agriculture crops raised within Stephens county. The largest industries are furniture and textiles. Other potential employment sites for vocational special needs students include a foundry and machine shop, a dumpster factory, a hospital, and a clinic.

Stephens county houses one high school, one middle school, and several elementary schools. The school systems has well developed and implemented vocational and special education programs.

One author teaches Vocational Home Economics at Stephens County Middle School. The middle school offers four Vocational programs; industrial arts, business education, agriculture, and home economics. Figure 1 indicates the vocational education positions in the county. Figure 2 presents the special education positions. The elementary schools are not included on these flowcharts since vocational education is not offered at this level. The average class enrollment for each vocational class in the middle school is fifteen students per class. Vocational classes offered at the middle school include industrial arts, crafts, business education, basic computers, agriculture, and home economics. Each of these classes are introduced to students in the seventh grade. In the eighth grade, the students receive more in-depth training in areas of his/her choice. There are approximately 1.5 handicapped students in each vocational class at the middle school level.

Special Education Programs

Mildly and moderately handicapped students at Stephens County Middle School are in a part-time self-contained classroom. They are mainstreamed into the regular classes on an individualized basis. Some students are mainstreamed one period while others are mainstreamed more than one period per day. Each student's schedule is determined by the Student's Individualized Education Program (IEP).

The learning disabled curriculum focuses mainly on the academic areas reading and math. Students attend the L.D. class one period per day. In addition to teaching math and reading, the teacher of the learning disabled students tutors the students in regular subject areas in which they are having difficulty. The learning disabled students are then mainstreamed in which they are having difficulty. The learning disabled students are then mainstreamed into regular classes for the remainder of the day.

Students identified as behavior disordered meet with their teacher thirty minutes per day. During this time, the students and teacher work on identified problems related to behavior and motivation. These problems may or may not be related to specific school situations.

Likewise, hearing impaired students have a daily thirty minute meeting with the hearing impairment teacher. This time is used to assist the students with assignments, activities, or specific problems the students may have that are related to coursework and their hearing impairment.

The speech pathologist is available to each student for approximately thirty minutes a day for the purpose of working on specific problems related to their speech problems and school. Both, the hearing impairment teacher and the speech pathologist work with students one on one in order to identify the problems or potential problem areas encountered in the school setting. Once identified, the school personnel and student work toward solutions to these issues.

At this writing, Stephens County Middle School had only one physically handicapped student enrolled. This student's handicapping

condition is cerebral palsy. He will be participating in the mildly handicapped program. As he is mainstreamed into regular classes, the Mildly Mentally Handicapped teacher and classroom teachers will work cooperatively to assure he is educated in the least restrictive environment.

The education class for the emotionally disturbed students has two lead teachers and several aides. A basic academic curriculum is taught in this class. Along with the academic curriculum, the students are involved in attitudinal and motivational training. They are also mainstreamed into vocational classes for skill acquisition in daily living and employability skills.

At present, there are no severely mentally handicapped students attending Stephens County Middle School. One of the elementary schools in the system is equipped to house the severely mentally handicapped students. When the students who are currently elementary age move into middle school, they will receive transitional programming.

Enrollments in special education programs are represented below:

Mildly-Moderately Mentally Handicapped-16
Learning Disabled-21
Behavior Disordered- 7
Speech Pathology- 2
Hearing Impaired- 2
Physically Handicapped- 1

Stephens County Middle School also has a gifted program. It consists, of three advanced social studies classes. One period is offered to eight graders and two periods are offered to seventh graders. The seventh graders are taught U.S. history one semester and civics the second semester.

Vocational Education Programs

All handicapped students receive vocational education at the middle school level. The only students at the middle school who are not enrolled in vocational education are those involved in band or chorus. At present, special education students are in either of those programs. Vocational education is taught to all students, handicapped and non-handicapped, in the regular vocational classroom by vocational teachers.

According to the teacher of the mildly mentally handicapped students their functioning levels range from second to fourth grades. The functioning level of learning disabled students range from fourth to eight grades. These are the only functioning levels obtained in the research done for this paper.

Within the school setting, there are three basic educational environments. These include the regular class, the resource room, and the self-contained special class (Clark, p. 2). One of the main strengths of Stephens County Middle School is the fact that all of our special needs students will be mainstreamed into the regular classroom at some point each day. Every special needs student receives vocational training at the school. Eighty-five percent of the school's students are involved in vocational education, with the exception of those enrolled in band or chorus. Another major point is that all vocational education teachers in the school work with special education children. The concept of the IEP team is carried out. Each person carries out their responsibilities while working

cooperatively with other school personnel. The vocational program at Stephens County Middle School helps students realize the importance of career development. They are continuously involved in vocational programming during their middle school years.

At the secondary level, the students have a wide variety of vocational areas in which to concentrate. They can all be related to the community's resources and possible job openings in the county. The vocational teachers at the high school level work to ensure that students receive proper vocational training toward an obtainable career after graduation.

Disadvantages of Program

Although there are many advantages in the Stephens County Middle School Vocational program, there are also some disadvantages. It is sometimes difficult for the teachers and a student to decide which vocational area is best for him/here. Even with vocational assessment, there seems to be gaps between assessment scores and actual student interest after enrollment in specific programs. Another disadvantage is that some vocational areas offered at the secondary level are not introduced to students at an earlier level. For instance, there is a cosmetology training program offered at the Stephens County High School. Some students at the middle school level may not be aware of the scope and nature of the program. An introductory and orientation to the vocational possibilities at the high school level. The course would be beneficial to students with or without special needs. A course such as Georgia's Program of Education and Career Exploration (PECE) that allows students to investigate a wide range of career options.

Georgia have moved to the Quality Basic Education (QBE) Program. This is a disadvantage because middle school teachers are no longer paid for extended day. As a result, some vocational student organizations may differ if the middle school advisors are not willing to continue serving in the capacity of advisor without payment for extended day. Many students, especially in rural settings, gain a great deal from involvement in vocational student organizations. The local school system is not in a position to monetarily correct the situation.

Phase II

Increasing Participation of Severely Handicapped

Implementation of the plan for increasing participation of most special needs students into vocational programs was not difficulty. The most common barriers experienced were attitudinal. Special needs students were sometimes reluctant to move from their regular environment into an unknown situation. Teachers felt unprepared to adequately work with students. It will be more of a challenge to increase participation of the severely mentally handicapped student into Stephens County Middle School housed in a different location. The proposed plan is to increase the enrollment of severely mentally handicapped students in Stephens County Middle School by ten percent.

In order to achieve that goal it would be necessary to have five severely mentally handicapped students involved in the project. A meeting with the director of the severely mentally handicapped school would be necessary to receive input and to identify possible problems

that would need attention in order to reach this goal. The meeting would be used as a brainstorming session to generate possible solutions to the problems.

It is proposed that we work five of the most capable severely mentally handicapped students for one forty-five minute period per day. The director of the severely mentally handicapped school would make the selection. After determining who the five students would be, a plan to select vocational objectives appropriate for students would be developed using their IEP's. These vocational objectives must be obtainable for each of the students involved. The process would be done on an individual basis to assure appropriate vocational placement.

All the vocational teachers at the middle school will be involved in the meeting and planning for the students.

The next step would be to determine what materials are needed when teaching these students. Some materials can be borrowed from the school that houses the students. The vocational teachers may be able to construct or make some items for their respective classrooms. If special equipment or learning packets are needed, an investigation of available resource will need to be carried out.

Another major factor is curriculum modification, if necessary, for these students. The goals that were set for each student will be used when modifying the curriculum. Modification will be necessary for all five of the students. Careful consideration will be made to keep the steps that are necessary in order to provide these students curriculum as close as possible to what the other students in the vocational programs receive.

An important consideration is the number of paraprofessionals that would be available to work with the middle school teachers and the five students. It would be preferred that one aide per severely mentally handicapped student be available for at least the first year. If this is not possible, it would be recommended that no more than two of the severely mentally handicapped.

It is proposed that each student be mainstreamed for one period a day. Some students may need an alternate plan. In those cases, it will be suggested that they mainstream into the middle school three days per week. Factors such as student abilities, transportation, and support services will effect the number of days the students will participate in middle school vocational programs.

Another factor to consider is which vocational program(s) each student will plug in. The director of the school for the severely mentally handicapped will be consulted for input concerning vocational assessment scores, aptitude, and interest scores. His/her recommendations will be closely adhered to when placing the students in programs at Stephens County Middle School.

Another problem is transportation for the severely mentally handicapped students to and from the middle school. It will be recommended that a mini-bus owned by the Stephens County School System be used to transport the students from the elementary school to the middle school. The possibility of licensing one of the paraprofessionals to drive the bus will be explored.

Parental involvement would be a very important factor in providing these students with the skills they would need to help provide for themselves. The skills most focused on would be daily living skills. The parents of these five students would need to be contacted about this plan. We would ask for feedback from them. I feel that it is very important for a parent to know what his/her child is being involved in. I am confident that we would get their support.

One purpose of this project is to have the severely handicapped students actively involved in a vocational program within one year. In order to accomplish the plan within one year, a time schedule will be developed to insure movement of the plan. Figure 3 presents a one year time-line for completing the ten percent increase.

At the middle school level, students learn about work habits, behaviors appropriate for jobs, and vocational skills. These concepts also need to be taught to the severely mentally handicapped students brought into the vocational program. Transition from school to work is a high priority at the high school level. The concepts and skills needed for transition should be introduced into the curriculum of special needs students at the elementary and middle school levels.

Once the plan has been put into action, we will review and evaluate the progress and success of the program. Changes or adaptations will be made as the school personnel, parents, and students find necessary.

Special needs students have not always been adequately provided for in regards to an education that prepares them for the real working world. By expanding our horizons, we can improve the past records of one local school system.

The federal government has taken the majority of the responsibility for supporting special needs individuals in the United States. With federal legislation and emphasis on proper education, the government is looking to public schools for proper transitional education for special needs individuals.

Many special needs students are capable of being trained in a vocational field from which they can provide for themselves. Therefore, educators must provide the best vocational training programs possible. By working together, vocational teachers and administrators, with the help of special education teachers, will be able to make a difference in the transition of special needs learners from school to work.

References

Clark, G. Methods of Instruction for career education content at the elementary level.

Wehman, P. L., Kregel, J. & Schalock, R. (1986) Vocational transition for developmentally disabled students. In W. Kierman & J. Stark (Eds.), *Pathways in Employment*. Baltimore, MD; Paul Brookes, Inc.

Sarkees, M. & Scott, J. (1985) Vocational Special Needs. 2nd edition, American Technical Publishers, USA.

Figure 1

Vocational Flow Chart

Note: Tr and Industrial (T&I) includes: cosmetolo electricity, metal fabrication, drafting, rpentry, brick masonry, transportati n, health occupations, and graphic arts.

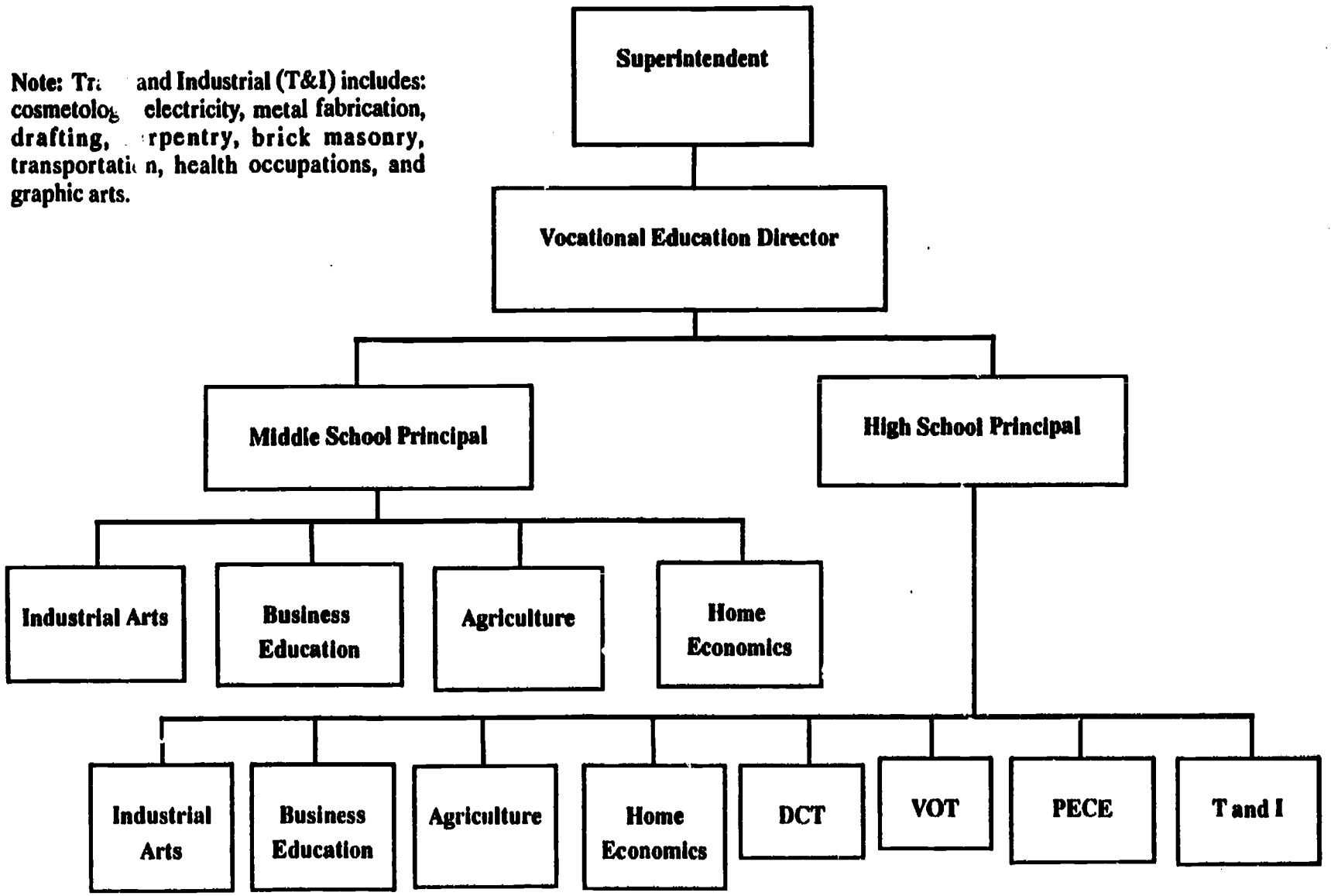


Figure 2

Special Education Flow Chart

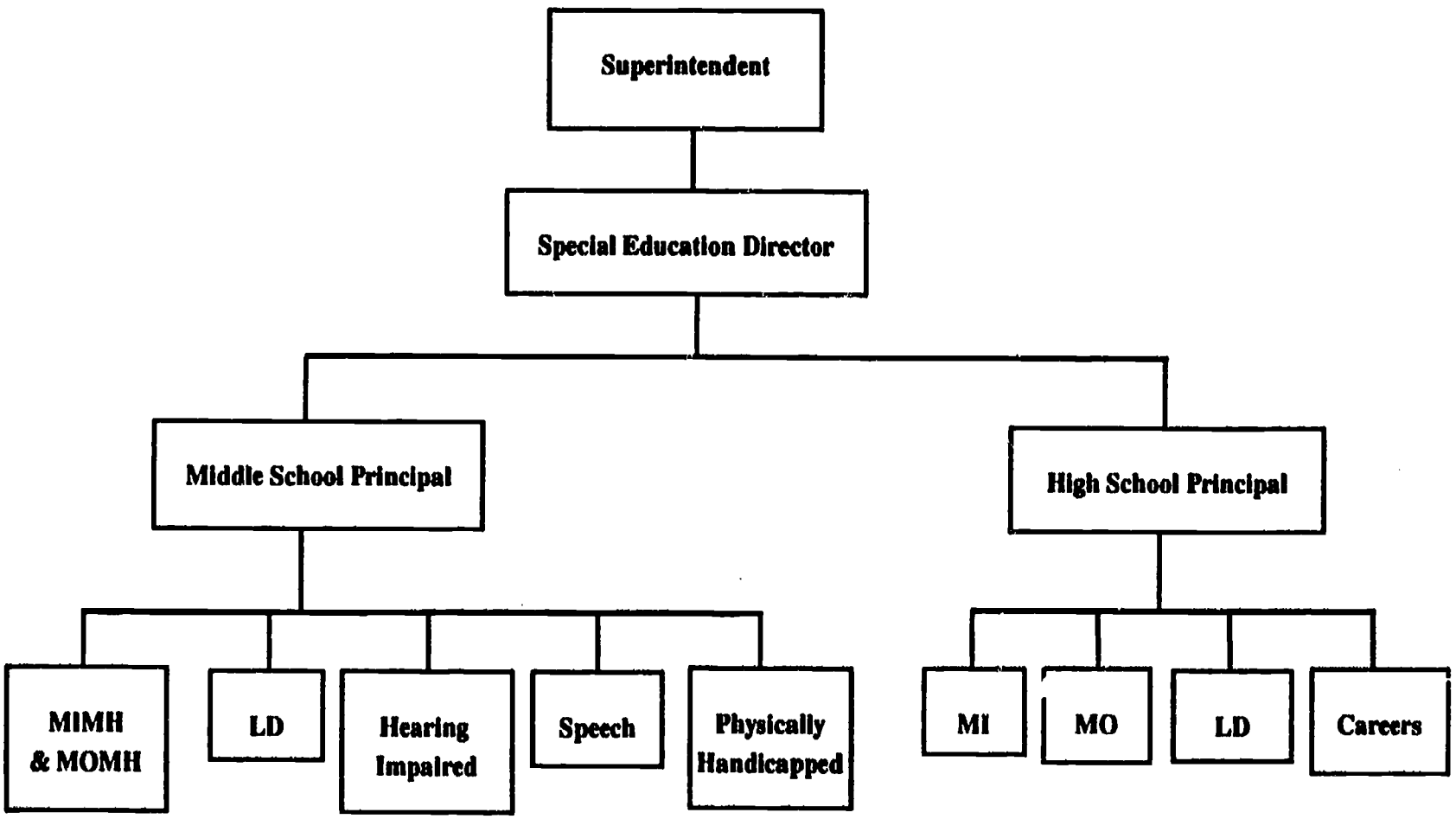
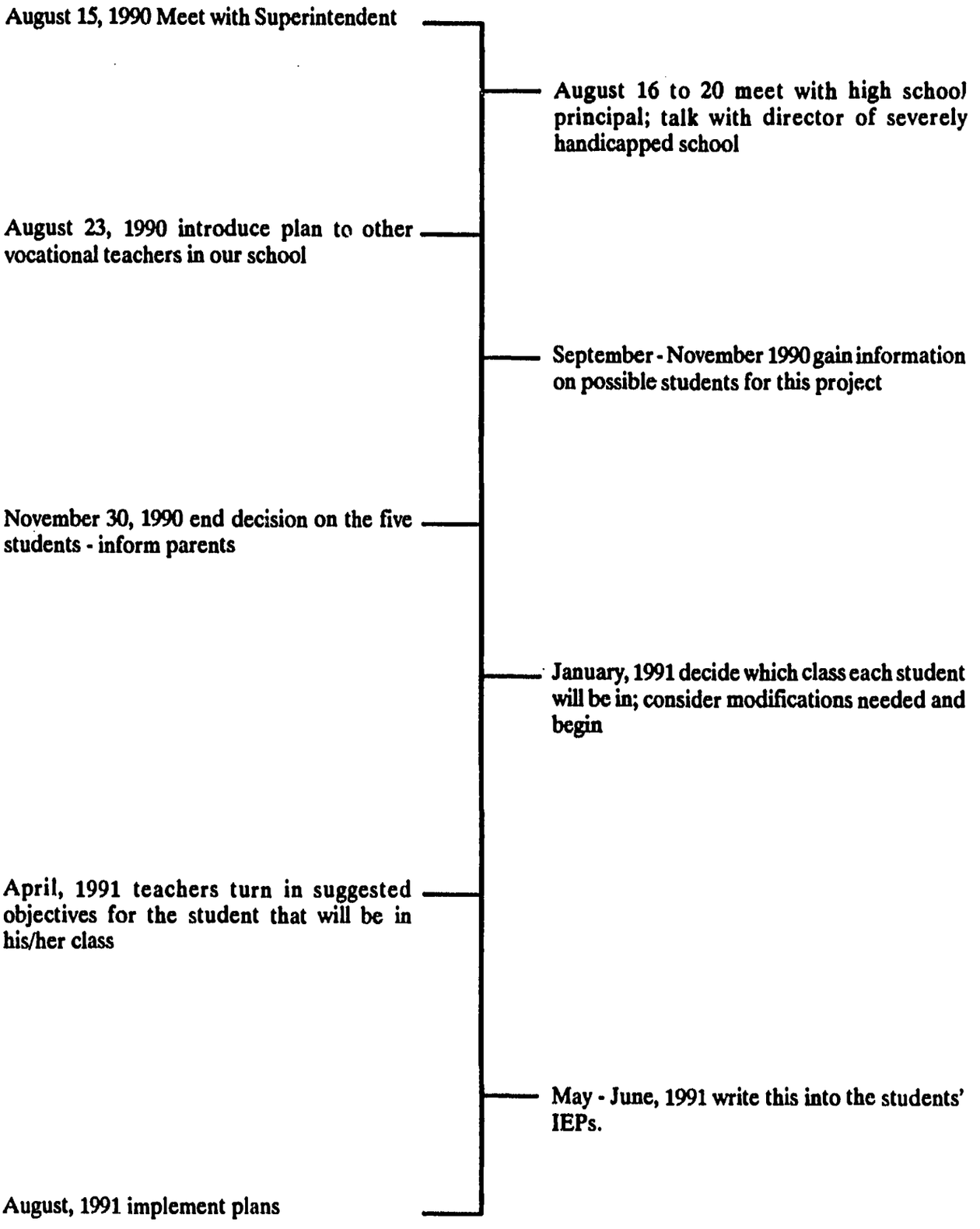


Figure 3

Time-Line



Meeting the Challenge

John Gugerty
Senior Outreach Specialist
Vocational Studies Center
University of Wisconsin
964 Educational Sciences Bldg.
1025 West Johnson St.
Madison, WI 53706
608/263-2724

Introduction

Special education is in crisis. Leaders in the field (e.g Edgar, 1987) question its mission. National and local follow-up studies document that most former special education students are unemployed or underemployed. Employers express dissatisfaction with skill levels of applicants who are disabled. This article will illustrate the extent of the problem and summarize how certain secondary school districts have used the Carl D. Perkins Vocational Education Act's mandates and resources to address that problem.

The Current Status of Youths and Adults with Handicaps

Dropout Rate

Both the *Ninth Annual Report to Congress* (1987) and the *Tenth Annual Report to Congress* (1988) summarized national data on the dropout problem experienced by special education students. The *Ninth Annual Report to Congress* (1987) provided nationwide data on 211,673 students with disabilities ages 16 and above who exited the nations public school system during the 1984-85 school year. Thirty nine percent graduated with a diploma, 15% graduated with a certificate of completion, 4% aged out, 21% dropped out, and 18% left for other reasons or for reasons unknown to the data collectors.

"The overall dropout rate of 21%...reflects an estimate of those who were actually known to have dropped out, and does not include youths who simply stopped coming to school or whose status was unknown. Undoubtedly, a substantial proportion of the 'other' category includes students who are no longer in school and have neither graduated nor reached the maximum age. Therefore, the dropout figure probably exceeds 21%" (*Ninth Annual Report to Congress*, 1987, p. 29).

This dropout pattern was *not* uniform across all disability categories. For example, students considered emotionally disturbed account for 8.6% of all students receiving special education and related services, but those who were 16 and above during 1984-85 had a dropout rate of 29% and a "left for other reasons" rate of 28%. Students with learning disabilities account for 42.8% of all children receiving special education and related services. The dropout rate for students with learning disabilities ages 16 and above during the 1984-85 school year was 19%, and the "left for other reasons" rate was 17%.

The *Tenth Annual Report to Congress* (1988) reported similar trends for special education students exiting the nation's school system during the 1985-86 school year. During that time, 213,623 handicapped youths between the ages of 16 and 21 were reported by states to have exited from school. Forty three percent graduated with a diploma. Seventeen percent

received a certificate of completion. Twenty six percent dropped out, and 11% left for other or unknown reasons.

"The (drop out) figure reflects an estimate of those who were actually known to have dropped out and does not include youth who simply stopped coming to school or whose status was unknown. It can be assumed that a substantial proportion of the 'other' category includes students who are no longer in school and have neither graduated nor reached the maximum age. Therefore, the dropout figure probably exceeds 26 percent. When compared to statistics for the previous year, the dropout rate for handicapped students appears to have increased by five percentage points. Since exit data have been collected for only two years, however, caution should be exercised in their interpretation" (*Tenth Annual Report to Congress*, 1988, p. 46).

As it was during the 1984-85 school year, the drop out pattern during the 1985-86 school year was not uniform across disability groups. During the 1985-86 school year, 26% of the students with learning disabilities (ages 16-21) dropped out, and an additional 11.5% left for other or unknown reasons. Students with mental retardation had a dropout rate of 24%, and a "left for other reasons" rate of 8%. Forty one percent of students labeled emotionally disturbed dropped out, while an additional 15% left for other or unknown reasons.

Unemployment Rate

Many recent follow-up studies of former special education students document the high levels of unemployment that they experience (Hasazi, Gordon, and Roe, 1985; Mithaug, Horiuchi, and Fanning, 1985; Zigmond and Thornton, 1986; Edgar and Levine, 1988; and Hasazi, Johnson, Gordon, and Hull, 1988). In their 1988 study, Edgar and Levine followed up a sample of 956 former special education students from 13 school districts in Washington who graduated or aged out in 1984, 1985, or 1986. In addition, these researchers followed up 30 nonhandicapped former students from each district who were not enrolled in precollege courses while in high school.

"The percentages of former students who were neither working, attending postsecondary education programs, nor engaged in any type of formal activity at six months after graduation are: severely mentally retarded, 42%; mildly mentally retarded, 44%; sensory impaired, 21%; behavior disordered, 35%; learning disabled, 23%; and nonhandicapped 8%. By 30 months, the unengaged rate for the behavior disordered group increased from 35% to 82%, while the nonhandicapped group, sensory impaired cohort, and learning disabled group were unengaged at a rate of approximately 20%.

"The percentages of students living in independent settings...at six months after graduation are as follows: severely mentally retarded, 4%; mildly mentally retarded, 6%; sensory impaired, 33%; behavior disordered, 31%; learning disabled, 18%; and nonhandicapped students 31-33%. By 30 months, the nonhandicapped and sensory impaired students were living independently at a rate of 55%. The rate of independent living for the learning disabled group increased steadily from 18% to 40% over the 30 month period (Edgar and Levine, 1988, p.6).

In their 1988 study, Hasazi et. al. followed up a sample of 134 students from nine Vermont

school districts who had graduated, dropped out, or left high school during the 1984-85 school year. Sixty eight of the students were handicapped (labeled mildly retarded, learning disabled or emotionally disturbed) and had received special education services. Sixty six members of the sample were nonhandicapped students who were not college bound, and had also left, dropped out or graduated from the nine school districts during the 1984-85 school year. "Dropped" was defined as exit from school at age 18 or older without graduating. "Left" was defined as exit from school at age 18 or older without graduating, and "graduating" was defined as receiving a diploma or certificate. Of the 68 students with handicaps, 63.2% graduated, 16.2% left, and 20.6% dropped out. Of the 66 students without handicaps, 87.7% graduated, 7.7% left, and 20.6% dropped out. In 1987, only 62% of the former students with handicaps were employed at the time of the follow-up interview, compared to 85% of the former students who did not have handicaps. Eighty nine percent of the males without handicaps were employed, as were 75% of the males with handicaps. However, only 23% of the females with handicaps were employed, compared to 71% of the female without handicaps. Almost twice as many former students without handicaps (77%) were employed full time (37.5 hours per week or more) as were students with handicaps (42%). Thirty four percent of former students with handicaps reported being unemployed and 24% were working part time. Fifteen percent of the students without handicaps reported that they were unemployed, and an additional 8% worked part time.

These data illustrate vividly that former special education students, especially females, experienced great difficulty becoming vocationally self sufficient.

What Do Employers Expect?

Employers and their employees with disabilities agree on the importance of appropriate work habits and "independence" skills in the workplace. In a study of forty pairs of Florida employers and their employees who had been identified as having handicaps during their academic experiences, Campbell and others (1987) found that both employers and employees agreed on the value of work habits such as punctuality, appropriate dress, reliability, and common sense. Employers and their employees with disabilities also agreed on the value and importance of "independence" factors such as communication skills, use of transportation, and physical stamina.

"Most successfully employed individuals with disabilities demonstrated high levels of independent financial, social, emotional, and employment functioning that was constantly reinforced by family members, who also provided emotional and financial support. Many of these successful employees with disabilities also cited high school social and daily living skills curricula as helpful during transition from school to work" (Campbell et. al., 1987, p. 91).

However, these employees and their employers differed significantly on the perceived value of reading, math and spelling in the work place. The employees rated these skills much higher in importance than their employers.

The reader is cautioned against drawing the conclusion that employers do not value proficiency in reading, math, and writing skills. Many employers take for granted that their employees have adequate basic academic skills, and only realize the importance of these skills when an employee demonstrates deficiencies that hinder job performance. At a minimum, secondary school teachers should make sure that their curricula address employment related basic skills, interpersonal skills, and independent living skills; and ensure that their students master these skills to the maximum extent possible.

On a national level, a survey by Louis Harris and Associates (*ICD II: Employing Disabled Americans*, 1987) reported results of interviews with 210 top managers, 301 Equal Employment Opportunity (EEO) managers, 210 department heads and line managers, and 200 top managers of very small companies (49 or fewer employees). Each interviewee was from a different firm. Forty three percent of the EEO officers stated that they had not hired someone who was disabled within the past year, even though an overwhelming majority said that their current employees who were disabled were "good" or "excellent" workers. These executives did *not* use "excess additional cost" as an alibi. Eighty one percent of top managers, 79% of EEO officers, and 75% of department heads and line managers said that it costs about the same to employ either a disabled or nondisabled person. However, 66% of the entire group stated that a *lack of qualified applicants* was an important reason why they had not hired disabled people.

The managers were also asked for their views on various initiatives and policy changes that might increase the hiring and employment of individuals with disabilities. The following proposals were viewed as the most effective (*ICD Survey II*, pp. 14-15):

1. Establish direct training and recruiting programs with schools and vocational rehabilitation agencies. Fifty four percent of those surveyed rated this approach as very effective, and 38% rated it as somewhat effective.

2. Have more companies provide internships or part-time jobs to persons with disabilities as an introduction to full-time jobs. Thirty three percent of the managers surveyed rated this as very effective, and 53% rated it as somewhat effective.

3. Have employers explain specific functional requirements as part of the job descriptions for open positions. Thirty five percent of those surveyed rated this as very effective, and 45% rated it as somewhat effective.

4. Have the government provide additional tax deductions for expensive accommodations, or share in their cost. Twenty seven percent of the survey group considered this very effective, while 47% considered it somewhat effective.

5. Have the government subsidize salaries for severely disabled employees for a trial period. Twenty six percent of the managers rated this as very effective, while 42% rated it as somewhat effective.

6. Have disability professionals provide technical assistance or counsel to employers for accommodations or problems with specific employees. Twenty four percent of the managers rated this as very effective, while 57% rated it as somewhat effective.

7. Have the chief executive officers establish voluntary employment targets for persons with disabilities. Twenty four percent rated this very effective, and 48% rated it as somewhat effective.

Meeting the Challenge through the Carl D. Perkins Vocational Education Act

The above data vividly demonstrate that the status quo is not good enough, and that change is necessary. But "change" in itself is not always a panacea. Unplanned, haphazard change is like lightening -- very powerful, but potentially very destructive. Organized change efforts resemble household electrical current -- potentially dangerous if handled carelessly, but immensely beneficial if harnessed effectively.

In attempting to develop and institute constructive changes in educational programming for secondary students with disabilities, educators can build on the best that currently exists, rather than tackling each aspect of their local problem as if it were unique on the face of the earth

To help educators choose and implement effective program designs and instructional techniques, the Vocational Studies Center (VSC) applied for and received funding from the U.S. Office of Special Education and Rehabilitative Services to select, describe, and publicize 12 exemplary approaches to meeting the Carl D. Perkins Act's mandates that apply to secondary level special education students. This project began on June 1, 1986, and was completed on May 31, 1988.

The Carl D. Perkins Vocational Education Act of 1984 (PL 98-524) mandates that ten percent of the funds allocated to each state through this law be used to provide effective vocational education for students with handicaps. The law also specifies that each state shall provide vocational education services and activities that are designed to meet the special needs of handicapped individuals (section 201).

Selecting and Describing Exemplary Approaches

VSC staff requested state and local vocational educators, special educators, advocacy group representatives, university personnel and others from around the United States to nominate projects they considered exemplary.

In response to this request, 250 projects and programs were nominated. Of that group, 96 completed and returned a nine page questionnaire. In addition to explaining how they used the Perkins Act's 10% handicapped set asides, these 96 respondents provided detailed descriptions of how they met the major Perkins Act Program mandates that apply to secondary level special education students (PL 98-524, section 204):

1. "...Provide information to handicapped students and parents of such students concerning the opportunities available in vocational education at least one year before the students enter the grade level in which vocational education programs are first generally available in the state...together with the requirements for eligibility for enrollment in such vocational education programs."

2. Each handicapped student who enrolls in a vocational education program shall receive "an assessment of the interests, abilities and special needs of such student with respect to completing successfully the vocational education program."

3. Each handicapped student who enrolls in a vocational education program shall receive "special services, including adaptation of curriculum, instruction, equipment, and facilities, designed to meet the needs established as a result of the assessment described"...

4. Each handicapped student who enrolls in a vocational education program shall receive "guidance, counseling, and career development activities conducted by professionally trained counselors who are associated with the quality of such special services."

5. Each handicapped student who enrolls in a vocational education program shall receive "counseling services designed to facilitate the transition to post school employment and career opportunities."

6. "Equal access will be provided to handicapped... individuals to the full range of vocational programs available to nonhandicapped... Individuals, including occupationally specific courses of study, cooperative education, and apprenticeships programs."

7. "Vocational programs and activities for handicapped individuals will be provided in the least restrictive environment in accordance with section 612(5) (b) of the Education of the Handicapped Act and will, whenever appropriate, be included as a component of the individualized education plan required under section 612(4) and section 614(a)(5) of such act."

8. "Vocational planning for handicapped individuals will be coordinated between appropriate representatives of vocational education and special education."

The Project Description Questionnaire also asked respondents to describe several other aspects of effective program delivery, including administrative structure, linkage with other agencies, in-service training approaches, student performance evaluation, post program follow-up, and program evaluation.

A national panel of experts in vocational special needs, special education, vocational education, administration, and advocacy of disabled individuals met and rated all 96 nominees on the following factors:

1. Organization
   - Administration,
   - Staffing pattern and staff qualifications,
   - Budget/fiscal considerations,
   - Target population,
   - Course offerings,
   - Number of special education students served.

2. Perkins Act mandates
   - Parent and student outreach and notification,
   - Assessment of students' abilities, interests and special needs,
   - Special instructional support and other services, .
   - Guidance, counseling and career development,
   - Counseling to facilitate transition,
   - Equal access,
   - Least restrictive environment,
   - Vocational education-special education coordination.

3. Other factors
   - Program evaluation
   - Comprehensiveness
   - Replicability.

The project director notified representatives of the top 12 projects/programs that they were selected, and secured their commitment to help arrange a site visit by members of Vocational Studies Center staff. All 12 of those originally chosen elected to continue working with VSC staff. See Figure 1 for a list of these exemplary efforts.

The purpose of each two-day site visit was to:

1. Review major fiscal and program components of each project.
2. Explore and document any key factors making this effort highly effective that were not recorded on the questionnaire submitted by local staff.
3. Learn, if possible, how each approach was established.

VSC staff worked through local contact persons to develop specific site visit schedules. During each visit, VSC staff observed activities, reviewed documents, and conducted interviews. This site visits were made between January and May, 1987.

After completing the site visits, VSC staff prepared comprehensive descriptions of each project or program, building upon material originally submitted by local staff. Draft copies were submitted to each local contact person for review and addition of current fiscal, program and follow up data. Upon receiving these reviewers corrections and additions, VSC staff prepared the descriptions included in the publication entitled *Profiles of success: serving secondary special education students through the Carl D. Perkins Vocational Education Act* (Gugerty, Tindall, Heffron, & Dougherty, 1988).

Key Characteristics of the Exemplary Approaches

These 12 approaches varied considerably in administrative structure and service delivery design, but 10 factors provided a common thread between them. The following section highlights the main elements of each factor.

Administrative support

This was more than lip service. Administrators allocated sufficient staff, funds and other resources to do the job correctly, focused on

Figure 1

Twelve Exemplary Approaches to Serving Secondary Special Education Students through the Carl D. Perkins Vocational Education Act

Leon's Intensive Training for Employment Program
Margaret Mills
Leon County School Exceptional
Student Education Department
2757 W. Pensacola St.
Tallahassee, FL 32304
(904) 487-7157

Vocational Department: Promising "Signs"
Patrice DiNatale
Horace Mann School f/t Deaf
40 Armington St.
Allston, MA 02134
(617) 787-5313

Frederick County Vocational Evaluation/Support Service Team
Ron Hoyman
Frederick County Board of Education
7922 O'Possumtown Pike
Frederick, MD 21701
(301) 694-1657

Vocational Entry/Exit Level Skills Project
Dr. Sharon Price
Camdenton R-III District
P.O. Box 809
Camdenton, MO 65020
(314) 346-5651

Project STRIVE
David Lenox
Morris Hills Regional District
MTD #3 Knoll Dr.
Rockaway, NJ 07866
(201) 627-3500

Vocational Education Preparation for Special Education Students
Dr. Mary Ann Williams
Davis County School District
45 E. State St.
Farmington, UT 84025
(801) 451-1154

Southeast Oakland Vocational Education Center
John Daenzer
School District of City of Royal Oak
5055 Delemere St.
Royal Oak, MI 48073
(313) 280-0600

Career Opportunities Program for Special Needs
Irvin Boynton
Southwest Oakland Voc Ed Center
1000 Beck Rd.
Wixom, MI 48096
(313) 624-6000

Special Needs Transition Program
Jeff Theis
Carver-Scott Coop Center
401 E. 4th St.
Chaska, MN 55318
(612) 448-5787

Pierce County Vocational/Special Education Cooperative
Douglas Gill
Pierce County Vocational/Special Education
4500 Steilacoom Blvd.
Tacoma, WA 98499
(206)756-5746

Employment Skills Program
Dale Herbers
Verona Area School District
300 Richard St.
Verona, WI 53593
(608) 845-6451

DVI/JTPA Program
Jay Silvernail
Elk Mound High School
Rt. 1, Box 65A
Elk Mound, WI 54739
(715) 879-5521

program outcomes rather than mere legal compliance, recognized outstanding performers, and supported staff creativity. Administrators also believed that an organization can and should change to meet the evolving needs of those it serves. Administrators employed a flexible management style, and encouraged staff participation in planning and decision making.

Mixture of funds and service delivery systems

Many options in addition to Perkins Act resources were tapped and forged into a coherent educational delivery system: Job Training Partnership Act funds (Title IIA, Title IIB, Eight Percent Education Coordination funds), PL 94-142 flow-through funds, PL 94-142 discretionary funds, Vocational Rehabilitation Services local education funds, corporate contributions, and private donations.

The Perkins Act set asides were used in a variety of ways, including salary support for teachers and aides, assessment instruments, computer software, adapted equipment, curriculum development, and inservice training.

Marketing vocational education

Staff marketed vocational education to two distinct target groups: a) special education students and their parents; and b) employers and the larger community. Special education students and their parents were approached through pamphlets, personal letters, encouragement to attend career days (including provision of transportation to any parent who would otherwise by unable to come), and personal contact. Employers and the larger community were approached in several ways, including recognition banquets at which current or former students presented individual employers with awards, and told the audience what a significant impact those employers had on their lives. Other examples include systematically obtaining radio, television, and print coverage of students' achievements and private sector involvement; and routinely including all local, county, and state policy makers on mailing lists for school newspapers and newsletters (both student and staff publications).

Staff qualifications

Program administrators devote a great deal of attention not only to program structure, work load allocations, and accountability, but also to recognizing staff for their achievements and selecting new staff who have the training, work history, and desire needed to teach students with handicaps effectively. Operating under the implicit assumption that it is easier to teach a new staff person technical skills, if necessary, than to rebuild his/her personality by changing attitudes, program operators screened applicants to find those who wanted to work with difficult students in mainstream settings. For example, one administrator told all applicants for vocational teacher jobs that they would have handicapped individuals in their class, and asked them how they felt about that. Applicants who did not wish to work with special education students were at a distinct disadvantage during the selection process.

Staff employed in these exemplary programs often had formal training and professional certification in several fields, including special education, vocational education, administration, guidance, social work, vocational rehabilitation counseling, and other professional specialties. A high proportion of staff also had significant experience in the private sector.

Most striking of all, however, were the attitudes manifest by staff in these programs: a) a goal directed focus, b) an expectation that they will be able to serve anyone who wished to enroll in vocational education, and c) a shared ownership of the students. Students are not "mine" or "yours", but "ours".

Parent involvement

Program staff communicate with parents in a variety of ways as students progress through their secondary experience. Communication formats include mail, newspaper announcements, one-to-one meetings, group meetings, home visits, and phone contacts. Parents are considered partners, not adversaries, in the IEP development process.

Vocational evaluation

The exemplary programs approach assessment in a variety of ways, but certain common elements appear. Each assessment approach uses a menu format that includes some form of job shadowing, work experience, and exploration/tryout of vocational classes. This approach makes it possible to develop at least a portion of each student's assessment in response to that student's specific needs and interests. Each student receives detailed feedback about her or his performance and its implications for possible career options and class sequences. Each student's parents receive detailed feedback about their child's performance and its implications for possible career choices and for the courses their child should consider taking. Assessment results have an impact on the development and implementation of each student's educational program. This impact was visible in the year to year evolution of the IEP's focus and content. Vocational assessment was also carried out at varying levels of intensity throughout each student's high school experience.

Support of students and vocational teachers within regular vocational classes

Administrators of these exemplary programs gave specific staff both the responsibility and the authority to organize, coordinate, facilitate, and/or directly provide support services. Students receive assistance both within and outside the vocational classroom. Such assistance includes tutoring, supervised practice, alternative testing formats, and adapted instructional materials.

Figure 2 illustrates the job description of the instructional aides who provide in-class instructional support in the Southwest Oakland Vocational Education Center (SWOVEC), Wixom, MI. This support is available not only to identified special education students enrolled in SWOVEC's mainstream vocational classes, but also to students identified as disadvantaged. Staff view this in-class support as one of the key ways to help members of both groups succeed in mainstream vocational programs.

Figure 3 illustrates one of the forms used in the Bethel (WA) school district, a member of the Pierce County Vocational/Special Education Cooperative, to determine the types of support that the vocational educators wish to receive from the Vocational Resource Instructor (VRI). The VRI is a professional (most often a special educator) who has received intensive training during a summer in-service training course conducted by the Co-op Program Director. The VRI's work schedule is then adjusted so that he or she can provide instructional support both to the vocationally mainstreamed special education students and to their vocational instructors.

Figure 2

SWOVEC Special Needs Teaching Aide Job Description

The following is the 1986-87 job description for SWOVEC's Special Needs Teaching Aide. This individual works 186 school days with the following job responsibilities:

1. Work closely with the trade instructor(s) under the direct supervision of the Special Needs Counselor/Consultant,
2. Develop a weekly assignment sheet with the assistance of the appropriate instructor(s) and submit it to the Special Needs Counselor/Consultant,
3. Provide input to the biweekly reports that will be written, signed, and dated by the appropriate instructor with input from the Special Needs Teaching Aide,
4. Attend Special Needs Quarterly Review Meetings and report on each Special Needs student. Minutes of each meeting will be drafted by the Special Needs Coordinator,
5. Use the Career Center as directed by the Instructor(s) or immediate supervisor. A High Tech/Career Center Aide will assist the Special Needs Teaching Aide in finding appropriate materials,
6. Assist the instructor(s) with reading/math and curriculum modification. Work closely with special needs students to render appropriate reading and math support,
7. Carry out liason activities with Work Study Coordinators and home school special needs teachers and teacher consultants,
8. Assist in the student's scheduling, reading tests on assignments, and completing study guides,
9. Assist in providing one-to-one or group instruction for special needs students,
10. Assist in maintaining the Career Center's library,
11. Develop a working knowledge of all audiovisual equipment and computers (MOIS, Apple IIe, etc.),
12. Assist the Counselor/Consultant with:
    a) Advisory committees,
    b) Annual state licensing exams,
    c) Reading/math testing of all students,
    d) Ordering materials for the Professional Staff Library,
    e) Participating in IEP's on annual basis,
13. Assist students with tasks and provide instructional support with:
    a) Math
        - Test material and review,
        - Use of cash register and making change,
        - Measurements (ruler, micrometer, decimal equivalent, percent of fraction),
        - computer accounting,
        - Data Processing programming,
    b) Reading
        - Vocabulary review,
        - Reading tests and study units,
        - Terminology interpretation,
        - Tape recording books and study units,
        - Preparing tutorette cards,
        - Developing program work sheets.
14. Help the Special Needs Counselor/Consultant Order hardware and software for the High Tech Center.
15. Accept other responsibilities as assigned by the Special needs Coordinator or the Counselor/Consultant.

Figure 3

WHAT DO YOU WANT THE VRI TO DO FOR YOU?

Name _____ Date _____

Please prioritize, according to your specific classroom needs, the following activities of a VRI:

_____ Orally read tests to OPT students.
_____ Tape record your textbook.
_____ Provide additional instruction on how to use various measuring tools.
_____ Highlight technical vocabulary found in your texts.
_____ Provide follow-up monitoring of OPT students enrolled in vocational classes.
_____ Involve you in writing IEP objectives.
_____ Assist student in answering questions/assignments for your classes.
_____ Provide you with vocational assessment results of the OPT student within your class.
_____ Provide Individual instruction to OPT students concerning shop safety.
_____ Orally read tests to OPT students.
_____ Provide alternate media for OPT students (i.e. earphones, tape recorders, etc.).
_____ Revise tests and work sheets to a lower reading level.
_____ Provide input on learning styles.
_____ Team teach.
_____ Observe OPT students in vocational classroom.
_____ Trouble shoot behavior problems of OPT students.
_____ Assist OPT students in \studying for tests.
_____ Assist you in modifying materials.
_____ Provide information on alternate grading procedures.
_____ Cover your class while you develop materials or work individually with OPT students.
_____ Other _____

Coordination of special education and vocational education

Special educators, vocational educators, administrators, and other staff in each of the exemplary programs meet frequently, both formally and informally, to plan individualized programs for students, coordinate efforts (funding allocations, supervision, instruction, instructional support, special projects) develop instructional materials, participate in joint training workshops, evaluate how well they are providing educational and other services, and consider how they can improve the effectiveness of those services. Figure 4 illustrates one of a series of competency certificates that were developed as a result of cooperative efforts among vocational educators and special educators in Frederick County, Maryland. The competency certificates help all program completers to communicate their skills more effectively to prospective employers.

Commitment to transition

As part of their goal directed orientation, staff do not feel that the school's primary objective is to issue students diplomas. Rather, staff view the school's mission as preparing students to become independent-- personally, socially and vocationally. Thus, transition is not an afterthought nor an add-on. Specific staff ensure that students make appropriate and successful transitions to work or to other post high school options. To maximize the likelihood that students will succeed, school staff develop formal transition plans (see Figure 5 for an example), create and sustain ongoing working relationships with adult service agencies and postsecondary education and training organizations, and conduct formal or informal follow-up studies of former students.

To lay a solid foundation for transition, each of these exemplary programs has a paid work experience component, and an emphasis on helping as many students as possible obtain summer employment. The value of vocational education coupled with paid employment for special education students has been documented by Hasazi et. al. (1988): "...taking one or more vocational classes in high school was positively related to current employment status following high school...for students with handicaps...In 1987, 71% of the students with handicaps who took a vocational class during high school were employed, compared to 44% of those who did not have a vocational class (p. 17). In 1987...90% of those students who had a part-time job in high school reported being currently employed, compared to a 47% employment rate for those who did not have a part-time job while they attended high school (p. 18). It appears that many students with handicaps who are successfully employed following high school have a number of experiences in common, including paid work during high school, utilization of the self-family-friend network to locate jobs, and participate in vocational education classes" (p. 32).

Community involvement

The local communities in which these exemplary programs operate view the school as an important asset. School staff have developed this atmosphere through judicious use of advisory committees, service organizations, publicity, and most of all through skills and behaviors of students who have completed vocational preparation programs and become productive members of the local community. The community also develops ownership of the school's programs by serving as training sites for special education students. Students thus learn

The Frederick County Vocational-Technical Center

recognizes

_____

As having attended for a period of year(s) the course of instruction in

Truck Mechanics

And is certified as having completed the list of skills as checked on the reverse side of this document. Information regarding his/her attendance may also be found on the reverse side.

_____
Instructor's Signature

_____ _____
Date Principal's Signature

- Figure 4 continues -

Figure 4

SKILLS PROFILE

Truck Mechanics

The following list indicates the mastery of skills that the student has achieved.
These skills have been presented to the student in classroom theory and verified in practical application.
See the scale at the bottom left corner.

JOB TRAITS
1. ____ Follows Shop Rules
2. ____ Uses Reference Manuals

SAFETY
1. ____ Follows Safety Rules
2. ____ Identifies Shop Hazards

FASTENERS
1. ____ Identify Basic Types
2. ____ Use Tap & Die
3. ____ Repair Broken and Defective Hardware

HAND TOOLS
1. ____ Has Knowledge of Hand Tools

SHOP EQUIPMENT
1. ____ Operate Drill Press
2. ____ Operate Hydraulic Press
3. ____ Operate Vehicle Jacks
4. ____ Operate Pneumatic Tools
5. ____ Operate Lifting Equipment

BEARINGS AND SEALS
1. ____ Identify Types of Bearings & Seals
2. ____ Adjust & Repack Wheel Bearings
3. ____ Install Lip Type Seal

VEHICLE SERVICE
1. ____ Lubricate Chassis
2. ____ Change Engine Oil & Filter
3. ____ Check All Hoses, Belts & Fluid Levels

CLUTCHES
1. ____ Remove Clutch Assembly
2. ____ Replace Pilot Bearing
3. ____ Install Clutch Disc & Pressure Plate
4. ____ Replace Throw-Out Bearing
5. ____ Inspect, Lubricate & Install Throw-Out Bearing Fork
6. ____ Measure & Adjust Pedal Height
7. ____ Adjust Clutch Free-Play

STANDARD TRANSMISSION
1. ____ Remove & Install Standard Transmission
2. ____ Adjust Linkage
3. ____ Check Fluid Level & Inspect for Leaks
4. ____ Overhaul Standard Transmission

AUTOMATIC TRANSMISSION & TORQUE CONVERTERS
1. ____ Replace Transmission Oil Filter
2. ____ Perform Pressure Check
3. ____ Remove, Install Automatic Transmission
4. ____ Overhaul Automatic Transmission
5. ____ Remove, Install Torque Converter
6. ____ Overhaul Torque Converter

DRIVE SHAFT & UNIVERSAL JOINTS
1. ____ Remove & Install Drive Shaft
2. ____ Replace a Universal Joint

DIFFERENTIALS
1. ____ Replace Pinion & Rear Axle Seal
2. ____ Measure & Read Axle End Play
3. ____ Remove, Disassemble, Assemble & Install Differential
4. ____ Measure Differential Ring Gear Run Out
5. ____ Measure & Adjust Differential Pinion Bearing Preload

BRAKES
1. ____ Adjust Brake Shoes & Parking Brakes
2. ____ Remove & Install Brake Shoes
3. ____ Remove, Install, Rebuild Wheel Cylinder
4. ____ Remove, Install, Rebuild Master Cylinder
5. ____ Replace Disc Brake Pads
6. ____ Remove, Install, Rebuild Caliper

HYDRAULICS
1. ____ Identify Components of Basic System
2. ____ Identify Different Types of Pumps
3. ____ Disassemble & Assemble Gear Type Pump
4. ____ Disassemble & Assemble Vane Type Pump
5. ____ Disassemble & Assemble Piston Type Pump
6. ____ Disassemble & Assemble Hydraulic Cylinder

Days Absent: 1st year_____ 2nd year_____ 3rd year_____

I certify that the information appearing on this document is accurate, and I hereby give permission for the Vocational-Technical Center to release to prospective employers or post-secondary admissions offices, any and all pertinent information.

Scale:
4 - performs independently
3 - performs with supervision
2 - cannot perform at this time
1 - not presented

Signature of Student _____ Date _____

Signature of Instructor _____ Date _____

Please call the Vo-Tech Center Guidance Department at 694-1658, between the hours of 8:00 a.m. and 3:30 p.m. for additional information.
Our mailing address is 7922 Opossumtown Pike, Frederick, Md. 21701

Figure 4, contd.

Figure 5

LCS-ESE Approved: _____
Expiration: _____

LEON COUNTY SCHOOLS
The Best Place to Learn

THE SCHOOL BOARD OF LEON COUNTY, FLORIDA
EXCEPTIONAL STUDENT EDUCATION

INDIVIDUAL TRANSITION PLAN

Conference Date(s): _____ Initial

Last Name First M	School	DOB	Student Number
Parent's Name	Diploma Option Grad. Date	Age	Social Security No.
Address			Phone

TRANSITION PLANNING AREAS	STATUS	RECOMMENDATIONS Anticipated Services, Placement, Other Options	RESPONSIBILITIES Parent/Student School/Agency	TIME LINE Initiated/ Completed
Personal/ Family Relationship				____
Medical Needs/ Resources/ Other				____
Personal Management				____
Leisure/ Recreation				____
Vocational Training/ Assessment/ Placement/ Work Experience/ Post Sec. Ed.				____
Transportation				____
Financial/ Income				____
Agency Eligibility/ Resources				____
Living Arrangements				____
Academics				____

Comments: _____

Participants/Title	Signature	Participants/Title	Signature

White - Cumulative/ESE Folder Yellow - ESE Office Pink - Parent Goldenrod - ESE Teacher

skills that are relevant to local employers because these skills are taught in the workplace.

The reader who wishes to learn more about each of these exemplary programs will find detailed descriptions in the publication entitled *Profiles of success: serving secondary special education students through the Carl D. Perkins Vocational Education Act - 12 exemplary approaches* (Gugerty, Tindall, Heffron, and Dougherty, 1988.

Summary

The Chinese symbol for crisis is a combination of the symbols for "danger" and "opportunity". Without prompt and effective action, a large proportion of our special education students will continue to face the dangers of an adulthood for which they are ill prepared. By building on the best that is currently available, educators can provide their students with an opportunity to achieve personal, social, and vocational self sufficiency.

References

Campbell, P., Hensel, J.W., Hudson, P., Schwartz, S.E., & Sealander, K. (1987). The successfully employed worker with a handicap: employee/ employer perceptions of job performance. *Career Development for Exceptional Individuals, 10*, 85-93.

Carl D. Perkins Vocational Education Act, 20 U.S.C., 2301 et seq, (1984).

Edgar E. (1987). Secondary programs in special education: are many of them justifiable? *Exceptional Children, 53*, 555-561.

Edgar, E., & Levine, P. (January, 1988). A longi-tudinal study of graduates of special education. *Interchange, 8*, 3-5.

Gugerty, J.J., Tindall, L. W., Heffron, T.J., & Dougherty, B.B. (1988). *Profiles of success: serving secondary special education students through the Carl D. Perkins Vocational Education Act - 12 exemplary approaches*. Madison, WI: Vocational Studies Center.

Harris, Louis and Associates. (1986). *The ICD survey II: employing disabled Americans*. New York, NY: ICD - International Center for the Disabled.

Hasazi, S.B., Gordon, L.R., & Roe, C.A. (1985). Factors associated with the employment status of handicapped youth exiting high school from 1979 to 1983. *Exceptional Children, 51*, 455-469.

Hasazi, S.B., Johnson, R.E., Gordon, L.R., & Hull, M. (March 29, 1988). A statewide follow-up survey of high school exiters: a comparison of former students with and without handicaps. Paper presented at the 66th annual convention of the Council for Exceptional Children, Washington, DC.

Mithaug, E.E., Horiuchi, C.N., & Fanning, P.N. (1985). A report of the Colorado statewide follow-up survey of special education students. *Exceptional Children, 51*, 397-404.

Office of Special Education and Rehabilitative Services. (1987). To assure the free appropriate public education of all handicapped children. *Ninth Annual Report*

to Congress on the Implementation of the Education of the Handicapped Act. Washington, DC: U.S. Department of Education.

Office of Special Education and Rehabilitive Services. (1988). To assure the free appropriate public education of all handicapped children. *Tenth Annual Report to Congress on the Implementation of the Education of the Handicapped Act.* Washington, DC: U.S. Department of Education.

Zigmond, N. & Thornton, H. (March, 1986). Adjustment to the world of work for LD young adults. Paper presented at the 23rd annual conference of the Association for Children and Adults with Learning Disabilities, New York, NY.

Evaluating Transition Programs

Lynda L. West, Ph.D.
Associate Professor
Director, Missouri LINC
University of Missouri
College of Education
401 E. Stewart Road
Columbia, Missouri 65211
(314) 882-2733

Introduction

Transition programs and services are being developed by local educational agencies, area vocational-technical schools, and a variety of profit, not-for-profit, and/or nonprofit agencies to fill the void in training and related services needed by special needs students to successfully transition from school-to-work. National focus on transition from school was advented by Madeline Will, Assistant Secretary of the Office of Special Education and Rehabilitation Services (OSERS) who made the issue a federal initiative. In addition, federal legislation mandated transition services for special populations. Repetto (1987) identified the following legislative provisions as they relate to transition:

- The *Carl D. Perkins Vocational Education Act* (Public Law 98-542) assures the provision of counseling services to facilitate the transition from school to post-school employment and career opportunities.

- The *Education of the Handicapped Amendments* (Public Law 99-547) provides funds for transition services and the evaluation of transition demonstration projects.

- The *Rehabilitation Act of 1973* has been reauthorized for three years by Public Law 99-506. This Act adds supported employment as an authorized vocational rehabilitation service and provides discretionary grant monies for transitional services activities.

- The *Fair Labor Standards Act* as amended by Public Law 99-489 provides for wages paid to individuals in sheltered workshops to be commensurate with wages paid to nonhandicapped workers completing comparable work in the vicinity of the workshop.

- The work incentives provisions of the *Social Security Act* has been revised by Public Law 99-643 to assure that the Supplemental Security Income program and Medicaid benefits do not serve as disincentives to employment.

- Targeted jobs tax credit has been reinstated for a three-year period by Public Law 99-514, The *Tax Reform Act of 1986* (Federal Register, 1985; Social Security Administration, 1987; Whitehead, 1987) (p. 4).

Repetto also indicated that these legislative provisions are grounded in several disciplines and consequently, transitional services are only possible through cooperative efforts. The evaluation process is complicated by the fact various disciplines and legislative mandates must be taken into account when designing not only transition programs, but the evaluation process as well.

Numerous goals of transition programs and services exist--some of which are easier to evaluate and measure than others. Depending upon

level of involvement of the local education agencies (LEAs) with transition programs and transition services, the program goals and objectives will vary. Each LEA involved in transition is at various stages of awareness and implementation. For example, some LEAs may or may not be assessing vocational programs, they may or may not have a work-study coordinator, they may or may not have cooperative interagency agreements, etc. Therefore, program evaluation will require a different design based upon the level of experience and involvement the LEA has with transition program components.

The commonly accepted *goals* of transition found in the transiture literature are as follows:

- employment;
- improved self-esteem;
- community mobility;
- independent living skills; and
- improved quality of life.

The evaluation process

A variety of processes can be used to evaluate the programs within a LEA. Generally, the initial stages of transition consist of three processes which are used to evaluate transition programs, they are: (1) self-study, (2) internal review, and (3) external review. Each process has many advantages and disadvantages. A combination of the three processes yields the most useful information for improving transition programs and services.

Self-study is a process in which individuals involved in the transition programs and services examine the goals, objectives, activities, timelines, responsibilities, and outcomes. A self-study team would likely include:

- special education administrator;
- vocational education administrator;
- special education secondary teacher;
- vocational education instructor;
- work-study coordinator;
- support service personnel;
- vocational counselor;
- vocational rehabilitation counselor;
- parent representative; and
- other selected representatives from groups (i.e., employers, advisory committee members, transition task force members).

Activities of a self-study team which could be conducted to determine the effectiveness of the transition program and services for the district can vary greatly. Whatever those activities are to be, they would likely be guided by the following set of questions:

Transition Program Evaluation Questions

- Is there a definition, philosophy or written guidelines for transition from school to work for the district?

- What personnel in the district are involved in the planning and/or implementation of transition activities?

- Has any data been collected from students who have graduated and/or left the educational system? What type of follow-up is conducted?

- What transition alternatives or placement options are available to special needs students when they exit the educational system? (List all available alternatives currently being used.)

- What transition services are available for special needs students who are exiting the educational system? (list any related services such as transportation, residential, medical care, etc.)

- Is there a transition plan in effect in the district?

- Is there a transition team and/or task force who oversees the transition services to ensure their implementation? Who in the district is responsible for transition efforts, activities, and implementation?

- Are career education, prevocational, vocational, and transition goals and objectives written into the IEPs on a regular and consistent basis?

- Is there a separate written transition plan or is it part of the IEP at the secondary level?

- Are parents of handicapped students aware of adult service providers in the local area? In the state?

- If the student is in the last two or three years of school, have the adult service providers most appropriate for the student been contacted so they can provide input into the IEP and continuity after the student graduates?

- Has the student been evaluated and assessed for vocational training? Has the student been enrolled in a vocational training program either at the secondary or postsecondary level?

- What functional curricula has the student received?
  - Life Centered Career Education
    - Prevocational Skills (Vocational Readiness Skills)
    - Competency-Based Vocational Education
    - Social Skills
    - Study Skills
    - Health and Grooming Skills
    - Community Mobility Skills
    - Independent Living Skills
    - Other Curricula

- What involvement do parents have in the transition process?
  - Have the parents attended IEP meetings?
  - Have the parents been notified about vocational training options?
  - What long range plans have been made for the student's transition?
  - Can the parents participate in ensuring transition services are implemented?

- Is the student eligible for Vocational Rehabilitation Services?
  - Development Disabilities
  - Job Training and Partnership Act
  - Mental Health
  - Social Services
  - Others
- Has the student had work experience of any nature?
  - Work experience
  - Job shadowing
  - Work-study program
  - Cooperative education
  - On-the-job training
  - Vocational education
  - Summer employment
  - Part-time employment

- Full-time employment
- Competitive employment
- Supported employment

- What strengths of transition programming currently exist in the district?

- What areas of transition programming need improving?

- What recommendations are needed in the district to improve transition from school-to-work?

- What recommendations are the top three priorities for the district?

While these questions are not all inclusive, they are useful in identifying the degree or level of involvement and implementation in the district, in order that direction for future transition programming activities can be identified and prioritized.

The internal review process would involve a team of individuals who are not necessarily directly involved with the transition program as part of their primary responsibility in the district, but who have by some degree of involvement, either based on observation or limited experience information, which would assist a transition task force in assessing the effectiveness of the transition program. The internal review process would be designed by a transition task force which is not part of the internal review process.

Frequently, the internal review process involves a team of approximately four to eight individuals. Depending upon the size of the district, the main responsibility of the team would be to conduct face-to-face interviews with district personnel responsible for delivering various components of the transition program. The internal review team might include:

- regular, academic classroom teachers;
- administrators; and
- counselors.

The individuals who would likely be interviewed would include those district personnel who are directly involved in the transition program, such as:

- special education administrators;
- vocational education administrators;
- special education secondary teachers;
- vocational instructors;
- vocational adjustment coordinators;
- vocational evaluators;
- placement specialists;
- vocational counselors; and/or
- support services staff.

The internal review process provides the opportunity for an awareness, exchange of information, and it generates important dialogue for colleagues working with common goals. Frequently, individuals who are so closely involved in a program, need a fresh, objective perspective from others to recognize some obvious inconsistencies in the program delivery system. The internal review committee will usually formulate a set of findings, strengths and weaknesses, and recommendations for the transition task force to consider in future planning.

Essentially, the external review team goes through basically the same process of interviewing a sample of district personnel, both those who are primarily responsible for the delivery of

the various components in the transition program, the consumers of those services (students and parents), and other critically related groups, such as advisory committees, employers in the committee, rehabilitation facilities, and other agencies involved in cooperative agreements providing transition services. An external review team is generally comprised of representatives from the following categories:

- college or university faculty involved with transition;
- state educational agency representative involved with transition;
- national experts in the field of transition;
- other local educational agency representatives who are also involved with transition programming; and
- health and human service agency representative involved with districts in delivering transition services.

The external review team will summarize, in a final report, their findings, strengths and weaknesses of the program, concerns, and recommendations for future transition activities and priorities. Their findings may or may not be from the same perspective as the internal review team. It may reinforce some findings and take issues with others. Regardless, the information from both perspectives is extremely valuable. It is the duty of the transition task force to survey and review all of the available information from the evaluation proceedings and recommendations and select the critical issues to set the direction for the district's future efforts.

Evaluation Strategies

A series of evaluation strategies should be utilized when collecting information and data to assist the LEA in determining the effectiveness and future of the transition program. The most common evaluation strategies used by local educational agencies are:

- needs assessment;
- follow-up of post school adjustment of special needs students;
- student progress monitoring for those special needs students currently enrolled;
- checklists;
- surveys of administrators, coordinators, special education teachers, vocational instructors, parents of students who have just graduated, parents who have students still enrolled in school, support staff, specialists and students who have just graduated, as well as those students still enrolled;
- face-to-face or phone interviews of a sample of all personnel involved in the transition programs and transition services; and
- data collection, i.e., labor market information, students accessing transition services available in the district or the community.

The information derived from various evaluation strategies will provide a data base for recommendations. This will provide a foundation from which policy revisions, priorities, and funding requests can be supported by the transition task force charged with the responsibility of ensuring an effective transition program. Thus achieving a program which delivers a continuum of transition services needed by special needs students as they transition from school-to-work.

Interagency Coordination

Stodden and Boone (1987) wrote that cooperative planning for transition must address the entire transition process by coordinating services

provided by preparatory programs (secondary schools), linkages resources (public/private agencies and parents), and community receiving environments (work settings, post-secondary education programs, and residential facilities) (p. 538). Agreement and commitment of all participating planners must be obtained on important intra- and/or interagency issues such as:

- when postsecondary services agencies should become involved in the transition process;
- what criteria will be used to determine transition success;
- which agency will be responsible at each step of the transition process; and
- what roles each agency will play during phases of the transition process (p. 538).

They concluded that there is a need to establish a common information base which can be clearly established by the following:

- Discrepant interagency perceptions regarding the type of transition services currently being provided.
- Discrepant perceptions across agency decision-making levels regarding the type of services being provided.
- Differing inter- and intra-agency perceptions regarding the extent to which ongoing transition services were effective in facilitating successful school-to-community transition.
- The tendency of agency representatives to view the transition process within the context of their respective agency operating procedures and traditional modes of isolated service delivery (p. 539-540).

They developed a conceptual model for assessing the effectiveness of transitior services. Furthermore, Stodden and Boone suggested the following questions for transition planners:

- How well does transition curriculum content prepare students for postsecondary tasks and roles?
- What is the relationship between the instructional methodology and reinforcement systems used at the secondary preparatory level and those used at the postsecondary level?
- How do linkage service options interact with student characteristics?
- Which secondary and post secondary service providers participate/ collaborate with various linkage service providers?
- How does the training of service providers affect the degree of collaborative service provision that occurs throughout the transition process (p. 541-544)?

However, Stodden and Boone said the ultimate assessment of transition programs must be conducted by looking at transition adjustment variables or ultimate outcomes for students. The outcomes of transition programs/ services can be determined by conducting a three year follow-up of handicapped students who are at least twenty years of age (p. 544). Lowder and Zeller (1984) identified nine transition variables which have been defined as areas in which successful functioning indicates effective transition into adult community environments:

- Occupational Placement/ Maintenance,
- Income Level,
- Continued Education,
- Community Leisure,
- Transportation,

- Residential Arrangements,
- Advocacy Arrangements,
- Medical/Health Needs, and
- Personal/Social Adjustment (p. 542).

Stodden and Boone incorporated Lowder and Zellers transition adjustment variable into their cooperative assessment transition model. In addition, a list of student characteristics, program characteristics for secondary preparation for transition, service characteristics for linkage services, and program characteristics for post-secondary services were included.

Staff Development

A major component of every transition program is personnel preparation and training specifically through preservice, inservice, conferences, and conventions. The major responsibility for providing training in transition usually involves:

- Colleges and universities,
- State education agencies,
- Health and human service agencies,
- Professional organizations and associations at the local, state, regional and national levels,
- Local education agencies inservice committees,
- Federal and state personnel preparation projects, and
- Regional or state resource centers.

Individuals involved in professional development activities may provide information and assistance in formal and/or informal settings, i.e., college courses, extension courses, seminars, workshops, research or teaching assistantships, and/or one-on-one technical assistance. Each of these strategies is usually evaluated in some form which provides valuable information regarding the status and needs of the individuals, who are currently, or will in the future be involved in future transition activities. Wehman, Moon, Everson, Wood and Barcus (1988) cited one state's efforts to develop transition programs throughout the state. The state transition program offered opportunities and services for a broad range of individuals with exceptional needs. It would include:

- Employment and academic training,
- Strategic planning,
- Interagency coordination, and
- Parent training.

The program built upon existing resources and knowledge and included:

- The development and provision of inservice training programs, resource materials, and handbooks that include the major components of an effective school-based transition program;
- The development of the role and responsibilities of various disciplines in the transition process;
- The development and implementation of systematic and longitudinal vocational educational curriculum;
- The development of materials, resource manuals, and inservice training programs to support the active participation of parents in the planning and implementation of transition-related goals and activities;
- The development of resources and inservice training that will support the implementation of individual transition planning for all individuals with exceptional needs; and

- A research and development program that will support the major features of the model transition program (p. 249).

It is clear from the priorities listed that the state was putting a strong emphasis on staff development and on evaluation in the form of research and development to support the major components of transition programs.

Conclusion

Stake (1986) noted that within professional education there is a large and complex specialization of evaluation. Yet, program evaluation is far from perfect. However, since transition from school to work is a matter of public concern and investment, sound data and validated information is critically important. He suggested that there is a need for the collection of "quantifiable data as a measure of student progress." A number of ways in which the evaluation design can be perceived follows:

- the pre- and post-standard assessment instruments;
- comparison of employment statistics before and after participation in a transition program;
- ratings of a student/client progress by supervisor, teacher, employer, parent, and the student/client his/herself; and
- cost benefit analysis of the transition programs (p. 9).

He concluded with the fact that local, state, and federal efforts are seen from many perspectives. Evaluation studies can be viewed based on various standards and criteria. However, understanding the complexity of perceiving and valuing is part of the obligation of the evaluator (p. 12).

Program evaluation is a complex process, comprised of various activities designed to collect data which will provide educators with the best available, pertinent information on which to base future program decisions. The evaluation of transition programs should be conducted by professionals who understand the various components of transition since the components are from various disciplines. Evaluating transition programs requires a well thought out plan, taking into consideration each component and then prioritizing the evaluation activities, much as educators plan transition services. The result must yield useful information which will ultimately guide program design in the future.

References

Repetto, J. B. (1987). Employment of youth with handicaps: Educational and economic considerations. *School-to-work transition for handicapped youth: Perspectives on educational and economic trends* (pp. 3-9). Champaign, IL: Office of Career Development for Special Populations.

Stodden, R. A. & Boone, R. (1987). Assessing transition services for handicapped youth: A cooperative interagency approach. *Exceptional Children, 53*(6), 537-545.

Stake, R. E. (1986). *Issues in research on evaluation: Improving the study of transition programs for adolescents with handicaps.* (Report No. E 191 737). Champaign, IL: Illinois University, Secondary Transition Intervention Effectiveness Institute. (ERIC Document Reproduction Service No. ED 279 116)

Wehman, P., Moon, M. S., Everson, J. M., Wood, W., & Barcus, J. M. (1988). *Transition from school to work* (1st ed.). York, PA: Maple Press.

Adapting Lesson Plans for the Mainstreamed Student

Judy W. Wood
Associate Professor
Special Education
Virginia Commonwealth University
Box 2020
Richmond, Virginia 23284-2020
(804) 367-1305

Jennifer W. Miederhoff, M.Ed.
Research Specialist
Project TRAIN
Virginia Commonwealth University

Introduction

Lesson plans are blueprints of the day's events that dictate student-teacher interactions and instructional outcomes. Effective teaching usually springs from a well-planned, well-organized, and well-presented lesson plan. According to Hoover and Hollingsworth (1975), a good lesson plan has many educational benefits: it provides teacher guidelines, allows time for the teacher to motivate students and to prepare for individual differences, and allows teachers to evaluate their activities and improve their teaching skills.

In a special education class, "a lesson plan focuses directly on the teaching objectives that should derive from the students' goals and objectives on his/her IEP" (Payne, Polloway, Smith and Payne 1981, p. 119). On the other hand, in a regular classroom setting, the lesson plan focuses not on the teaching objective for a special student but for the group. The regular educator uses the same lesson plan for many students. However, the special education student often cannot follow the lesson plan and may fall behind. The following are suggestions to help the regular education teacher adapt the regular class lesson plan to meet the needs of the mildly handicapped mainstreamed student.

Model for Adapting the Lesson Plan

Before adapting the lesson plan, the teacher needs to examine three components of the teaching process: the teaching mode, the media used, and the content format. The following information may assist regular class teachers in making adaptations.

Adapting the Teaching Mode

A teaching mode is the method the teacher employs to impart knowledge, skills, or concepts to the student. Which teaching mode a teacher uses is an individual decision. However, there are a variety of modes that may be appropriate for meeting the needs of all students. Teachers may discover that modifying the method of presenting material may help mainstreamed students who fail to learn by conventional methods. For example, a mildly handicapped student with auditory processing problems may be unable to recall information presented by the expository methods. If the teacher adapts this mode of presentation by adding visual aids, the student may be more successful in recalling the material.

The primary teaching modes used to impart knowledge are the expository mode, the inquiry mode, the demonstration mode, and the activity mode (Jarolimek and Foster 1981). Each is composed of specific teaching techniques. We will briefly discuss one teaching technique and

suggested adaptations for that technique for each of the four basic modes. Table 1 outlines the techniques in each of the four major teaching modes.

The *expository mode* centers around the "concept exposition, which means most simply to provide an explanation" (Jarolimek and Foster 1981, p. 110). This mode, requiring an extensive amount of directive teaching, is the most popular one among educators. The major teaching techniques in the expository mode are lecture, telling, sound filmstrips, explanation, panels, recitation, audio recording, motion pictures, and discussion (Jarolimek and Foster 1981).

The most widely used technique in the *expository mode* is lecturing. Adaptations to the lecture method can provide useful learning aids for all students and can improve the quality of learning in any classroom. Major areas of adapting the lecture include using multisensory input, providing a visual outline of the lecture, using slot outlines and study guides, and giving a structured overview. Table 2 lists each of the areas for adapting the lecture, with a brief explanation.

The second mode, *inquiry*, involves "asking questions, seeking information, and carrying on an investigation" (Jarolimek and Foster 1981, p. 110). The student is encouraged to "discover the dimensions, attributes, rules and other information" (Wehman and McLaughlin 1981, p. 115). Since the mainstreamed student may need additional structure, a teacher's guidance is an important element in the inquiry mode. This mode includes several teaching techniques, such as asking questions, stating hypotheses, coming to conclusions, interpreting, classifying, self-directed study, testing hypotheses, observing, and synthesizing (see Table 1).

One of the most widely used techniques in the *inquiry mode* is that of asking questions. This strategy is used often by effective teachers and

Table 1

Specific Techniques Used in Various Teaching Modes

Expository mode	Enquiry mode	Demonstration mode	Activity mode
Lecture	Asking questions	Modeling	Role playing
Telling	Stating hypotheses	Experiments	Construction
Sound fulmstrip	Coming to conclu-	Exhibits	Preparing exhibits
Explanation	sions	Simulation and	Dramatizing
Panels	Interpreting	games	Processing
Recitation	Classifying	Modeling	Group work
Motion pictures	Self-directed study	Field trips	
	Testing hyotheses		
	Observing		
	Synthesizing		

Adapted from Jaolimec, J., and C. D. Foster. 1981. Specific methods associated with various modes of teaching. In *Teaching and learning in the elementary school* 2nd ed., 131-32 New York: Macmillan Publishing Co., Inc. Copyright 1981, by Macmillan Publishing Co., Inc Reprented by permission.

Table 2

Lecture Modifications

	Method
Multisensory input	*Overhead Projector* Use to highlight major lecture topics Use colored pens to circle or underline concepts to be emphasized Cover transparency and reveal only one concept at at time *Tape Recorders* Tape lectures to be played back for review Listen to tapes to reinforce class notes Use tapes to study for tests *Video Tapes* Play back for student to review Use when student is absent from class *Graphic Materials* Use visual aids such as charts, models, globes, maps, and pictures
Structured overview	Use to graphically present the major and minor topics of the lecture USA Checks and balances Legislative Executive Judicial
Study guides	Use to review the lecture Provide vocabulary and facts to be reviewed *Bulletin Boards* Use to present new information Use to reinforce new concepts
Visual Outlines of lecture	Outline the lecture to help students through a graphic whole-part-whole approach to learning (major lecture topics are listed). May be written or presented on the overhead projector.
Slot outlines	Give students a lecture outline in which they only have to complete some omitted information Use as aid in note taking; requires less memory load for student Provide a completed slot outline for the student to make corrections

Adapted from Wood, J., and M. Rosbe. 1985. Adapting the classroom lecture for the mainstreamed student in the secondary schools. *The Clearing house 58*(8): 354-68.

Table 3

Matching Questions to Student's Level of Learning

Level	Definition	Suggested Verb
Knowledge	Ability to remember previously learned material	Define, recall, remember (answers who, what, where, when)
Comprehension	Ability to grasp the meaning of materials through rephrasing and comparing information	Compare, contrast, describe, explain the main idea, rephrase
Application	Ability to use learned material in new and concrete situations	Apply, classify, ask how many, solve, write an example
Analysis	Ability to break down material into its component parts so that its organizational structure may be understood	Analyze, dissect, examine, infer, outline, point out, (answers why)
Synthesis	Ability to put parts together to form a new whole, solve problems, make prediction	Combine, develop, generalize, invent, modify, revise, write
Evaluation	Ability to judge the value of material for a given purpose	Assess, conclude, contrast, criticize, judge, weigh

Adapted from Bloom, B. S., et al. (Eds) 1956. *Taxonomy of educational objectives: The classification of educational goals, handbook 1: Cognitive domain*. New York: Longman, Inc.

is the second most used teaching technique after that of lecturing (Henson 1979). Teachers should be aware that questions have different functions and require different levels of thinking. Questions may be classified by Bloom's Cognitive Taxonomy into six levels, ranging from simple to complex. By looking at the verb in the question, we can determine the level of the question. Table 3 presents Bloom's six levels, with definitions and suggested verbs for each. Teachers may use this table to determine what level of question they are asking. For example, if a teacher were going to ask a student to solve the equation 3x - y, he or she could find the verb solve on the chart and discover that this was an application level question. If the mainstreamed student were functioning at the knowledge level, this question would be inappropriate. The teacher would then modify the question to correspond to the student's learning level, for example, "Define the word equation."

There are simple ways in which a teacher can adapt questioning techniques so that the mainstreamed student has a better chance of responding.

- Delay content-level questioning until after the lesson has been presented. Avoid introducing lessons with questions the student may not be able to answer.
- Ask questions of the mainstreamed student at his or her cognitive level only (for example, knowledge level, evaluation level).

- Pause for at least three seconds after asking questions. This increases students' confidence and gives slower students a chance to answer.
- State questions clearly and specifically. Students can not guess what the question means.
- Call student's name before asking question.
- Encourage mildly handicapped students to ask questions by listening carefully to questions and respond using the content (for example, "Yes, I think I see what you mean. Are you saying...?").

The third major teaching mode is the *demonstration mode*, which ... nds on "showing, doing and telling" (Jarolimek and Foster 1981, p. 120). When a teacher employs demonstration, he or she presents information in a concrete way, making this an ideal method of teaching mainstreamed students. The demonstration mode utilizes concrete examples of the information, making abstractions more meaningful for students with poor conceptualization abilities. The teaching techniques in the demonstration mode include modeling, experiments, exhibits, simulation and games, and field trips (Table 1).

One of the most effective methods of teaching in the demonstration mode is modeling. Modeling is an optimal teaching method to use with mainstreamed students since the students learn new skills or ideals that have been demonstrated by a person acting as an example (Suran and Rizzo 1970). Steps to be taken in modeling are as follows:

- Students observe the teacher solving the problems while verbalizing the solution strategies.
- Students work through similar problems with the teacher simultaneously verbalizing solution strategies.
- Teacher gives feedback on correctness of responses.
- Explanation is given as needed or requested. Students practice with teacher supervision.

Figure 1 presents an example of using modeling in teaching.

The *activity mode* "can best be described as a set of strategies that involve pupils in learning by doing things that are, for the pupils, meaningfully related to the topic under study" (Jarolimek and Foster 1981, p. 127). The teaching techniques included in this mode are role playing, construction, preparing exhibits, dramatizing, processing, and group work (Table 1). Some general adaptations for the activity mode are to provide a sequential checklist for student projects, to assign a peer tutor to help the mainstreamed student, and to select activities in which students are likely to succeed.

One of the most valuable teaching techniques in the activity mode is role playing. Role play has potential in almost every classroom, although some subject areas, such as English literature or history, probably lend themselves better to role playing than others, such as algebra or biology. Role playing has several uses, varying from illustrating a topic of study to dealing with a special problem common to the group. It is especially effective for mainstreamed students who may have feelings of inadequacy in the regular classroom. Role playing exercises allow these students to assume a new identity or character, which may free them to express feelings, concerns, frustrations, and beliefs that they would not normally voice when they are begin themselves.

FIGURE 1
Modeling

Sample lesson

Subject: Geometry

Concept: Quadrilaterals

Review of terms:
lines
rays
parallel lines
sides
polygon

1. *Student Observation*
(Teacher draws 6 figures on board. Students have copy of same figures on individual worksheet.)

"This section has six figures in it. You will learn from studying these figures how to tell if a polygon is a *quadrilateral*. Look carefully at the polygons. Think about how they are *alike* and how they are *different*. Some of these are *quadrilaterals* and some are not. Look at figure 1. We can describe it by counting how many sides it has: 1, 2, 3, 4. It has 4 sides. Write down 4."

2. *Student and teacher verbalize*

"Look at figure 2. How many sides does it have? Count with me: 1, 2, 3, 4, 5. Write down 5.

"Look at figure 3. How many sides does it have? Count with me: 1, 2, 3, 4. Yes, it has 4 sides. Write down 4.

"Here is figure 5. Count the sides. How many sides does it have? Write down 4.

"Now look at figure 6. How many sides does it have? Write down 4."

3. *Teacher feedback*

"In the last six examples, four were alike and two were different. What are the numbers of the four which were alike?" (Give students time to answer.) "If you said figures 1, 3, 5 and 6 were alike, that is correct."

"Describe how you think the four figures you named were alike." (All had 4 sides.)

"The four figures which are alike are *quadrilaterals*. *Quadrilaterals* have 4 sides."

4. *Practice*

Give students additional polygons to identify as quadrilaterals. Give individual help as needed.

Adapted from Scott, J. A. 1972. *Lessons on selected geometry concepts written in expository and discovery modes of presentation and a test of concept mastery.* (Practical Paper No. 13.) Madison, WI: University of Wisconsin, Research and Development Center for Cognitive Learning.

Role playing is effective only with advance teacher planning and careful preparation of the class. The steps involved in role playing include at least the following:

- Select the role-playing situation.
- Warm up with some simple charades or other similar exercise.
- Explain the general situation to participants and observers.
- State the problem to be worked on the condition of the exercise.
- Explain participant roles.
- Explain audience roles.
- Conduct the role playing.
- Lead a discussion of the role playing.
- Evaluate the exercise.

Some minor adaptations in traditional role playing may make the exercise more meaningful for mainstreamed students. For example:

- Allow students to take a nonspeaking role or no role at all if they are uncomfortable. The mainstreamed student may serve as an active observer, a recorder of the role play, or a timekeeper.
- Accept all responses without criticism or ridicule. Do not allow other students to criticize responses.
- Write down directions for students with auditory processing problems who do not understand oral directions.
- Make videotapes of role plays to help students recall aspects of the exercise for review and study.

To modify the techniques in the four teaching modes, teachers should first familiarize themselves with the potential problems each mainstreamed student is likely to encounter. The next step involves adapting the teaching techniques to meet the students, specific needs. By first adapting teaching techniques, the teacher is on the way to adapting the components of a lesson plan to better meet the needs of the mainstreamed student.

Adapting Media

The second aspect of the lesson plan the teacher may modify is the medium selected to enhance the teaching mode. All students employ a variety of perceptual styles to learn. They may have a preference for visual, auditory, or tactile learning, or they may use a combination of approaches. The mainstreamed student, however, often has one or more deficient perceptual modalities, which may contribute to learning difficulties. Teachers may use media in their instruction to address these variations in perceptual preferences.

One effective type of visual equipment is the overhead projector, which may be used to show the main points of a lecture. This emphasizes the visual channel of learning and supplements oral work. Additional activities with the overhead, reflecting the shadow of the object on the wall and stimulating student interest through guessing what the object is; writing directions on a transparency; and reinforcing new material by using a colored grease pencil to underline and/or circle important points.

The tape recorder, on the other hand, is a valuable source for supplementing visual work. Oral directions may be taped for students who cannot get all the information in class. Study questions may be recorded with answers for the mainstreamed student.

Videotape recorders are versatile tools that combine the auditory and visual means of pre-

sentation. Teachers may record class activities, demonstrations, guest speakers, and other class procedures. Important lectures and/or test review sessions may be videotaped for students needing extra help.

Finally, bulletin boards, when used creatively, may incorporate auditory, visual, and tactile methods of presenting information. For visual learners, bright visuals enhance concepts learned aurally. For auditory learners, the bulletin board may instruct in the use of auditory equipment such as the tap recorder. For tactile learns, objects may be attached to the board for students to touch, identify, or classify. Incidental learning becomes intentional learning through creatively designed bulletin boards.

Adapting Content Format

After teachers adapt the teaching mode and media, they may also adapt the third component of the lesson plan, the content format. Frequently the mainstreamed student cannot complete assignments or cannot read the material presented. When this occurs, the format of the content may be modified. Academic content consists of any of the materials or activities presented to the class, such as textbooks, worksheets, blackboard materials, lectures, demonstrations, and panel discussions. One effective method of adapting the format is through the use of task analysis. With this approach, the teacher breaks an instructional task down into several steps. The mainstreamed student is then taught one step at a time. Other ways of adapting the format may include: typing instead of handwriting all worksheets; reducing the number of items per worksheet to be completed; and adapting the textbook to the student's reading level.

Table 4

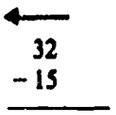
Lesson Plan Modification

Subject:	**8th-grade physical science**	**Student's name:** Robert King
Skill taught:	Identifying acids and bases	**Domain level:** Comprehension
Objective:	Student will be able to distinguish acid and base solutions at 80% accuracy using litmus paper testing	**Student learning style:** Visual
Entry-level skills:	Student is able to perform basic laboratory experiments. Reading Level - 5.5	
Regular class plan	1. Lecture on acids and bases 2. Demonstration of testing for acids/bases 3. Textbook pages 76-91 4. Students write lab report on results	
Adapted teaching mode (Techniques)	*Expository adaptions: (Lecture)* • Provide students with individual lecture outline for notetaking • Provide study guide on acids/bases for test review *Inquiry adaptions: (asking questions)* • Before and after the demonstration, ask relevant questions that the mainstreamed student has a good chance of being able to answer. Match questions to students' level of learning (e.g., knowledge, comprehension, etc,) • Ask questions designed to ensure all students understand *Demonstration adaptations: (Modeling)* • Use modeling strategies to allow students to follow demonstration with own tests *Activity adaptations: (Group work)* • Provide a peer tutor to help the student in following directions, completing the activity, writing the lab report, and reviewing for the test.	
Media adaptations	Use overhead projector to show visual outline of lecture. Underline main points with grease pencil Videotape demonstration for study and review Write major points of lecture and definitions of new terms on blackboard Provide bulletin board with various substances to be identified as acids or bases. Answers should be included for self-check	
Adapted format content	Adapt pages 76-91 of book to student reading level, and provide a typed copy Provide a visual chart as a prompt in recalling characteristics of acids and bases Allow the mainstreamed student to complete lab report in the resource room if necessary; if he/she has difficulty writing, allow student to record responses for the teacher to evaluate	

FIGURE 2
Examples of Adaptations of Content Format

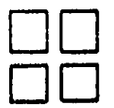
I. *MATH*

A) Give visual cues:



```
  32
- 15
----
```

B) Give visual prompts:



```
  384
x  64
-----
 1536
2304
-----
24576
```

OR

```
  688
x  10
-----
    0
```

II. *SOCIAL STUDIES*

A) Provide structured overview of topic:

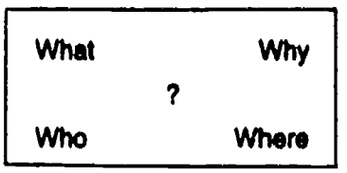
III. *SCIENCE*

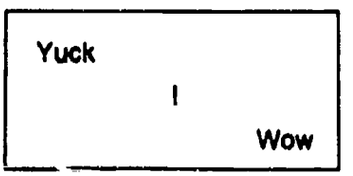
A) For students who have trouble reading from the text or following teacher's oral directions, taped science experiments would be an excellent adaptation. This allows for independence and flexibility. The student can pursue his or her interest and accept responsibility for preparation.

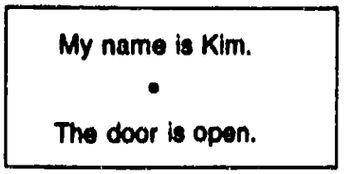
B) Also, with experiments, provide an adapted lab assignment sheet.

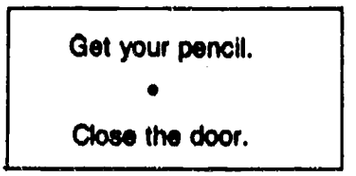
IV. *ENGLISH*

A) Provide a punctuation key to use when punctuating sentences. The key consists of four cards containing a punctuation mark and key words or sentences.









Adapting the content format reduces the workload for the handicapped student and matches the material to the way in which the student learns. Figure 2 presents other examples of adapted content format. Table 4 presents a sample adapted lesson plan, which includes adaptations for the teaching mode, the media, and the content format.

Summary

In order for the mainstreamed learner to meet instructional objectives, the regular class lesson plan may need to be modified. The three components of the plan that may be easily adjusted to meet the mainstreamed student's needs are the teaching mode, the media, and the content format. The teacher may provide the opportunity for mainstreamed learners to succeed in the regular classroom by adjusting his or her teaching strategies to meet their unique educational needs.

References

Henson, K. T. 1979. Questioning as a mode of instruction. *The Clearing House, 53*(1): 14-16.

Hoover, K. H., and Hollingsworth, P. M. 1975. *Learning and teaching in the elementary school.* Boston: Allyn and Bacon.

Jarolimek, J., and Foster, C. D. 1981. *Teaching and learning in the elementary school.* 2nd ed. New York: Macmillan.

Payne, J. S., Polloway, E. A., Smith, J. E. and Payne, R. A. 1981. *Strategies for teaching the mentally retarded.* Columbus, OH: Merrill.

Scott, J. A. 1972. *Lessons on selected geometry concepts written in expository and discovery modes of presentation and a the of concept mastery.* (Practical Paper No. 13) Madison, WI: University of Wisconsin, Research and Development Center for Cognitive Learning.

Suran, B. G., and Rizzo, J. V. 1970. *Special children: An integrative approach.* Glenview, IL: Scott, Foresman.

Wehman, P., and McLaughlin, P. J. 1981. *Program development in special education.* New York: McGraw-Hill.

Wood, J., and Rosbe, M. 1985. Adapting the classroom lecture for the mainstreamed student in the secondary schools. *The Clearing House, 58*(8): 354-58.

Adapting the Teacher Made Test for Students Mainstreamed into Vocational Education

Judy W. Wood, Ph.D.
Associate Professor
Special Education
Virginia Commonwealth University
Box 2020
Richmond, Virginia 23284-2020
(804) 367-1305

Jennifer W. Miederhoff, M.Ed.
Research Specialist
Project TRAIN
Virginia Commonwealth University

Karen H. Jones, Ed.D.
Assistant Professor
Division of Vocational Education
University of Georgia
Athens, Georgia 30602

The development and dissemination of this paper was partially supported by the U.S. Department, Division of Personnel Preparation, Special Education Programs Grant #G008530322

Introduction

Increasing numbers of mildly handicapped students are receiving educational services in the regular class setting (U.S. Department of Education, Ninth Annual Report to Congress, 1987). As the handicapped student becomes an adolescent, the major responsibility for vocational preparation falls upon vocational educators (Kregel, 1987). Support comes from the special education teacher and other services. However, the "vocational educator is the individual who possesses the knowledge of the local business community, an understanding of the skills and characteristics required by effective workers, and the instructional strategies that will effectively prepare secondary students for the world of work" (Kregel, in press).

Frequently, educators need alternative educational strategies to provide more appropriate instruction to meet the individual needs of handicapped students served in vocational classes. Providing adaptations to existing curricula can provide the necessary adjustments that many mildly handicapped students need for succeeding in the mainstream (Wood, 1984). In order to serve handicapped youth more effectively, instructional adaptations become of paramount importance. The following article provides vocational education teachers with suggestions for making instructional adaptations for one aspect of the curriculum, the teacher-made tests. These suggestions are based on a model for adapting tests (Wood, 1985).

Adaptations for Test Construction

One instructional area which poses difficulty for many handicapped students is test taking. Mildly handicapped pupils may have difficulty taking tests in vocational classes for a variety of reasons. Because of repeated problems with test performance, test anxiety is a common problem and often results in a cycle of more failure. Other pupils perform poorly on tests due to the nature of their handicaps. They may not be able to successfully take a test due to a variety of

reasons including: poor reading skills, writing difficulties or poor reading comprehension. For example, Jessica, a mildly retarded student, works well in the classroom when psychomotor activities are presented. However, Jessica has difficulty reading and comprehending teacher-made tests. Jessica is too shy to ask for help in reading the tests, therefore, she generally receives failing grades. As a result, she regards herself as a failure.

To help students like Jessica it is not necessary for vocational teachers to lower standards for mainstreamed students in their classes. They can simply provide adaptations to their tests during the test construction stage. The three areas of test construction which may be adapted are (1) test directions, (2) test items, and (3) test design. Figure 1 presents these components for the adapted teacher-made test.

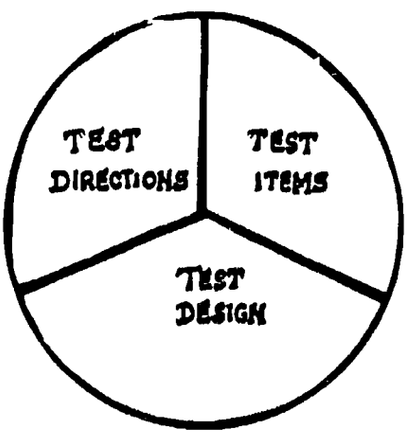


Figure 1 Model for Adaptation When Constructing the Teacher-made Test (Wood, 1985)

The term "mildly handicapped" encompasses a broad population which includes students who are learning disabled, have mild emotional or behavioral problems and students who are mildly mentally retarded. For this reason, all of the suggested test modifications would not be appropriate for every handicapped student. Additionally, all of the suggestions outlined may not be appropriate for every age level. Generally, however, these are good testmaking procedures for all students regardless of age or ability. Teachers should use sound professional judgement in determining which adaptations to employ to meet the needs of individual students. For example, the suggestion to "place all matching items and choice selections on the same page," is a sound test making technique for all students. Whereas, to "avoid having students draw lines to the correct answer," is a suggestion that would primarily assist students with visual perceptual problems. For convenience, suggested adaptations will be divided into two categories. The first section, "Suggestions for All Students," are sound test construction procedures for both handicapped and non-handicapped students. "Suggestions for Mainstreamed Students," the second category, is primarily designed for mildly handicapped learners. Teachers may cross categories as needed and utilize suggestions from either category when appropriate.

TEST DIRECTIONS

Test directions are a critical part of test construction. If the mainstreamed student does not clearly understand what to do, failure is almost certain to occur. The teacher may consider the following suggestions for making test directions clearer for regular and mainstreamed students:

Suggestions for All Students

1. Keep directions simple. Avoid using unnecessary words.
2. Place directions at the beginning of each separate test section.
3. State only one direction in each sentence.

4. To focus the student's attention underline and capitalize the word DIRECTIONS.
5. Avoid using words such as NEVER, NOT, ALWAYS. If you must use these, underline and capitalize.
6. When giving more than one direction, list vertically.
7. Go over each direction before the test. Be sure that the student understands what is to be done.
8. Tell students the reason or purpose of the test.

Suggestions for Mainstreamed Students

1. Briefly define unfamiliar and/or abstract words.
2. Provide an example of how the student is to respond.
3. Avoid using only oral directions. If the directions are read aloud, provide visual examples.
4. Explain the procedures for recording answers.
5. While the test is in progress, check with the mainstreamed students to be sure that they are following the directions accurately (Wood & Miederhoff, 1986).

The following example incorporates the suggestions for adapting directions:

> DIRECTIONS: Circle the correct answer.
>
> Example: The engine oil is checked with a
>
> a. warning light
> b. pressure gauge
> c. dip stick
> d. NONE of the above

TEST ITEMS

The second step in test construction is selecting and adapting test items. Commonly used test items found on teacher-made tests include multiple choice, matching, true-false, completion and essay.

Multiple Choice

The multiple choice item is recognized as one of the most functional types of objective test questions. The following suggestions may prove helpful for mainstreamed and regular students:

Suggestions for All Students

1. State the question or statement and the alternatives for the item simply.
2. Avoid using unnecessary words which do not help the student to select the correct answer.
3. Be sure all choices are grammatically consistent.
4. Include only one correct or clearly best answer.
5. Use plausible distractors.

Suggestions for Mainstreamed Students

1. Avoid frequent use of choice responses which may distract from the actual question; e.g.,
   (a) either, or;
   (b) all of the above; or
   (c) none of the above.
2. Allow the student to circle the correct answer rather than select a letter from a group of possible responses. This reduces the possibility of copying errors when transferring letters to the blanks.
3. Arrange answer and distractors vertically, not horizontally, on the page. (Wood & Miederhoff, 1986)

An example incorporating these suggestions follows:

> DIRECTIONS: Circle the correct answer.
>
> Example:
>
> 1. Bread will not mold as quickly when placed in the refrigerator because
>   a. cooling slows the growth of mold
>   b. darkness slows the growth of mold
>   c. mold requires heat and light to grow
>   d. cooling keeps bread from drying out as quickly

Matching

The matching exercise is designed to measure factual information based on simple associations. It is a compact and efficient method of measuring simple relationships.

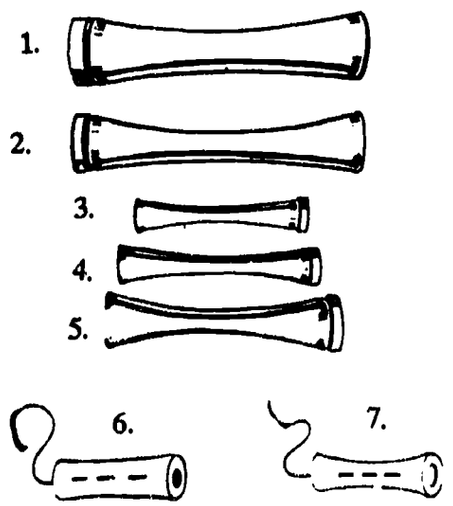
Suggestions for All Students

1. Place all matching stems and choice selections on the same page.
2. Leave extra space between items in columns to be matched.
3. Use homogeneous material for each matching exercise.
4. Indicate the basis for matching the items and choice selections in the directions.

Suggestions for Mainstreamed Students

1. Use no more than ten items in the matching lists. If you have more than ten items, group them by concepts in clusters of ten.
2. Have only one correct answer for each item.
3. Avoid having students draw lines to the correct answer. This is visually confusing.
4. Move the stem to the left and the word choices to the right. This involves less reading for the student.
5. Keep all matching items brief. The student who has comprehension and/or reading problems may not be able to process long, wordy items.
6. Keep items in a logical order. Alphabetize one column of matching items and/or place numbers in sequence. (Wood & Miederhoff, 1986)

The following example incorporates these suggestions:

> DIRECTIONS: Match the permanent wave rod pictures with their names.
>
> Example:
>
> ___ a. Concave
> ___ b. Extra short
> ___ c. Long
> ___ d. Medium
> ___ e. Short
> ___ f. Straight
> ___ g. Thick
> ___ h. Thin
>
> 
>

True-False

The most common use of true-false items is to measure the student's ability to identify the correctness of statements of fact and definitions. Make items more appropriate for all students with the following modifications:

Suggestions for All Students

1. Avoid stating questions in the negative.
2. Avoid tricky items and long, wordy sentences
3. Avoid trivial statements or ones which are not assessing student knowledge.

Suggestions for Mainstreamed Students

1. Allow students to circle the correct answers.
2. Avoid using NEVER, NOT, and ALWAYS in statements. If you must use them, underline and capitalize.
3. Be specific and give examples for answering.
4. Avoid using too many true-false questions at one time. No more than ten per test is suggested.
5. Be specific and give examples for answering. (Wood & Miederhoff, 1986)

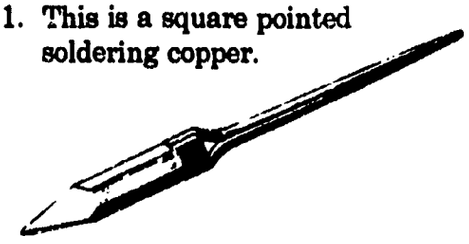
An example of an adapted true-false question follows:

DIRECTIONS: Circle TRUE or FALSE

Example:

TRUE FALSE

1. This is a square pointed soldering copper.



Completion

This type of question is suitable for measuring knowledge of terms, facts, methods or procedures and simple interpretation of data. Since this type of test item requires structured recall, which is a difficult task for many mainstreamed students, it should be using sparingly if at all. In many cases a multiple choice item would be more appropriate for mainstreamed students. The following suggestions will help reduce the complexity of completion questions:

Suggestions for All Students

1. Write simple and clear test items.
2. Avoid the use of statements taken directly from the textbook. Taken out of context, these are frequently too general and ambiguous to be used as questions.
3. A direct question is generally more desirable than an incomplete statement (Gronlund, 1985).

Suggestions for Mainstreamed Students

1. Place possible answers immediately under the blank to reduce memory load.
2. Allow the student to circle the correct answer instead of writing the response in the blank.
3. Provide large blanks for students with handwriting and/or motor control problems.
4. Provide a word bank. (Wood & Miederhoff, 1986)

A sample adapted completion question follows:

> DIRECTIONS: Circle the correct answer.
>
> Example:
>
> 1. What part of the ear is responsible for balance? _____. (organ of corti; semicircular canal; eustachian

Essay

The essay question is used to measure learning that cannot be evaluated by objective test items. Most essay questions require the student to recall the relevant factual information, mentally organize the ideas and write an extensive response. These responses may require skills which are extremely difficult for students with poor comprehension, memory problems, poor organizational abilities and/or deficient writing skills. For these reasons, essay questions should be utilized sparingly, and with some students, not used at all. Suggestions for preparing essay questions more effectively for both regular and mainstreamed students include:

Suggestions for All Students

1. Define any unclear terms.
2. Select questions which correspond to the domain level of the student. For example, define is on the knowledge level, whereas predict is on the application level.
3. Work each essay question so that the student's task is clearly stated.

Suggestions for Mainstreamed Students

1. Make sure the question is written on the student's independent reading level.
2. Use items which can be answered briefly.
3. Be sure that students know the meaning of clue words (e.g., discuss, contrast, compare, criticize, define, describe, list, etc.).
4. Provide an answer check sheet which lists the components expected in the response.
5. Allow students to outline answers or provide an outline for them.
6. Use a limited number of essay questions on each test.
7. Allow the student extra time to write the answers.
8. Allow the student to record the answers rather than write them. (Wood & Miederhoff, 1986)

An essay question incorporating these suggestions may appear as follows:

> DIRECTIONS: DISCUSS how manners affect making and keeping friends.
>
> Use this outline to write your answer.
>
> Example:
>
> I. Bad manners may cause a person to lose friends.
> a. Give an example of bad manners.
> b. What may result if you use bad manners?
>
> II. Good manners make friends easier to find and keep.
> a. Give an example of how good manners make friends.
>
> III. Write a summary sentence telling why manners are important to having friends.

TEST DESIGN

The final aspect of the test which can be easily adapted is the overall test design. Some adaptations which can be made in test design include:

Suggestions for All Students

1. If possible, test, teach, and retest for a final grade.
2. Construct the test in logical sequential order; from simple to complex problems.
3. Use test items which reflect the technique used to teach the material. For example, if the students were taught only to recall facts, avoid essay questions.
4. Type or print legibly.
5. Use large print when available.
6. If hand writing the test, be sure items are listed clearly, concisely, and neatly.
7. Prepare a study guide for the test which matches the design of the actual test.
8. All test items should directly relate to the instructional objectives established for the course or unit.

Suggestions for Mainstreamed Students

1. If the student has difficulty finishing on time, administer an adapted, shortened version of the test. This can be done by circling odd or even numbered questions, or by deciding which questions the student must answer. Another option is "split-halves" testing, where one section of the test is administered one day and one section the next day.
2. If a modified test is necessary for a mainstreamed student, be sure it is designed to resemble the regular student's test. Embarrassment may occur when students are singled out. Pass the tests out at the same time, "dealing" the adapted test for the bottom of the paper stack and the "standard" test from the top.
3. Design the test to reflect the student's knowledge rather than elements such as the ability to follow complicated directions, use or elaborate vocabulary, or ability to work under time constraints.
4. Adjust the readability level of the test to meet the student's needs.
5. Prepare the test in short sections which can be administered individually if necessary.
6. Place one type of question per page; e.g., one page for multiple choice questions and one for essays.
7. Review individually with the student or allow a peer tutor or the resource teacher to review with the student prior to the test.
8. After privately consulting the student and the special education teacher concerning personal testing preferences, design the test to meet these individual needs.
9. If using the chalkboard for tests, erase other material from the board before printing or writing the test in large, legible letters.
10. For students with copying difficulties, avoid lengthy tests.
11. Avoid oral tests and quizzes.
12. Plan to allow handicapped students to take tests in the special education classroom if necessary.
13. Clearly duplicate using black ink if available. Avoid using faded purple dittos with all students, but especially for those students with visual acuity and visual perceptual difficulties.
14. To help students better see a test written on purple dittos, place the test under a yellow sheet of acetate. (Wood & Miederhoff, 1986)

Summary

All children begin school desiring to learn and succeed. Faced with continual academic failure, many students become frustrated and a cycle of failure occurs. Vocational education programs, which stress the development of students'

feelings of self-worth, personal value, as well as preparing the student for the world of work, are ideal settings for an adapted instructional program designed to meet individual needs. An adapted program enhances the mainstreamed students' development of more positive attitudes about life, community, school, family, and self.

References

Gronlund, N. E. (1985). *Measurement and evaluation in teaching*. New York: N. Y.: Macmillan.

Kregel, J. (in press). Career and vocational education. In J. W. Wood, *Mainstreaming: A practical approach for teachers*. Columbus, OH: Charles E. Merrill.

U. S. Department of Education (1987). To assure the free and appropriate public education of all handicapped children. *Ninth Annual Report to Congress on the Implementation of the Education of the Handicapped Act*. Washington, D.C.: U.S. Government Printing Office.

Wood, J. W. (1984). *Adapting instruction for the mainstream*. Columbus, OH: Charles E. Merrill.

Wood, J. W. (1985). Model for adaptations when constructing the teacher-made test. *Statewide institutes for adapting instruction for regular educators* (Project TRAIN). Richmond, VA: Virginia Commonwealth University.

Wood, J. W. and Miederhoff, J. E. (1986). "Procedures for Evaluation and Grading." In *Statewide institutes for adapting instruction for regular educators* (Project TRAIN). Richmond, VA: Virginia Commonwealth University.

Fun and Games in the Newspaper: A New Teaching Tool for Handicapped and Disadvantaged Students

Jill Schwartz Burnham
Gwinnett Vocational Center
100 Cole Drive
Lilburn, Georgia 30247

Introduction

This article will provide vocational teachers an economical, effective and exciting teaching vehicle for lessons in math, science, language arts, motor development, geography, social skills, and countless other areas.

About the Newspaper

Newspapers aren't just for the home/business. They are also for the classroom. Newspapers offer an excellent means for teachers to promote students' developmental needs (social, emotional, physical and intellectual). It also offers an avenue for getting parents involved in the education of their children. Many activities started in the classroom can be reinforced at home by the parents.

Teachers who realize how valuable a tool the newspaper can be suddenly wonder how they ever got along without it — financially as well as educationally. Their only limitation in using the paper is their imaginations.

The important thing to remember is that the newspaper is an inexpensive, flexible workbook and resource for students and teachers to enjoy. Teachers use the newspaper to fit THEIR teaching plans, styles and curriculum.

With the wide variety of educational resources available, why should a teacher use the newspaper in his/her classroom? The answer is simple — newspapers work. The newspaper is an excellent learning tool that appeals to the two or three year old or to the most sophisticated adult. It is versatile, adapting beautifully from a pre-reading source to a medium for teaching computer or calculator usage.

Called the Living Textbook, the newspaper helps bridge the gap between the students' learning environment and the student's real world. Addition-al benefits include:

- It is an adult medium. Children/students of all age and abilities like being seen carrying the newspaper. This makes it an excellent teaching tool for school-aged children as well as preschoolers.
- It talks about what is happening here and now and motivates the students to become involved. Unlike some teaching materials, it is never outdated.
- It bridges the gap between the classroom and the "real world" outside.
- It contains practical vocabulary, words students will use throughout their lives.
- It is economical — can be donated by students' parents and/or is usually available through a Newspaper in Education program at one half the normal newsstand price.

- It can be marked, cut, pasted, colored — activities important to students who learn best by sensory activities.
- It contains history as it happens and deals with reality thus providing motivation for reading, discussion and students' link with the world around them.
- It has the uniqueness of being the most up-to-date social studies and science text available.
- It tells what's going on locally in the students' own town.
- It makes learning activities more attractive to students and teachers.
- It contains something that can be used in every subject area: reading, math, science, language arts, nutrition, motor development, geography, social skills, community helpers, consumer education, ect.
- It is the only text that most of the students will continue reading throughout their lives.

The Newspaper in Education program sponsored by your local newspaper provides educators with all or most of these services:

- Newspapers delivered to your center/school at a reduced rate. This may also include special sections such as advertisement fliers, comics, pictures, food sections, etc.
- Newspaper curriculum materials.
- Educational materials for loan such as filmstrips, teacher's manuals, skill cards, activity sheets, etc.
- The NIE Coordinator can visit your center/school and present workshops on any grade level or subject and make arrangements for newspaper plant tours.
- The NIE Coordinator can offer you individual assistance to help you incorporate the newspaper into your teaching program.
- Free materials such as wirephoto pictures (invaluable for making activities for transition, language arts and social development) and newsprint (which can be used for painting murals, making gift wrap paper, covering tables, practice paper, etc. with younger students).
- Free newsletters filled with newspaper activities for teachers.

Sample activities

Language Arts

Have elementary aged handicapped students cut out letters of the alphabet and then find pictures to correspond with each letter.

Collect newspaper pictures and arrange them in categories such as:

- Articles of clothing
- Things I would find in my school room
- Animals
- Plants
- Things I would buy in a drug store, grocery store, etc.

Have a bulletin board with certain titles, such as furniture, clothes, careers, pets, people, etc., and let the students bring in articles and pictures to fit each category.

Using headlines and ads, show the students the difference between upper and lower case letters.

Cut pictures and works from the newspaper to help with word association.

Have the students make up stories and dictate them to an aide, or teacher to compile a center newspaper. Also have the students draw pictures to take the place of photographs.

Find words in the newspaper which are vocational related. Make a bingo card with 25 spaces (or less, as related to student's abilities). As the teacher calls out the definition of the words on his/her cards, the student will cover the correct answer work/picture on bingo card with chip, paper piece, etc. This can be used for nutrition, interviewing skills, clothing, personal hygiene, child care, world of work, etc.

Use the comic strips to discuss family relationships, nutrition, job related skills, etc.

Social Studies

Bring in pictures of historical sites or points of interest in your community. Have the students learn why these places are important. Maybe a field trip to these places could be arranged.

Have the students bring in pictures which depict their family and family activities.

Lead the class in a discussion on sharing. Show pictures which show people sharing or helping each other.

Have the students read the forecast from today's newspaper. The students may also look at the weather map to find out the weather where grandparents, aunts, cousins live or where they would like to take a trip or vacation.

Science

Study articles on the zoo and animal shelter in your town. If possible plan a field trip to one of the places.

Have the students study a weather map. Have a discussion on why you would want to know what the weather is going to be:

- If you are planning a vacation
- If you work outside
- If you want to grow plants

Discuss how the weather helps or hinders people. Example: a farmer, a pilot, a construction worker, etc.

Have the students think up slogans for a newspaper ad for not playing with matches, talking with strangers, being out alone at night, etc.

Have the students list or tell you as many means of transportation as they can. Have them bring in pictures from the newspaper of the different kinds of transportation from the past, the present and the future. Tell how each method of transportation can be used.

Math

Determine the cost of new/used furniture to furnish an apartment.

Plan a special dinner (birthday, Thanksgiving, Christmas, etc.) Use the grocery ads to shop for the needed items. Figure the total cost of the meal and the cost per person (the dinner is for four people). Determine which store has the lowest prices on the most items.

What would you want with you if you were stranded in a desert island? Have each student pretend he is about to be stranded and has only

enough time to order $10.00 worth of supplies/ items from advertisements in the newspaper. Have the students list their choices and prices.

Using the advertisement section of the newspaper, have the students collect examples of sale ads that list single-item sale and regular prices. Have them clip out the part of each ad that lists the old and new prices and paste or record them on a sheet of paper. Then have them subtract the sale prices from the higher prices and show their computations beside each example.

Use ads and headlines to illustrate size: big-small, short-tall, and long-short.

Have the students find out how economically they could feed their classmates. Give them a list of the ingredients for a cook-out, giving measurements to feed one person. Have the students calculate the amount needed for their entire class. Then have the students "shop" in their newspaper for the least expensive prices for the ingredients. Have them total their expenses. Then have them divide the cost by the number of students in the class to find the cost per student.

Have the students find ads for ten items that cost between 50 cents - ten dollars. Then have them decide which coins and bills they would use to pay for each item.

Have your students find newspaper food ads in which items are featured at so much per pound. Ask them to figure out how much they would pay for half a pound, a quarter of a pound, per ounce and so on.

Prepare a bulletin board or poster of articles relating to the topics which affect the cost of living, such as: prices of clothing, prices of food, prices of housing, job opportunities, etc.

Use the classified ads to compute salary for one day, for one month, and for one year.

Find the average cost of an apartment for one year in the classified ads. Investigate the different kinds of housing available and the differences in cost by area of town, items offered (utilities included, swimming pool, security, etc.), sharing with a roommate, etc.

Using the television schedule in the newspaper, ask the students questions concerning the schedule. Present problems relating to the schedule such as: The news is on at 5:30 p.m. The Bon Jovi video starts at 8:30 p.m. How long is it between the two programs?

Using the recipes in the newspaper, have the students choose several recipes that use fractions and double and halve the ingredients. For recipes that tell the number of servings, have the students increase the ingredients to serve 10, 25, 50 people.

Health and Safety

Let the students clip pictures of things that will keep them clean. Make a bulletin board showing pictures of soap, towels, shampoo, etc.

Have the students find pictures, usually comics, of people who leave work related equipment out and in a place where someone could get hurt.

Use pictures from the sports pages and fashion sections to show good grooming.

Have your students collect articles on child care. Articles can come from medical columns (for information on childhood diseases as well as articles on the psychological aspects of growing up), headlines, advice columns, child care sections, special issues, etc. After discussing the

articles, have the students prepare a babysitter's/parent's guide as a class project.

The leading cause of accidental death among children is poisoning from common household items. Have the students collect newspaper advertisement of poisonous items that can be found around the house. Prepare a bulletin board display/poster using the newspaper advertisements and articles.

Nutrition

Where do the steaks, chops, roasts, and ground meats come from? Prepare a bulletin board-sized outline of a cow. Ask your students bring in ads for beef products from the newspaper's food section. Have the students glue/mount their ads in the proper places on the cow outline.

When studying the four food groups, have the students make placemats from the food groups. Each day they will make a different placement for a specific food group.

Using the food advertisements, have the students make a visual list of the foods they eat each day. Have them check if they are eating well balanced meals.

Career Education

Read the comics and list any jobs mentioned or shown. Have the students choose a job they might like and report what obligations are involved, salary, pros and cons of the job, etc.

Have the students choose a job from the classified ads that they might like to pursue as a career. The students would then prepare a list of items needed to secure such a job (type of education or special training, whether advanced education is necessary, the school to attend, the courses necessary, etc.).

Math Hunt

Find and write the information from today's newspaper for each of these items.

1. The price of this newspaper.
2. A television program that starts at 8:30 p.m.
3. A city where the temperature was over 80 degrees.
4. A number larger than one million.
5. A price of a home over $40,000 but under $70,000.
6. The price of a truck more than five years old.
7. A date before 1975.
8. A winning sports score of more than 20.
9. An item priced over $500 but less than $1000.
10. The number of garage sales advertised in today's paper.

Scavenger Hunt

Using the newspaper, find the following items. (Teacher may read the list or provide pictures or samples of each item. This encourages listening skills, eye-hand coordination, etc.)

1. a picture of an animal
2. the letters in your name
3. the price of something 99 cents
4. a picture of a piece of fruit
5. movie theater listings
6. a NIKE tennis shoe
7. a picture of a child
8. Garfield
9. an auto tire
10. a container of milk
11. someone playing football, baseball or basketball
12. a car
13. a house
14. a map

Peer Tutoring and Task Analysis Applied to Health Occupations

Karen H. Jones
Department of Vocational Education
624 Aderhold Hall
University of Georgia
Athens, GA 30602
Charlotte A. Rosebrook
LPN Instructor

Introduction

Both peer tutoring and task analysis have been used by vocational teachers to successfully work with special needs students. When combined, the two methods of teaching can compliment each other to facilitate the learning of skills needed in vocational courses. A unit on Vital Signs from the area of health occupations is presented as one example which shows the integration of the two teaching methods for use with special needs students.

Peer Tutoring

The concept of peer tutoring has numerous benefits for special needs students (Maheady, Sacca, Harper, 1988, Gearheart, Weishahn, Gearheart, 1988, Sarkees, Scott, 1985). It has been demonstrated that peer tutoring programs offer academic support, role models, and friendship to the special needs student in addition to providing valuable assistance to teachers (Maudell, Fiscus, 1981).

Vocational teachers frequently say they do not have adequate time to assist handicapped students with the needed amount of instruction and still work fairly with the rest of a class. In cases like this, peer tutoring, whether same age or cross-age, can be a valuable asset to the teacher.

Peer tutoring is most effective when the teacher introduces new concepts to the tutors. Then the tutors provide review, remediations, and, in some cases, evaluation.

Further investigation of the basic structure of different peer tutoring programs may be of value to the reader.

Task Analysis

Special needs students are sometimes unable to complete a task or assignment. Task analysis, which is based on the assumption that the student may have difficulty with one or more component or subpart of the task, is one effective technique for vocational educators to utilize. Pasanella and Volkmore (1981) define task analysis as "the process of isolating, describing and sequencing all the essential subtasks which, when the child has mastered them, will enable him or her to perform the objective." In brief, the vocational area should be blocked, each area broken down into specific tasks, and the tasks broken down into a series of small steps. The instructor can then write complete, concise directions for each step. Because only one step of a task is presented at a time, students can practice each step until they have succeeded. New steps are not presented to the student until they have successfully accomplished one. For a more detailed description of task analysis, refer to Sarkees and Scott (1985) Vocational Special Needs.

An Exemplary Example

As demonstrated in the Vital Signs unit, peer tutoring and task analysis can be combined to produce an extremely effective teaching technique. Special needs students are an increasing population in the postsecondary school setting. One major barrier for these

students is that many programs are sequenced. For example, in a sequenced four course program, each course is offered only once annually. Therefore, open-entry, open-exit is not possible. Students who learn slower than other students may find themselves failing out of a program before they have the opportunity to progress enough to complete the requirements. The Health Occupations instructor wanted to address this problem. It was apparent that special needs students could learn the skills to become nurse assistants but it would take extended time on the part of the instructor. It was perceived that peer tutors could be utilized. The decision was made to combine that technique with task analysis for a unit in health occupations.

In the sample unit plan for vital signs that follows, there are several items that bear pointing out. First, it will be apparent to the reader that there is much work involved in the preparation of daily lessons that include the combined techniques. The work will pay many dividends, though, as the unit can be used with many students and for as long as needed. Second, task analysis allows the instructor to sequence a task in small steps. The lesson plan on measuring oral temperature for day 2 has an example of how a rating scale can be used to evaluate specific skills. The competency level is defined by the instructor for the peer tutor. The tutor is to rate each subtask the student performs on a scale of 0 to 4. The student and peer tutor are informed that a score of 3 or 4 is needed to move to the next step. Third, each step on the evaluation checklist for measuring oral temperature is weighted according to the importance the instructor felt it had in relation to other steps. Rather than making a broad statement on measuring oral temperature, the student, peer tutor, and instructor can identify specific strengths and weaknesses within each task. The final point is that the entire unit is hands-on. There are no academic skills involved that are not inherent to the immediate task. Roman numerials are used within the unit to coorelate objectives, procedures, materials, and evaluations. For example, I. Procedures, I. Materials, I. Objectives, and I. Evaluations relate to each other as do II. Procedures, II Materials, II. Objectives, and II Evaluations and so on.

Tutors

Students used as peer tutors will have successfully completed the unit described and performed the steps involved to accomplish all the tasks. Tutors will be trained in observation techniques, evaluating performance tests, teaching lesson formats, and the use of performance check lists. He/she will have a good rapport with other students and enjoys the opportunity to develop a closer working relationship with them. Several peer tutoring sessions will be observed by the instructor to implement the tutoring procedure.

Tutors will have a lesson format of the tasks to be reviewed, the procedures to follow, and a scale used prior to the final check point which will rate the level of performance. The tutors lesson format will include cognitive materials, among with activities for psychomotor skills. He/she will repeat the procedures until a rating of three or four is accomplished by the student.

The scale helps to determine weak areas of the student. The terminal performance check will be administered by the instructor.

Peer tutors are evaluated by the following Peer Tutor Evaluation Sheet. He/she evaluates themselves and then the instructor evaluates them. The points earned for each tutoring session may be applied as a test score.

PEER TUTOR EVALUATION SHEET

Tutor:_____

Scale:_____

5 = excellent
3 = adequate
1 = poor

DIRECTIONS: Student circles rating; teacher underlines rating.

INDICATORS:

1.	Respects rights of others	5 4 3 2 1
2.	Values time	5 4 3 2 1
3.	Takes pride in work, neat	5 4 3 2 1
4.	Follows directions	5 4 3 2 1
5.	Takes care of equipment	5 4 3 2 1
6.	Works well with others	5 4 3 2 1
7.	Maintains positive attitude toward assignment	5 4 3 2 1
8.	Works safely	5 4 3 2 1
9.	Asks for help when needed	5 4 3 2 1
10.	Reports to teacher on progress of student	5 4 3 2 1

Tutor totals:_____
Teacher totals:_____

Tutor Signature

_____

Teacher Signature

_____

Unit Plan

Program Area: Health Occupations

Unit Title: Vital Signs

Overall Goal: To develop a unit utilizing task analysis and peer tutors to assist students with learning disabilities.

Class Description: The class is made up of regular (two-hour block) Health Occupations students that have a variety of abilities. Students with learning disabilities are mainstreamed into the program. These students with learning disabilities have average intelligence (I.Q. 100). They experience difficulty with reading, spelling and math. In addition, they are frequently slow in completing their work. This group of students do well with performance, but cannot relate psychomotor skills with cognitive materials. They require a book with a lower reading level. Written tests need to be modified and/or read to them.

Texts: Rambo & Wood, *Nursing skills for clinical practice.* (1982). Philedelphia, W. B. Saunders Company.

Health assistant, (1980). Delmar Publishers, Inc.

Lesson Format: Each lesson is followed by a task analysis, peer tutor lesson, performance evaluation check list, and, where required, instructional aids.

UNIT: Vital Signs

LESSON: The Student will read a clinical thermometer to the nearest two-tenths of a degree. Lesson 1 Day 1

#	OBJECTIVES	PROCEDURE	MATERIALS	EVALUATION

I.	The student will be able to define body temperature.	Definition:
		• Importance of measurement
		• Factors influencing body temperature
		  • Increase
		  • Digestion
		  • Emotions, excitement
		  • Environmental temperatures
		  • Illness - infections
		  • Decrease
		  • Some illness
		  • Fasting
		  • Sleep
		  • Depression
		  • Exposure to cold temperatures
			Chalkboard	Written unit & performance tests

II.	The student will be able to identify the different types of thermometers	Types of thermometers
		• Electronic
		• Disposable
		• Clinical Types
		  • Oral
		  • Security (Stubby)
		  • Rectal
		
		(Discussion: Why is it important to know the different types of thermometers?)
			Overhead Projector Transparencies
			• Electronic Thermometers
			• Disposable Thermometers
			• Transparencies showing
			  • Oral Thermometer
			  • Security Thermometer
			  • Rectal Thermometer
			• Three Thermometer	

#	OBJECTIVES	PROCEDURE	MATERIALS	EVALUATION

III.	The student will be able to identify the parts of the clinical thermometer.	Parts of clinical thermometer
		• Stem
		• Bulb
		• Lens
		• Mercury
		• Constriction
		• Scale
			Overhead Projector Trans-parencies
			• Structure of thermometer to explain A - F
			  • Container of mercury
			  • Teacher made poster explaining A-F
			  • Handout "Parts of the thermometer"
				Given the handout on parts of the thermometer, the student will label parts

IV.	The student will be able to detect the mercury in the thermometer.	Describe where and how to find the mercury. • Hold eye level • Slightly rotate	Overhead Projector • Transparency (same as III-A) • Poster (same as III)	The student will show where the mercury ends.

V.	The student will be able to read the scale on a thermometer in the Fahrenheit scale.	Scale types
		• Fahrenheit
		• Centigrade
		• Reading the scale
		  • Whole numbers
		  • Decimals
		  • Arrow
		• Writing the temperature reading
			Teacher made poster showing scale	Worksheets at the completion of this lesson.

VI.		Summary - review questions over lesson		

TASK ANALYSIS - READ CLINICAL THERMOMETER

CRITERIA:

Student to read a clinical thermometer with 100% accuracy as observed by teacher or peer tutor.

PREREQUISITES:

A. Recognize parts of thermometer
B. Able to use whole numbers and decimals
C. Has marked thermometer readings correctly on paper

EQUIPMENT:

Thermometers Paper and pencil/pen

READ CLINICAL THERMOMETER

1. Hold thermometer by stem end.
2. Hold thermometer at eye level.
3. Find the solid column of mercury by slightly rotating. (May be given a piece of dark construction paper to place under thermometer to aid in detecting mercury.)
4. Read the thermometer at the point where the mercury line ends.
5. Each long line on the thermometer is read as one degree, except the long line at 98.6 F, which is normal body temperature.
6. Each short line represents .2 (two-tenths) of a degree.
7. Temperature is always recorded to the nearest two-tenths of a degree.

PEER TUTOR LESSON FORMAT - READING CLINICAL THERMOMETER

STUDENT:

PEER TUTOR:

SCALE FOR LEVEL OF PERFORMANCE:

0 = none 1 = poor 2 = fair 3 = good 4 = excellent

DIRECTIONS: On the following components, rate the student's level of competency by using the values of the above scale. Return this sheet to the teacher when completed.

#	TASK	PROCEDURE	SCALE
1.	Define body temperature	Tutor will give definition. Student will repeat definition and write the definition.	0-1-2-3-4
2.	Identify types of thermometers	Tutor explains different thermometers. Student repeats. Tutor identifies thermometers. Student identifies thermometers to tutor.	0-1-2-3-4
3.	Identifies bulb & stem portion of the thermometer	Tutor uses handout to label bulb & stem portion of thermometer. Student will label bulb and stem portions.	0-1-2-3-4
4.	Demonstrate the ability to write whole numbers and decimals	Using transparency or poster, tutor will read various settings to student. Student will repeat. Tutor will write readings correctly. Student will write various readings for tutor to check.	0-1-2-3-4

#	TASK	PROCEDURE	SCALE
5.	Complete handout "thermometer worksheet"	Tutor will explain how to complete worksheet. Student to complete by placing correct responses in "A" "B" or "C". Tutcr checks. Students make corrections.	0-1-2-3-4
6.	Read mercury column	Using real thermometers, tutor will show student how to locate mercury. Student will show tutor where the mercury ends.	0-1-2-3-4
7.	Record readings	Tutor will read thermometer & show student how to write the reading. Student will read thermometer & write reading. Tutor checks. Tutor reinforces student. Tutor reports to teacher with completed sheet.	0-1-2-3-4

UNIT: **Vital Signs**

LESSON: Measuring an oral temperature accurately. **Lesson 2 Day 2**

#	OBJECTIVES	PROCEDURE	MATERIALS	EVALUATION
I.	The student will identify three methods of measuring body temperature.	*Review from previous day concerning body temperature.* Methods • Orally • Rectally • Axillary	Chalkboard	Written unit & performance tests
II.	The student will be able to detect body temperature and conclude if the reading is normal or abnormal.	Body temperature • Normal body range (97.6 - 99.) • Low grade fever (99.3) • Fever (above 100) • Subnormal (below 97) (Discussion: Why is it important to know about body temperature?)	Chalkboard	
III.	The student will explain the proper procedure for caring for a thermometer.	Care of thermometer • Safety • Storage possibilities • Solution (Antiseptic) to disinfect	Thermometer Thermometer holder Cotton balls Alcohol Tissues	Oral Review

#	OBJECTIVES	PROCEDURE	MATERIALS	EVALUATION
IV.	The student will demonstrate the correct procedure for measuring an oral temperature.	Proper procedure (demonstration)	Themometer Themometer holders or tray of clean thermometers Classroom clock Tissue paper Pencil Overhead transparency "Wrist type motion" & "Placement under tongue"	Evaluation sheet
V.		Summary - review questions over lesson		
VI.		Practice session		

TASK ANALYSIS - MEASURING ORAL TEMPERATURE

CRITERIA:

- Evaluation check list (attached)

PREREQUISITES:

A. Ability to read thermometer scale
B. Principles of medical asepsis (handwashing and cleaning thermometer)
C. How to identify patient

EQUIPMENT:

Oral thermometers
Thermometer holder with disinfectant solution
Tissues
Container for used tissues
Watch with second hand
Paper and pencil/pen

MEASURE ORAL TEMPERATURE

1. Assemble equipment and supplies
2. Wash hands
3. Identify patient, explain procedure
4. Ask if eaten, had hot or cold fluids, or smoked in the past 15 minutes
5. Remove clean thermometer by stem end
6. Rinse thermometer with cold water
7. Wipe thermometer with tissue
8. Read the thermometer
9. If necessary, shake mercury down below 96 F
10. Insert bulb under the patient's tongue, toward the side of the mouth
11. Ask patient to hold it in place with the lips; caution against biting it
12. Leave the thermometer in place three minutes
13. Remove the thermometer
14. Hold it by the stem and wipe toward bulb with a tissue
15. Read the thermometer
16. Record the reading on notepaper
17. Rinse the thermometer
18. Return to disinfectant solution
19. Check patient and leave patient comfortable
20. Wash hands
21. Report any abnormal reading to your supervisor

PEER TUTOR LESSON FORMAL - MEASURE ORAL TEMPERATURE

STUDENT:

PEER TUTOR:

SCALE FOR LEVEL OF PERFORMANCE:

0 = none 1 = poor 2 = fair 3 = good 4 = excellent

DIRECTIONS: On the following components, rate the student's level of competency by using the values of the above scale. Return this sheet to the teacher when completed.

#	TASK	PROCEDURE	SCALE
1	Review the method of measuring body temperature	Tutor repeats methods. Student repeats & writes them in notes. Tutor identifies areas. Student identifies areas on mannequin.	0-1-2-3-4
2	Review the normal range of body temperature	Tutor repeats normal range. Student repeats. Tutor shows range on poster thermometer. Student shows tutor on poster thermometer.	0-1-2-3-4
3	Demonstrate cleaning & storage procedure for thermometer	Tutor demonstrates procedure. Student will show tutor how to clean thermometer & fix thermometer holder with proper solution to disinfect the thermometer.	0-1-2-3-4

#	TASK	PROCEDURE	SCALE
4	Using task analysis, will follow procedure for measuring an oral temperature	Tutor will go step by step in the procedure. Student will repeat. Tutor will measure another student's temperature. Student will measure another student's temperature. Student reads thermometer. Tutor checks reading. Student writes reading. Tutor checks. Tutor reinforces student. Tutor reports to teacher with completed sheet.	0-1-2-3-4

EVALUATION CHECK LIST - MEASURING ORAL TEMPERATURE

STUDENT: **DATE:**

EVALUATED BY:

DIRECTIONS: After sufficient practice, the evaluator will use the following criteria to rate your performance.

#	MEASURING ORAL TEMPERATURE	POINTS	POINTS EARNED
1.	Assembles equipment	4	
2.	Washes hands	5	
3.	Identifies patient, explains procedure	8	
4.	Questions patient on eating, drinking, or smoking	6	
5.	Rinses and wipes thermometer	4	
6.	Reads thermometer, shakes mercury down	8	
7.	Inserts proper place	6	
8.	Instructs patient on holding	12	
9.	Leaves in place 3 minutes	6	
10.	Removes, wipes, holds correctly	6	
11.	Reads correctly	8	
12.	Records correctly	8	
13.	Cleans correctly	12	
14.	Replaces equipment	4	
15.	Washes hands	5	
16.	Recognizes abnormal readings	6	
	TOTALS	100	

UNIT: Vital Signs

LESSON: Measure Radial pulse within 2 beats per minute

Lesson 3 Days 3 & 4

#	OBJECTIVES	PROCEDURE	MATERIALS	EVALUATION

I.	The student will be able to define pulse.	Briefly explain circulation of blood
		
		Definition:
		• Observations when checking
		  • Rate: beats/min.
		  • 2. Rhythm: Reg./irreg.
		  • Volume: strength
		• Why is above important?
			Overhead projector
			*TSP "Circulation of blood"
			
			Chalkboard
				Written unit & performance tests

II.	The student will be able to interpret normal pulse rate.	Rates
		• Adults 72 - 80
		• Variation for age group
		  • Infant: 130 - 140
		  • 8 to 15 years: 80 - 86
		  • Old age: 60-70
			Chalkboard	

III.	The student will be able to list factors that influence pulse rate.	Factors influencing pulse rate • Sex • Exercise • Posture • Digestion • Emotion • Disease • Physique	Chalkboard	

#	OBJECTIVES	PROCEDURE	MATERIALS	EVALJATION
IV.	The student will be able to label eight pulse sites.	Pulse sites location • Temporal - tem' por al • Carotid - ka-rot' id • Apical - ap' i kal • Brachial - bra' ki-al • Radial - ra' di-al • Femoral - fem' oral • Popliteal - pop-lit'e al • Pedal - ped' l	Teacher made poster Chalkboard - (divide words into syllables)	Handout "Label pulse sites"
V.	Using the syllables on the board, the student will pronounce the names of pulse sites and point out locations.	**Activity:** The teacher will pronounce the pulse sites and point out location and the students will repeat them and point them out. **Activity:** The teacher will demonstrate an exercise skit to learn pulse sites. Then teacher and students will go through the exercise skit together.		This is to aid in learning to spell the words correctly.
VI.	The student will be able to distinguish the most common pulse site used to measure pulse.	Common pulse site to measure pulse • Radial • Location • How to locate • Method to use **Activity:** At this point, students will locate their own radial pulse.	*TSP "Radial Pulse site"	Written unit & performance tests

#	OBJECTIVES	PROCEDURE	MATERIALS	EVALUATION
VII.	The student will be able to measure the radial pulse within $\pm$ 2 beats per minute.	Procedure for measuring the radial pulse Activity: Students will work in groups of two, one student will measure the pulse rate of the partner and write the rate on paper. Then the students will change roles and the other student's rate will be counted and written on paper.	Classroom clock with second hand Paper Pencil	Evaluation sheet. Final evaluation will be at the end of the unit, allowing the student more time to practice. Will check written radial pulse of students.
VIII.		Summary - review questions over lesson		
IX.		Practice session		

UNIT: **Vital Signs**
LESSON: Measure the Apical pulse with ± beats per minute

Lesson 4 Day 5

#	OBJECTIVE	PROCEDURE	MATERIALS	EVALUATION
I.	The student will define an apical pulse.	Definition	Chalkboard Torso	Written Unit and performance tests

II.	The student will determine the location of the apical pulse.	Location of apical pulse
		• How to locate
		• Importance of counting
		  • Arrythmia
		  • Conditions
		• Pulse deficit
			TSP "Location of apical pulse"
			
			Overhead projector*	

III.	The student will discriminate between various heart sounds.	Heart sounds • Sounds caused by • Sounds are like **Activity:** Students to listen to tape on "heart sounds"	TSP "Circulation" & "Heart Chambers"* Tape player Tape "Heart Sounds"	
IV.	The student will be able to associate the instrument utilized to measure an apical pulse.	Instrument: Stethoscope • Parts • Cleaning	Chalkboard Stethoscope Cotton balls Alcohol	

#	OBJECTIVE	PROCEDURE	MATERIALS	EVALUATION
V.	Given the necessary equipment, the student will be able to demonstrate the procedure to measure the apical pulse.	Procedure Activity: Given a stethoscope, each student will locate their own apical pulse and count the beats. Students will work together in groups of two and locate the apex of the heart. A student will count the apical pulse of a classmate and record the rate. Students will then reverse roles.	Paper Pencil	
VI.		Summary - review questions over lesson		
VII.		Practice session		

TASK ANALYSIS - MEASURING APICAL PULSE

CRITERIA:

Evaluation check list (attached)

PREREQUISITES:

A. Principles of medical asepsis (handwashing)
B. Ability to locate apical pulse area
C. How to use and clean stethoscope

EQUIPMENT:

Stethoscope
Watch with second hand
Paper and pencil/pen
Cotton ball wet with alcohol or alcohol sponge

MEASURE APICAL PULSE

1. Assemble equipment and supplies
2. Wipe earpieces and the disk of the stethoscope with alcohol sponge
3. Wash hands
4. Identify patient and explain procedure (it is best to say, "I am going to listen to your hear beat".)
5. Provide privacy for patient
6. Uncover left side of the patient's chest
7. Locate apical pulse
8. Place the stethoscope tips in your ears
9. Place the disk of the stethoscope over the apical region and listen for the heart sounds
10. Count the apical pulse for one full minute (count each lubb-dubb as one beat)
11. Note the rate, rhythm, and volume
12. Record the reading, noting rate, rhythm, and volume
13. Check the patient and leave the patient comfortable
14. Clean the earpieces and disk of the stethoscope with a alcohol sponge
15. Replace equipment
16. Wash hands
17. Report any unusual observations or abnormalities to your supervisor

PEER TUTOR LESSON FORMAT - MEASURE APICAL PULSE

STUDENT:

PEER TUTOR;

SCALE FOR LEVEL OF PERFORMANCE;

0 = none 1 = poor 2 = fair 3 = good 4 = excellent

DIRECTIONS: On the following components, rate the student's level of competency by using the values of the above scale. Return this sheet to the teacher when completed.

#	TASK	PROCEDURE	SCALE
1.	Define apical pulse	Tutor will give definition. Student will repeat & write the definition.	0-1-2-3-4
2.	Determine location of apical pulse	Tutor will use transparency & explain to student. Student will show tutor location. Tutor will identify area on self. Student will identify area on self.	0-1-2-3-4
3.	Associate instrument to measure apical pulse	Tutor will review parts of the stethoscope. Student will repeat. Student will show tutor parts of the stethoscope.	0-1-2-3-4
4.	Demonstrate cleaning procedure of stethoscope	Tutor demonstrates technique for cleaning stethoscope. Student shows tutor.	0-1-2-3-4

#	TASK	PROCEDURE	SCALE
5.	Will go through procedure for measuring apical pulse	Using task analysis, tutor will go through procedure. Student will show tutor proper procedure.	0-1-2-3-4
		Student will count rate. Tutor checks. Tutor reinforces student. Tutor reports to teacher with completed sheet.	

EVALUATION CHECK LIST - MEASURING APICAL PULSE

STUDENT: DATE:

EVALUATED BY:

DIRECTIONS: After sufficient practice, the evaluator will use the following criteria to rate your performance.

#	MEASURING APICAL PULSE	POINTS	POINTS EARNED
1.	Assembles equipment	4	
2.	Cleans stethoscope	5	
3.	Washes hands	5	
4.	Identifies patient, explains procedure	8	
5.	Provides privacy	10	
6.	Locates apical pulse	10	
7.	Places disk of stethoscope at correct area	10	
8.	Counts one minute	15	
9.	Records rate, rhythm, and volume	15	
10.	Checks patient for comfort	4	
11.	Cleans stethoscope	5	
12.	Washes hands	5	
13.	Reports unusual observation	4	
	TOTALS	100	

PEER TUTOR TEST FORMAT - MEASURE RADIAL PULSE

STUDENT:

PEER TUTOR:

SCALE FOR LEVEL OF PERFORMANCE:

0 = none 1 = poor 2 = fair 3 = good 4 = excellent

DIRECTIONS: On the following components, rate the student's level of competency by using the values of the above scale. Return this sheet to the teacher when completed.

#	TASK	PROCEDURE	SCALE
1.	Define pulse	Tutor defines. Student repeats & writes definition.	0-1-2-3-4
2.	Review observations to be made	Tutor stresses rate, rhythm, & volume. Student repeats & writes the words. Tutor explains meaning of each. Student repeats & writes the meaning of each.	0-1-2-3-4
3.	Interpret normal adult rates per minute	Tutor tells student normal rates. Student repeats & writes the rates.	0-1-2-3-4

#	TASK	PROCEDURE	SCALE
4.	Locate 3 of the 8 pulse sites	Tutor says words: • radial (ra di-al) • apical (ap i kal) • brachial (bra kl-al). Student repeats. Tutor spells the words. Student spells & writes the words. Tutor identifies areas on pulse site handout & poster. Student labels handout. Tutor checks.	0-1-2-3-4
5.	Loca. radial pulse site (may use steps in task analysis)	Tutor shows student how to locate. Student locates radial pulse. Tutor counts student pulse. Student counts own pulse. Student counts pulse of another student. Tutor checks. Tutor reinforces student. Tutor reports to teacher with completed sheet.	0-1-2-3-4

EVALUATION CHECK LIST - MEASURING RADIAL PULSE

STUDENT: **DATE:**

EVALUATED BY:

DIRECTIONS: After sufficient practice, the evaluator will use the following criteria to rate your performance.

#	MEASURING RADIAL PULSE	POINTS	POINTS EARNED
1.	Assemble equipment	5	
2.	Washes hands	5	
3.	Identifies patient, explains procedure	6	
4.	Places arm in position	8	
5.	Counts one minute	8	
6.	Correctly counts to $\pm$ 2 beats per minute	15	
7.	Notes rhythm & volume	10	
8.	Records correctly	10	
9.	Checks patient for comfort	8	
10.	Washes hands	5	
11.	Reports unusual observations	12	
	TOTALS	100	

UNIT: Vital Signs
LESSON: Count respirations within ± 1 respiration per minute

Lesson 5 Day 6

#	OBJECTIVES	PROCEDURE	MATERIALS	EVALUATION

I.	The student will be able to define respiration.	Definition:
		• Location of lungs
		• How they function
		  • Inspiration
		  • Expiration
			Chalkboard
			
			Torso
			
			Teacher made poster
				Written unit & performance tests

II.	The student will be able to list factors that influence respirations.	Factors influencing respirations • Sex • Exercise • Digestion • Emotions • Drugs • Cold • Pain, fever, shock		
III.	The student will be able to detect normal respirations.	Description • Quiet • Even • Unlabored		
IV.	The student will be able to interpret normal respiration rates.	Rates • Adults 14 - 20 • Varies with age		

#	OBJECTIVES	PROCEDURE	MATERIALS	EVALUATION
V.	The student will be able to measure the respirations within ± 1 respiration per minute.	Procedure for measuring respirations • Do not tell patient your are counting • Best time to count is when you have hand at pulse site • Observe patient's chest and count for one minute the number of times it rises and falls (Remember one inspiration and one expiration counts as one respiration) • If difficult, can place the patient's arm across his chest and hold his wrist (This way you will feel the chest and abdomen rise as the patient breathes) • After counting one full minute, write the rate on paper. Activity: Students will work in groups of two. One student will play the roles as patient. The other student will count the radial pulse and without moving the hand from the radial pulse site, they will count the respirations. Then each student will reverse roles.	Classroom clock with second hand Paper Pencil	
VI.		Summary - review questions over lesson		
VII.		Practice session		

TASK ANALYSIS - MEASURING RESPIRATIONS

CRITERIA:

Evaluation check list (attached)

PREREQUISITES:

A. Principles of medical asepsis (handwashing)
B. Ability to measure radial pulse

EQUIPMENT:

Watch with second hand
Paper and pencil/pen

MEASURE RESPIRATIONS

1. Assemble equipment
2. Wash hands
3. Identify patient
4. Count the radial pulse and leave hand in position on the pulse site
5. Count the number of times the chest rises and falls for one minute (do not let the patient aware you are counting respirations)
6. Count each expiration and inspiration as one respiration
7. Note the depth (character) and rhythm (regularity) of the respirations
8. Record rate, rhythm, and character
9. Check patient and leave patient comfortable
10. Wash hands
11. Report any unusual observations to your supervisor

PEER TUTOR LESSON FORMAT - COUNT RESPIRATIONS

STUDENT:

PEER TUTOR:

SCALE FOR LEVEL OF PERFORMANCE:

0 = none 1 = poor 2 = fair 3 = good 4 = excellent

DIRECTIONS: On the following components, rate the student's level of competency by using the values of the above scale. Return this sheet to the teacher when completed.

#	TASK	PROCEDURE	SCALE
1.	Define respirations	Tutor defines. Student repeats & writes definition.. Tutor explains inspiration & shows student. Student pronounces the word. Student writes word. Student shows tutor. Tutor explains expiration & shows student. Student pronounces the word. Student writes word. Student shows tutor.	0-1-2-3-4
2.	Describe normal respirations	Tutor describes (even quiet, unlabored). Student repeats & writes description.	0-1-2-3-4

#	TASK	PROCEDURE	SCALE
3.	Interpret normal respiration rate	Tutor tells student 14-20 per min. Student repeats rate. Student writes rate. Tutor checks.	0-1-2-3-4
4.	Procedure for counting respirations	Using task analysis, tutor will go through procedure. Student will repeat procedure to tutor. Student will show tutor proper procedure by counting respirations of another student. Tutor checks. Tutor reinforces student. Tutor reports to teacher with completed sheet.	0-1-2-3-4

EVALUATION CHECK LIST - MEASURING RESPIRATIONS

STUDENT: **DATE:**

EVALUATED BY:

DIRECTIONS: After sufficient practice, the evaluator will use the following criteria to rate your performance.

#	MEASURING RESPIRATIONS	POINTS	POINTS EARNED
1.	Assembles equipment	5	
2.	Washes hands	5	
3.	Identifies patient	5	
4.	Positions patient	5	
5.	Leaves hand on pulse site	10	
6.	Counts one minute	7	
7.	Keeps patient unaware of counting activity	10	
8.	Obtains correct count on $\pm$ 1 breath/min.	15	
9.	Records correctly	10	
10.	Records rhythm & character	10	
11.	Checks patient for comfort	5	
12.	Washes hands	5	
13.	Reports unusual observations	8	
	TOTAL	100	

UNIT: Vital Signs

LESSON: Measure the blood pressure within ± 2 mm Hg of actual mercury reading. **Lesson 6 Day 7 & 8**

#	OBJECTIVES	PROCEDURE	MATERIALS	EVALUATION
I.	The student will be able to define blood pressure.	Definition	Chalkboard	Written unit & performance tests
II.	The student will be able to detect a normal range for blood pressure.	Normal values • Systolic range • Diastolic range		

III.	The students will define terms associated with high and low blood pressure.	Terms
		• Hypotension
		• Hypertension
		  • Importance of detecting early
		  • Importance of treatment		

IV.	The student will be able to list factors that influence blood pressure.	Factors influencing blood pressure
		• Increase
		  • Excitement
		  • Anxiety
		  • Drugs (stimulants)
		  • Exercise
		  • Eating
		• Decrease
		  • Rest, sleep
		  • Depressant
		  • Excessive loss of blood		

#	OBJECTIVES	PROCEDURE	MATERIALS	EVALUATION
V.	The student will be able to identify the equipment needed to measure blood pressure.	Equipment • Stethoscope • Sphygmomanometer (pronounced sfig-mo-ma-nah'-me-ter) • Parts of sphygmomanometer	Stethoscope Aneroid Sphygmomanometer TSP "Mercury Sphyg-momanometer"	
VI.	The student will interpret the scale on the gauge of an aneroid sphygmomanometer.	Reading the scale • Needle on zero - goes to 300 • Each line represents 2 mm Hg. **Activity:** The teacher will put the needle on dial at certain points on scale and each student will have opportunity to determine reading. **Activity:** Each student will be given a handout of a dial of the aneroid sphygmomano-meter. Various readings are marked with an arrow and the student will write in the reading that the arrow points to.	Teacher made poster "Dial" Handout "Reading Sphygmomanometer"	After students have completed, teacher will read aloud the correct ratings. Students will be able to see any mistakes made. Using dual stethoscope the teacher will help students locate systolic & diastolic sounds.

#	OBJECTIVES	PROCEDURE	MATERIALS	EVALUATION
VII.	The student will demonstrate the correct procedure for measuring blood pressure.	Procedure **Activity:** Students will divide into groups of two and practice measuring each other's blood pressure.	Cotton Balls Alcohol Paper Pencil *TSP "Brachial Artery" *TSP "Tube tangled" *TSP "Where first sound heard" *TSP "Where sounds disappear" Dual stethoscope	
VIII.		Summary - review questions over lesson		
IX.		Practice session.		

TASK ANALYSIS - MEASURING BLOOD PRESSURE

CRITERIA:

Evaluation check list (attached)

PREREQUISITES:

A. Principles of medical asepsis (handwashing)
B. Read a mercury sphygmomanometer
C. Locate brachial pulse site
D. Understand parts of the sphygmomanometer
E. Understand the use of fractions

EQUIPMENT:

Stethoscope
Sphygmomanometer
Cotton ball wet with alcohol sponge
Paper and pencil/pen

MEASURE BLOOD PRESSURE

1. Assemble equipment
2. Clean earpieces and disk of stethoscope with alcohol sponge
3. Wash hands
4. Identify patient and explain procedure
5. Position arm (level of heart) so that it is supported and comfortable (palm of hand should be up)
6. place the deflated cuff around the upper arm about 1-2 inches above the elbow over the brachial artery (velcro material should be away from the skin)
7. Cuff should be smooth and even, not pulled too tightly
8. Locate brachial artery with your fingertips
9. Place the stethoscope over the artery
10. Check to make sure that the tubing are separated and not tangled together
11. Close the valve on the rubber bulb by turning it in a clockwise direction
12. Inflate the cuff to 160 mm HG or above an audible systolic pressure
13. Open the bulb valve slowly and let the air escape gradually
14. When the first sound is heard, note the reading on the manometer (this is systolic pressure)
15. Continue to release the air until there is an abrupt change of the sound (watch the reading on the manometer
16. Continue until the sound changes and becomes faint and then no longer heard, noting the reading on the manometer (this is the diastolic pressure)
17. If you need to repeat the procedure, deflate the cuff completely, wait one minute and repeat the procedures
18. Record the reading which is written as a fraction (systolic) (diastolic)
19. Remove the cuff. Expel any remaining air by squeezing it
20. Clean earpieces and disk of the stethoscope with alcohol sponge
21. Check patient and leave patient comfortable
22. Replace equipment
23. Wash hands
24. Report any abnormal readings to your supervisor

PEER TUTOR LESSON FORMAT - MEASURE BLOOD PRESSURE

STUDENT:

PEER TUTOR:

SCALE FOR LEVEL OF PERFORMANCE:

0 = none 1 = poor 2 = fair 3 = good 4 = excellent

DIRECTIONS: On the following components, rate the student's level of competency by using the values of the above scale. Return this sheet to th teacher when completed.

#	TASK	PROCEDURE	SCALE
1.	Define blood pressure	Tutor will define. Student will repeat & write definition. Tutor will explain systolic. Student will pronounce. Student will write. Tutor will explain diastolic. Student will pronounce. Student will write. Tutor explains B.P. written as fraction. Student writes systolic/diastolic. Tutor checks.	0-1-2-3-4
2.	Detect normal range for blood pressure	Tutor explains range for systolic. Student repeats & writes. Tutor explains range for diastolic. Student repeats & writes. Tutor writes range as a fraction. Student writes as fraction. Tutor checks.	0-1-2-3-4

#	TASK	PROCEDURE	SCALE
3.	Define terms associated with blood pressure	Tutor spells hypertension. Student spells & writes word. Tutor defines hypertension. Student repeats & writes definition. Tutor spells & writes word. Tutor defines hypotension. Student repeats & writes definition. Tutor checks.	0-1-2-3-4
4.	Identify equipment to measure blood pressure	Tutor will review stethoscope. Student will repeat. Tutor will explain parts of the sphygmomanometer, pronounced sfig-mo-ma-nah'me-ter. Student repeats & writes word. Student repeats parts.	0-1-2-3-4
5.	Interpret gauge of an aneroid sphygmomanometer	Tutor explains gauge with teacher made poster of dial. Tutor gives student worksheet "Reading sphygmomanometer" Student places the readings where the arrow is pointing. Tutor checks worksheet. Student corrects. Tutor reinforces student.	0-1-2-3-4

#	TASK	PROCEDURE	SCALE
6.	Demonstrate procedure for measuring blood pressure	Using task analysis, tutor tells student procedure. Tutor shows student proper procedure. Student shows tutor. Student will measure another student's B.P. Tutor checks. Student writes reading. Tutor checks. Tutor reinforces student.	0-1-2-3-4

EVALUATION CHECKLIST - MEASURING BLOOD PRESSURE

STUDENT: **DATE:**

EVALUATED BY:

DIRECTIONS: After sufficient practice, the evaluator will use the following criteria to rate your performance.

#	MEASURING BLOOD PRESSURE	POINTS	POINTS EARNED
1.	Assembles equipment, cleans stethoscope	4	
2.	Washes hands	3	
3.	Identifies patient, explains procedure	6	
4.	Position arm correctly	6	
5.	Applies cuff correctly	5	
6.	Locates brachial artery	5	
7.	Places stethoscope over brachial artery	4	
8.	Checks tubing	4	
9.	Closes valve on rubber bulb	4	
10.	Inflates cuff to 160 mm Hg	4	
11.	Opens bulb valve slowly	4	
12.	Notes first sound heard as systolic pressure	8	
13.	Continues to release air	4	
14.	Notes change or last sound as diastolic pressure	8	
15.	Records readings as fraction	10	
16.	Removes cuff, expel air	2	
17.	Cleans stethoscope	2	
18.	Checks patient for comfort	4	
19.	Replaces equipment	4	
20.	Washes hands	3	
21.	Reports abnormal readings	6	
	TOTALS	100	

UNIT: Vital Signs
LESSON: Review Vital Signs Unit

Day 9

#	OBJECTIVE	PROCEDURE	MATERIALS	EVALUATION
I.	The student will review the vital signs unit in the form of a game.	The purpose of today's lesson is to review for the unit test. The class will be divided into groups with ability levels mixed. The teacher, serving as arbitrator, will read the rules of the game. Each team will have a different colored marker, such as blue for Team I, red for Team II, and green for Team III. The markers will be placed at the starting point on the game board. Each student will take turns rolling the die and move forward on the board that number of spaces. If you land on "take a card", the student will take one question card. They will give the number and read the question aloud, then answer the question. (The teacher will keep a record of the number of correct answers from each student.) The arbitrator will determine correctness of your answer. If the student cannot answer the question correctly, he/she will get help from team members.	Teacher made game board* One die Colored markers Card with questions Arbitrator sheet Note: *indicates not included in article	

#	OBJECTIVE	PROCEDURE	MATERIALS	EVALUATION
		If you answer the question correctly, move ahead one space. If you do not answer correctly, go back one. You will have the full class period for the game. The winner is the first team finished or the leader on the board. For every correct answer an individual student receives, they get an extra point added to the written unit test. Each member of the winning team will also receive one point. No student may earn more than 5 extra points. If the game is finished before the class period is over, we will practice the vital signs skills.		

NAME:_____

VITAL SIGNS TEST

Each correct answer is worth four (4) points. Fill in the blanks of the following:

1. Body temperature may be defined as the measurement of the balance between heat _____ and heat produced by the body.

2. The most common method to measure body temperature is the _____ method.

3. Two parts of the thermometer are _____ and _____.

4. The part of the thermometer that is touched with the fingers is known as the _____.

5. An oral thermometer should be placed under the _____.

Multiple choice. Circle the correct answer.

6. Normal body temperature is
   a. 98.6 F
   b. 100 F
   c. 96 F

7. A thermometer should soak in a disinfectant solution _____ minutes after use.
   a. 60
   b. 30
   c. 10

8. Rate of pulse means _____ per minute.
   a. volume
   b. rhythm
   c. beats

9. The pressure of the blood felt against the wall of an artery as the heart beats is known as
   a. Temperature
   b. pulse
   c. rhythm

10. The average pulse rate per minute for an adult is
    a. 80
    b. 100-120
    c. 50

11. A commonly used pulse site is the
    a. pedal
    b. radial
    c. carotid

12. When taking an apical pulse the actual _____ is heard.
    a. chamber
    b. blood pressure
    c. heartbeat

13. The instrument needed to measure an apical pulse is the
    a. sphygmomanometer
    b. thermometer
    c. stethoscope

14. Normal respirations should be unlabored, even and
    a. quiet
    b. noisy
    c. raspy

15. Normal respiratory rate per minute for an adult is
    a. 30-40
    b. 24-30
    c. 14-20

16. The most common used artery for measuring blood pressure is the
    a. radial
    b. femoral
    c. brachial

17. Record the following blood pressure readings correctly.
    a. Systolic 128 Diastolic 92
    b. Diastolic 84 Systolic 188
    c. Systolic 136 Diastolic 76
    d. Diastolic 118 Systolic 210
    e. Diastolic 90 Systolic 140

18. Name all of the above readings which fall with normal range.

19. Name all the above readings which do not fall within normal range.

Name_____

Vital Signs Test

Circle the correct answers of the following: Multiple Choice. Each correct answer is worth five (5) points.

1. The measurement of the balance between heat lost and heat produced by the body is known as
   a. oral temperature
   b. rectal temperature
   c. body temperature
   d. axillary temperature

2. The most accurate method for measuring body temperature is
   a. axillary
   b. rectal
   c. femoral
   d. oral

3. The term used for the armpit is
   a. diaphragm
   b. axilla
   c. femoral
   d. oral

4. Normal body temperature is
   a. 37 F
   b. 100 F
   c. 98.6 F
   d. 98.6 C

5. The average pulse rate for an adult at rest is
   a. 70-80 beats per minute
   b. one beat every second
   c. 80-100 beats per minute
   d. 130-140 beats per minute

6. The artery which is most commonly felt for the adult pulse is the
   a. radial
   b. brachial
   c. carotid
   d. temporal

7. The apical pulse is checked
   a. in the wrist at the base of the thumb
   b. at the back of the knee
   c. over the apex of the heart
   d. in the groin

8. The average respiratory rate per minute for adults is
   a. 16-20
   b. 30-50
   c. 20-40
   d. 15-30

9. The relationship between the respiratory rate and heartbeat fairly consistent. The number of respirations to heartbeat is usually
   a. 1 to 3
   b. 2 to 4
   c. 1 to 4
   d. 2 to 6

10. The most satisfactory time to count respiration is
   a. while checking the temperature
   b. during the bath
   c. while the patient is eating
   d. after the patient's pulse count

11. If your patient has a fever of 103 F, he/she would probably have
   a. no change in respirations
   b. no changed in pulse
   c. decreased pulse
   d. increased respirations

12. The normal diastolic pressure range for adults measures in millimeters of mercury is
    a. 60 to 90
    b. 80 to 100
    c. 110 to 146
    d. 100 to 120

13. The most commonly used artery for measuring blood pressure is
    a. radial
    b. subclavian
    c. femoral
    d. brachial

14. Normal systolic pressure in adults measured in millimeters of mercury
    a. 90 to 150
    b. 90 to 140
    c. 100 to 120
    d. 60 to 90

Short answers: Point values are in parentheses.

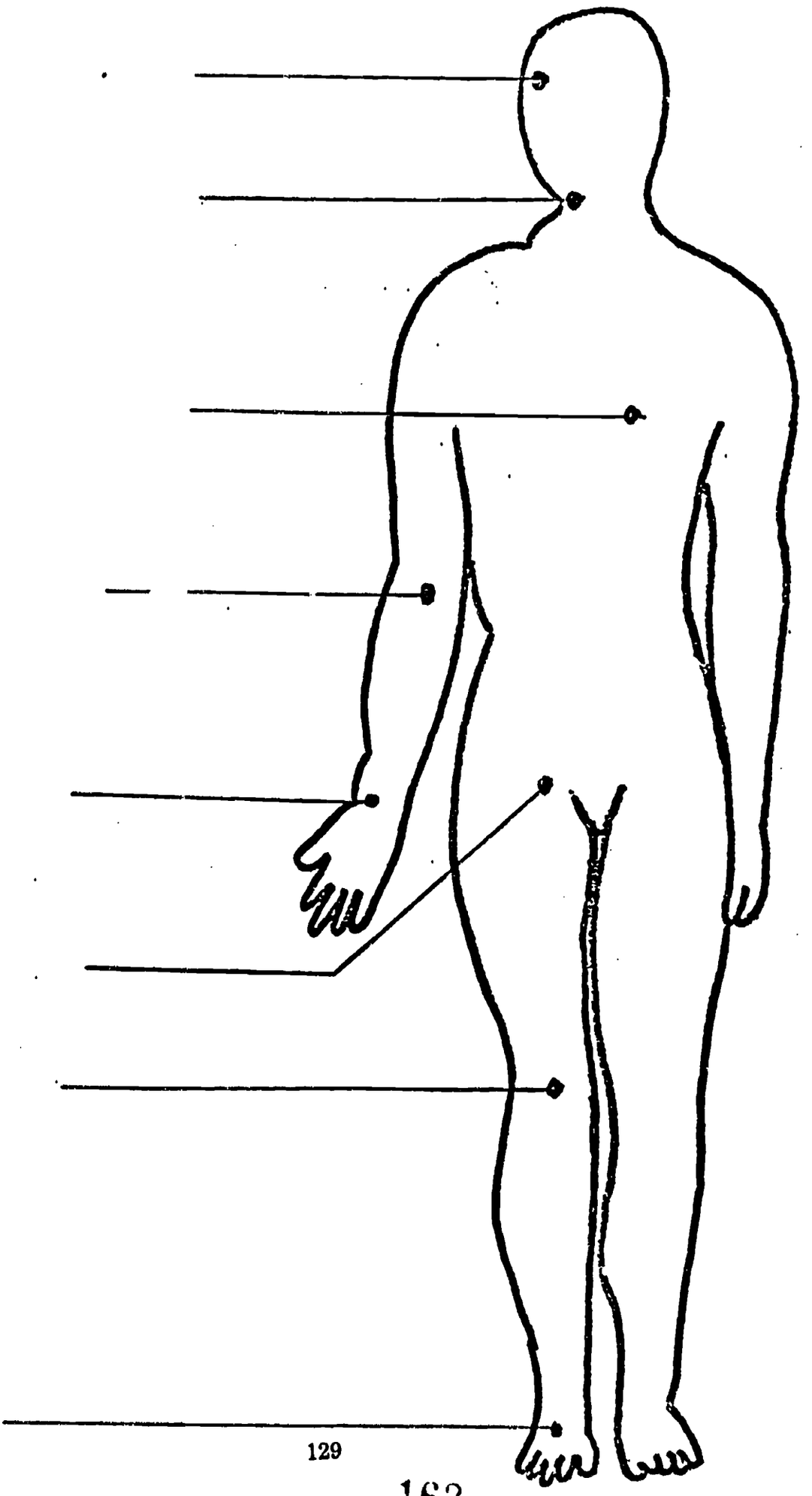
15. A Clinical thermometer has six (6) parts. List four of them. (8)

16. Briefly explain the proper cleaning procedure for a thermometer. (8)

17. Define pulse. (4)

18. Label the pulse sites. (8)

Label the pulse sites.

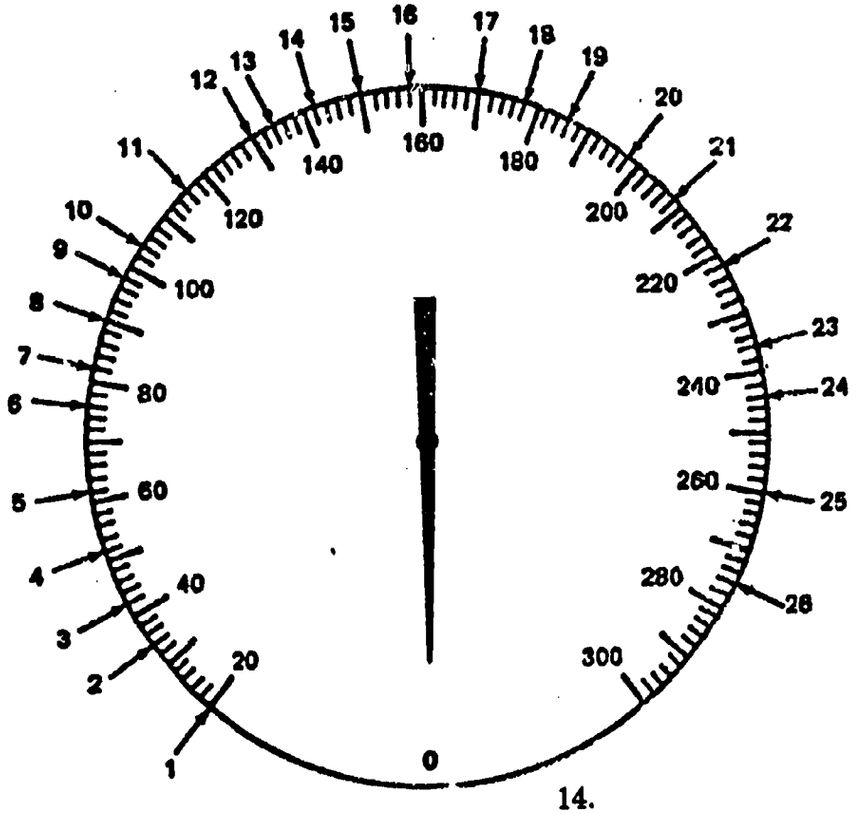


Name _____

Reading an Aneroid Sphygmomanometer

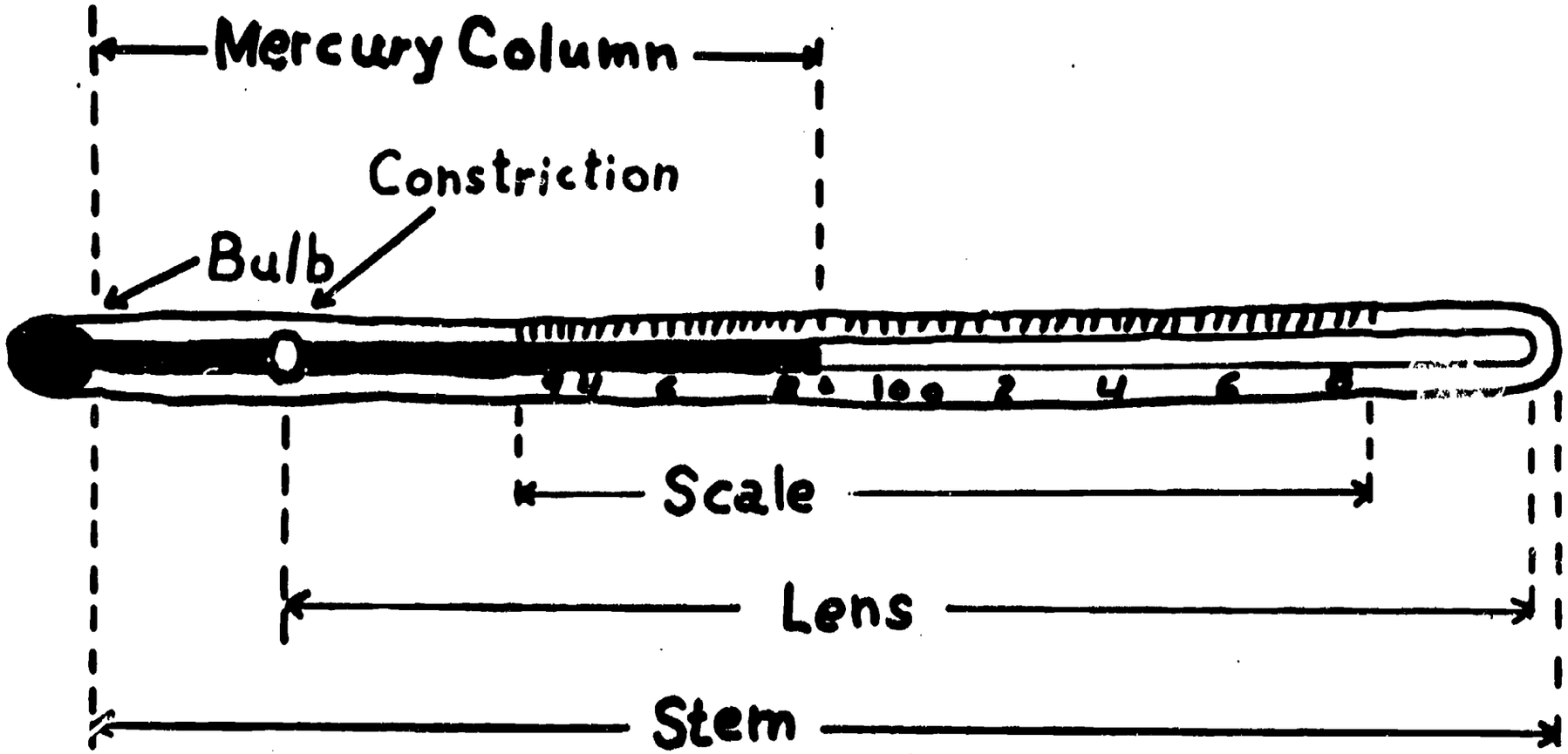
Introduction: The aneroid gauge is a common gauge on many sphygmomanometer. Each line represents 2 mmHg pressure. Complete this sheet to practice reading the guage.

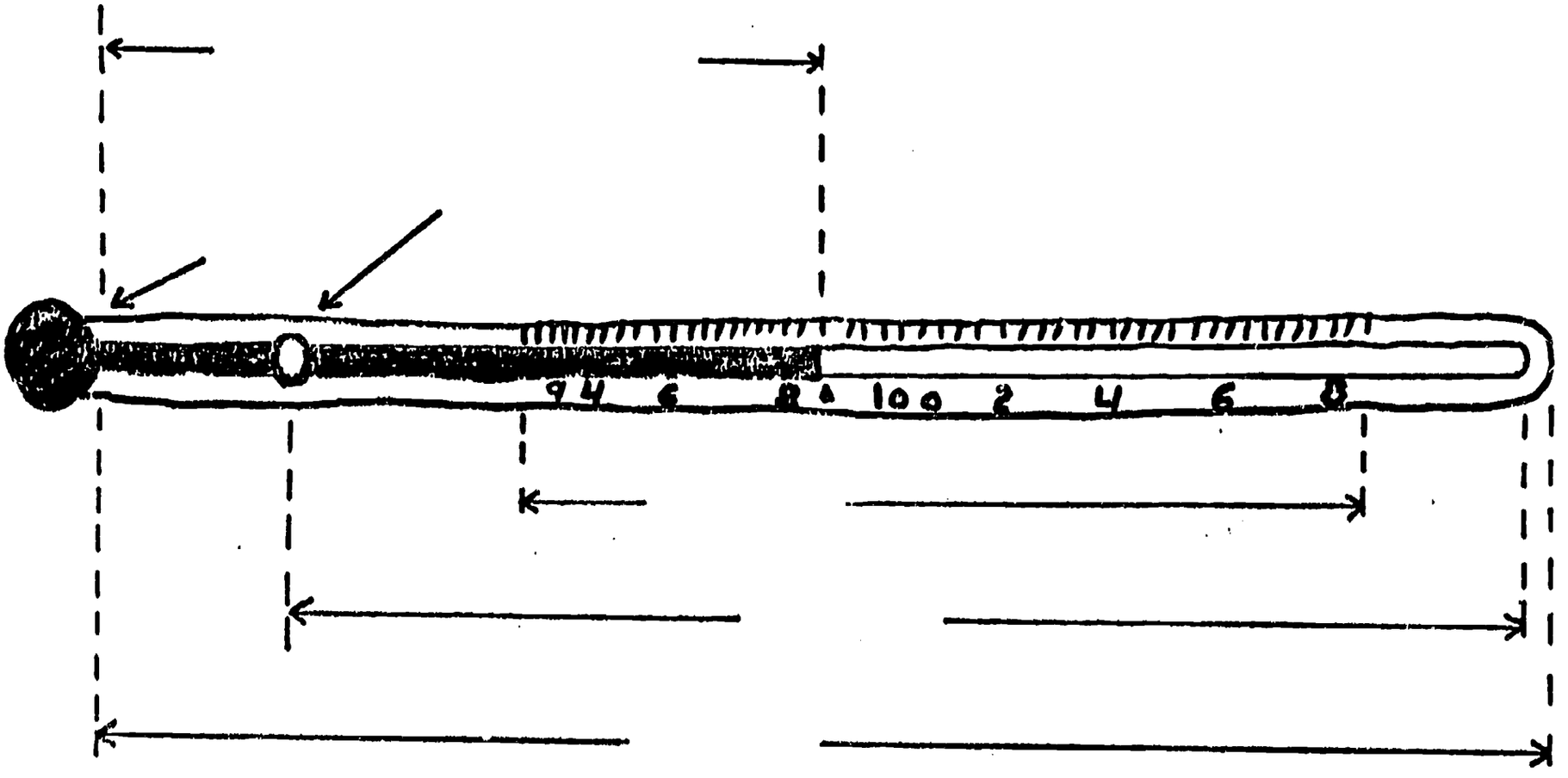
Instructions: In the spaces provided place the reading to which the arrow is pointing.

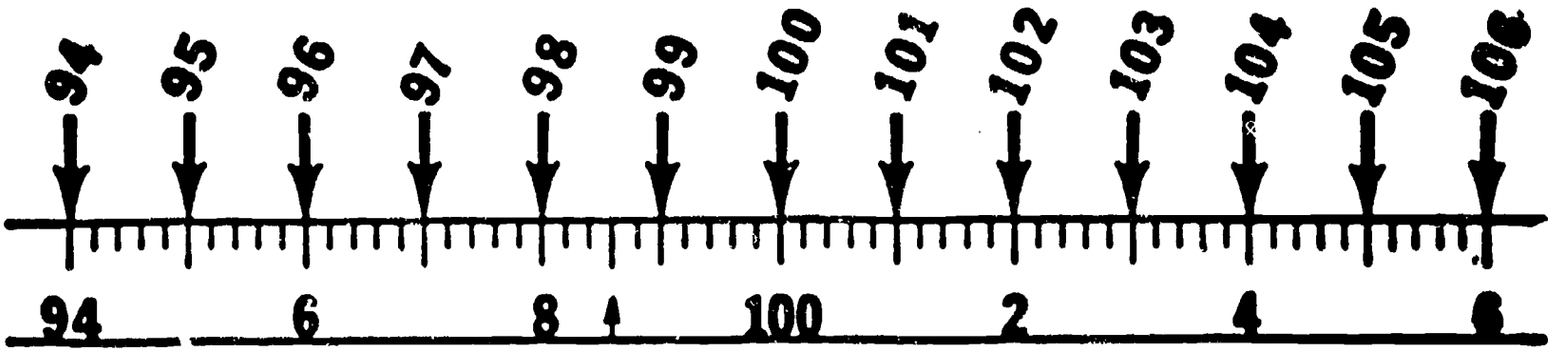


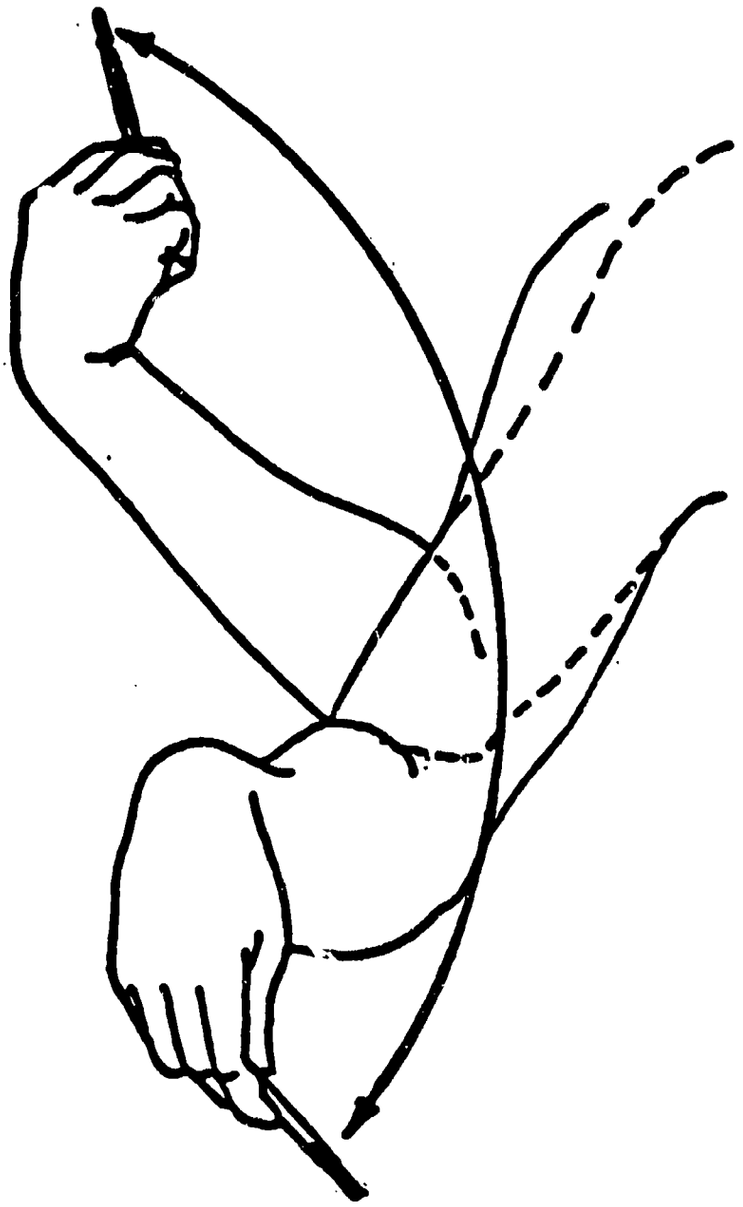
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____
26. _____

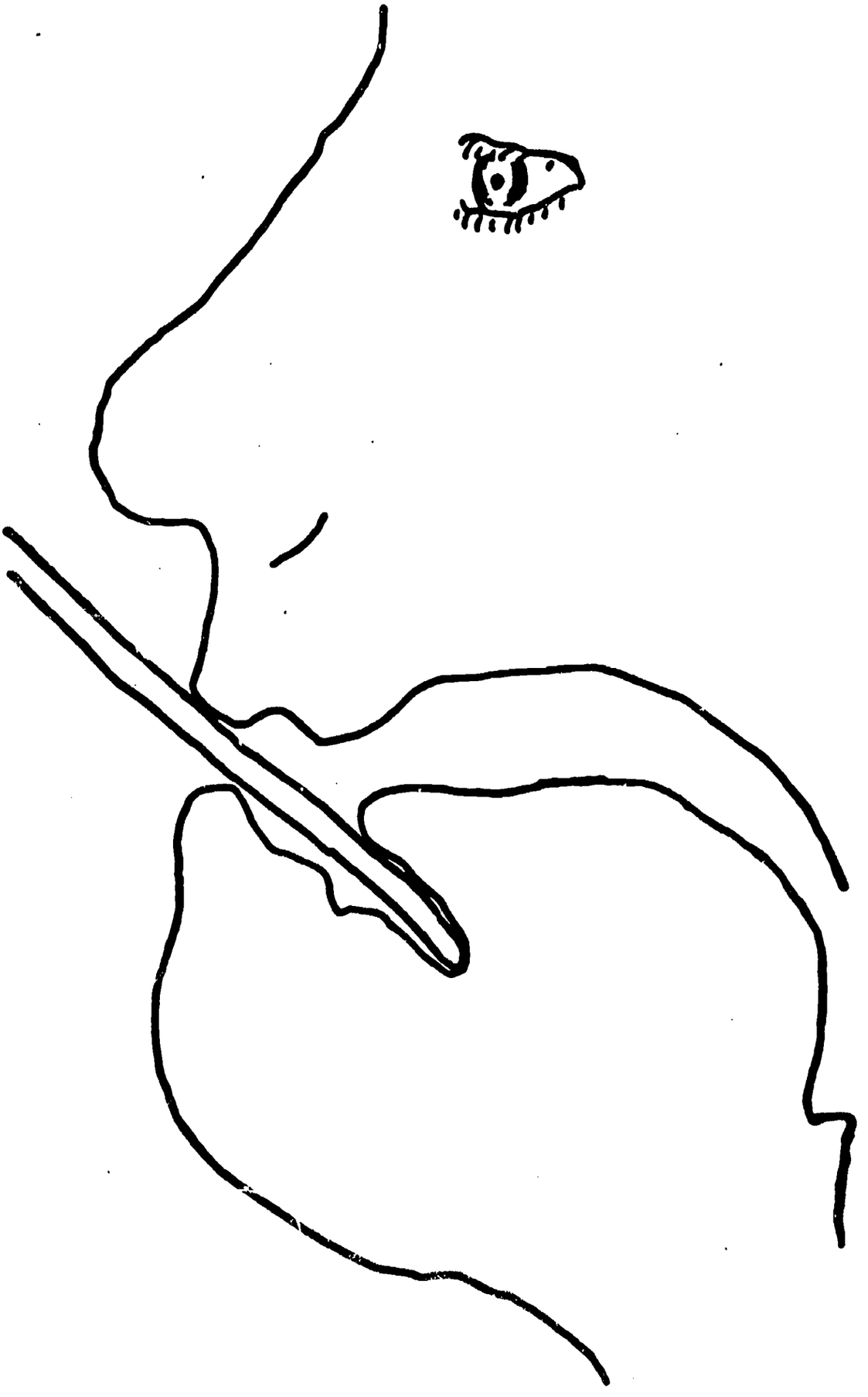
TRANSPARENCY MASTERS

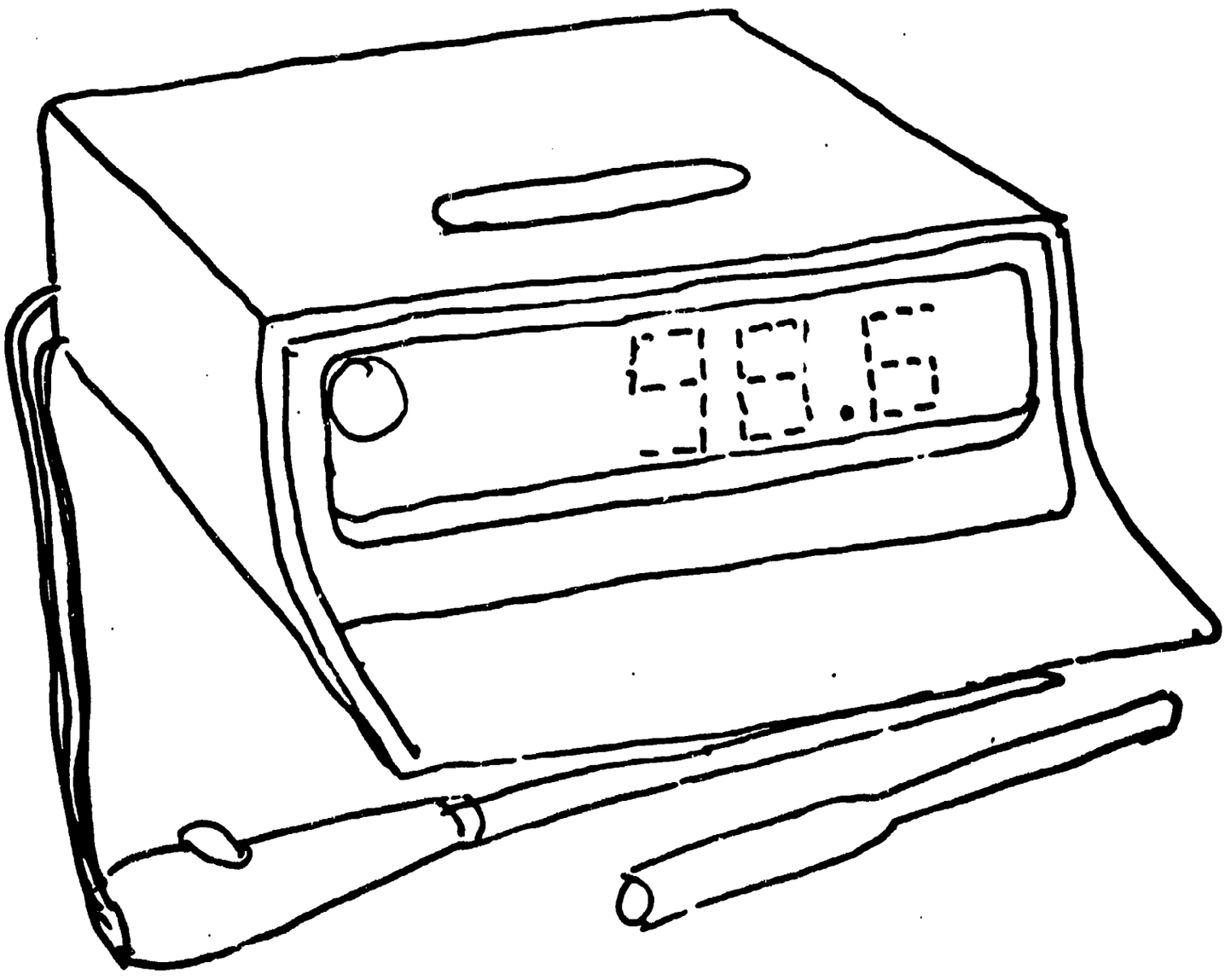

Mercury Column
Constriction
Bulb
Scale
Lens
Stem

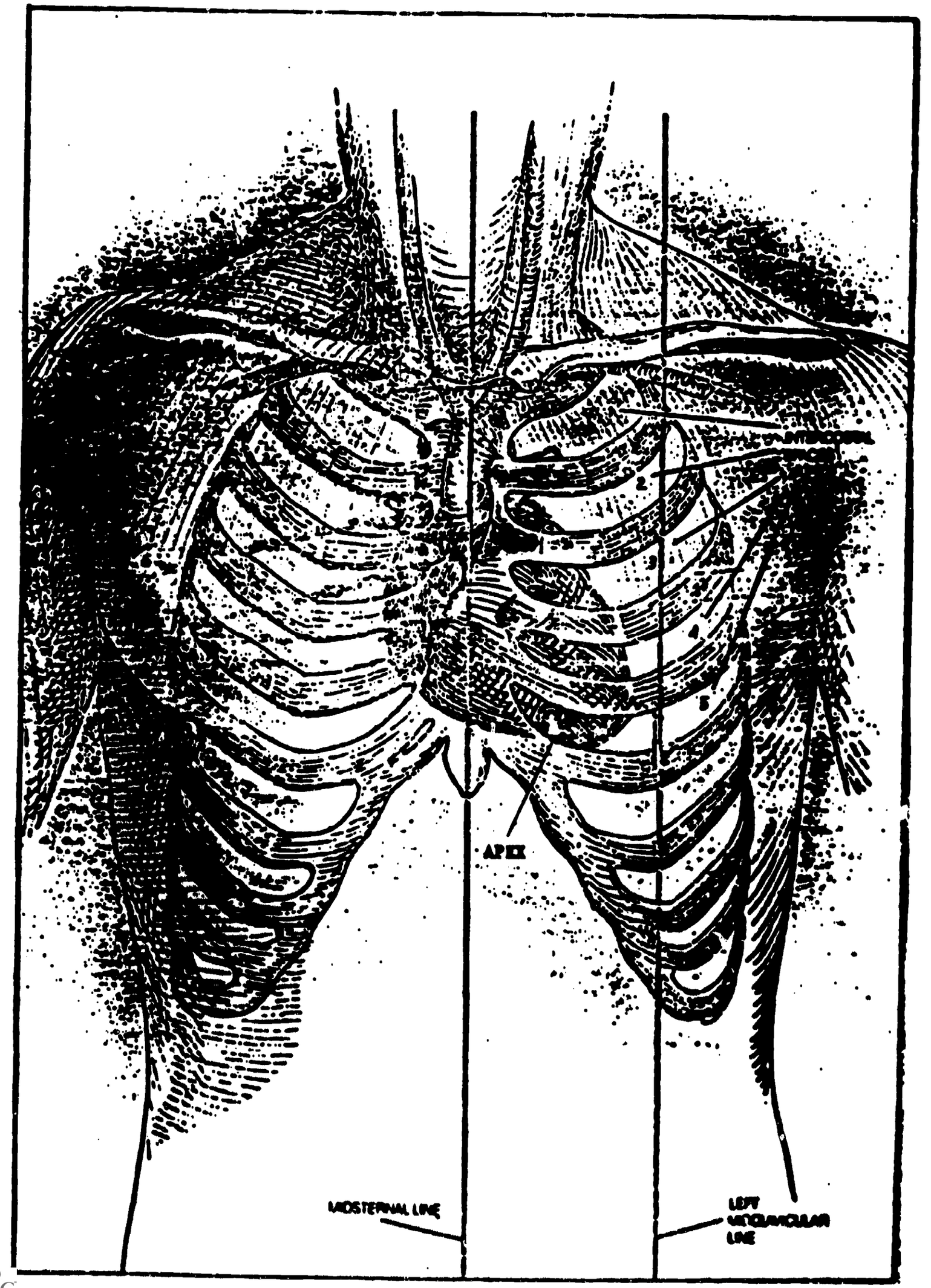

94 6 8 100 2 4 6 8

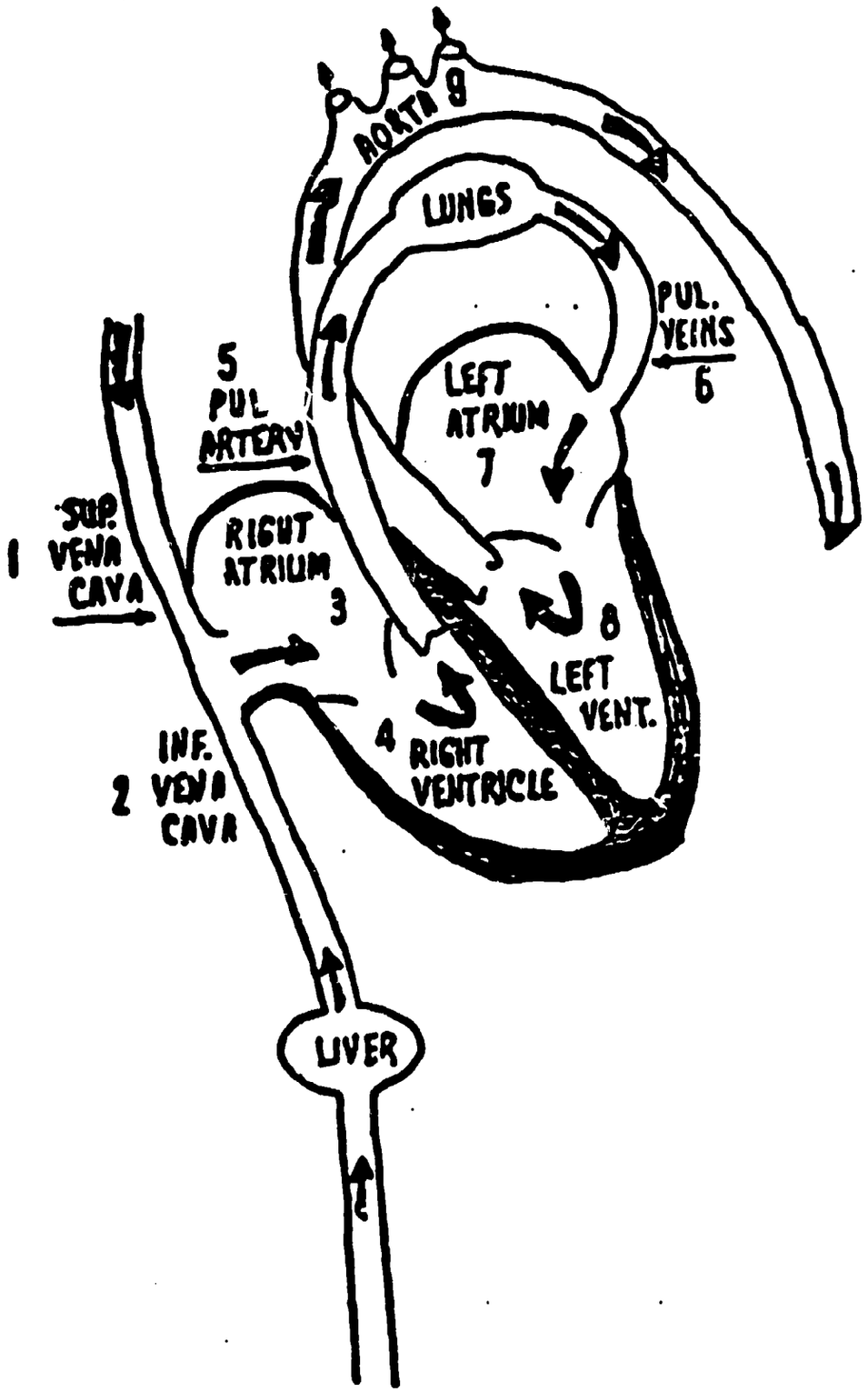

94
95
96
97
98
99
100
101
102
103
104
105
106
94
6
8
100
2
4
6

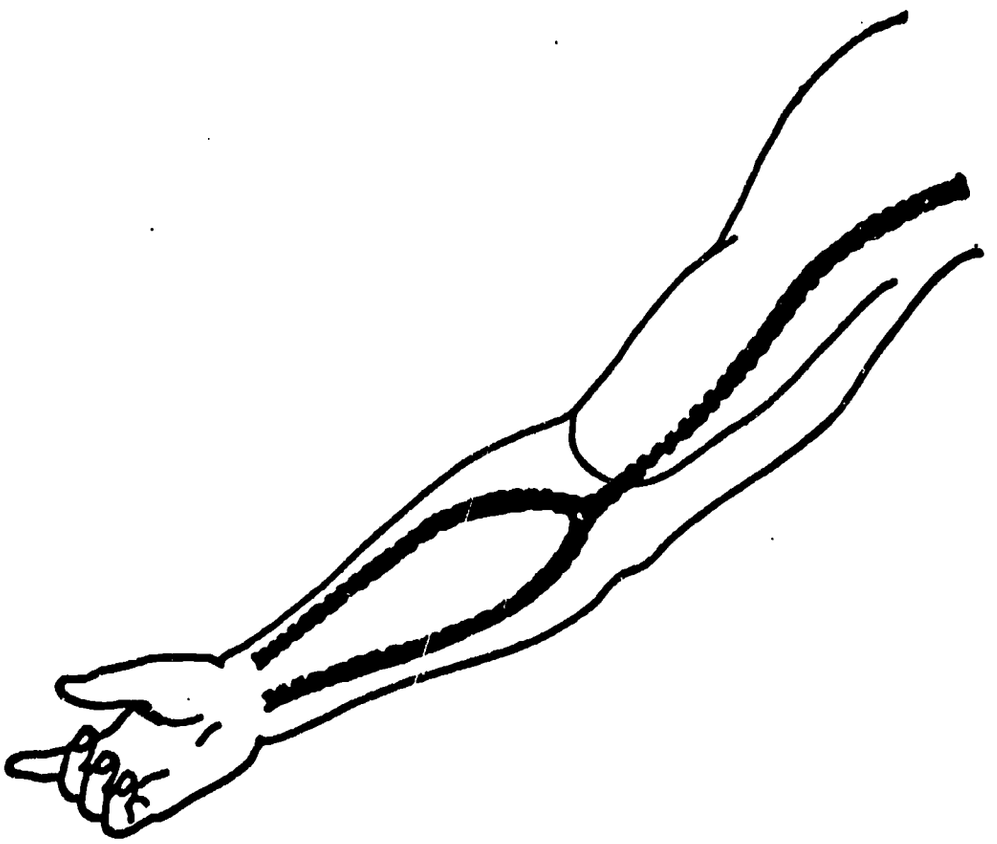


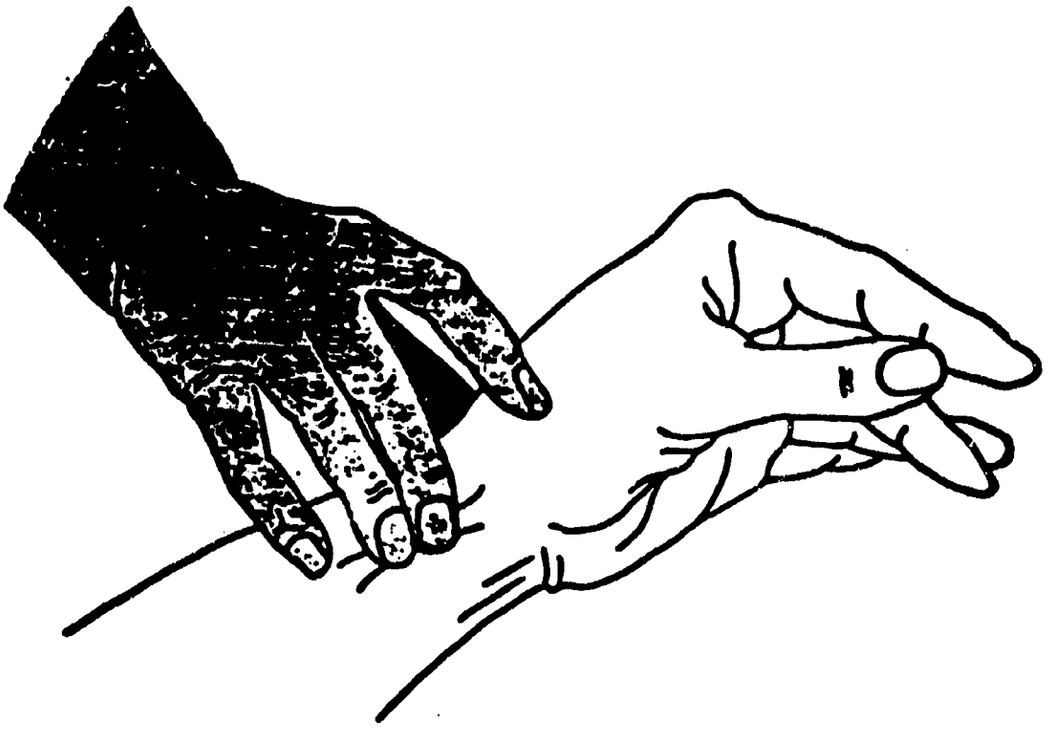


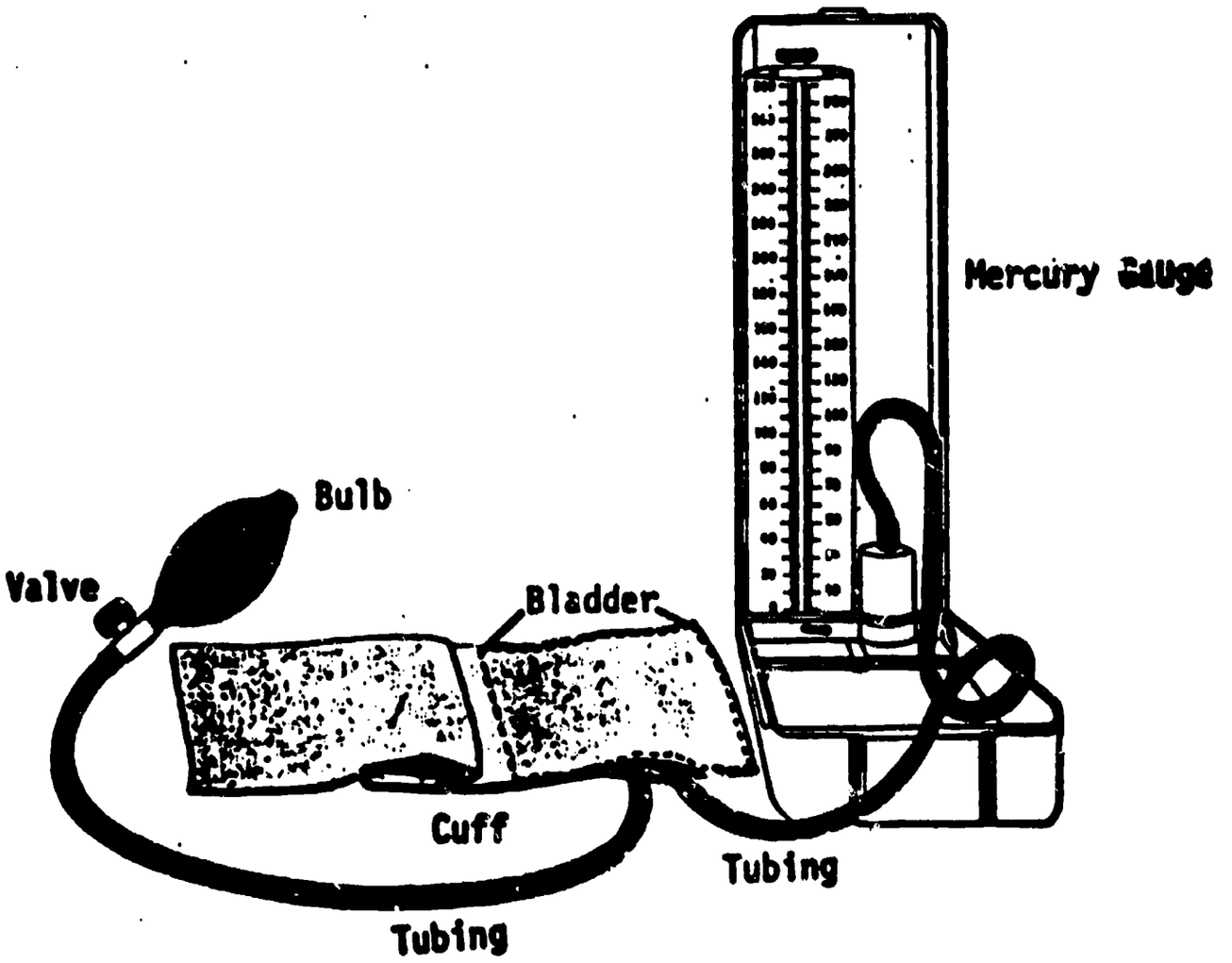


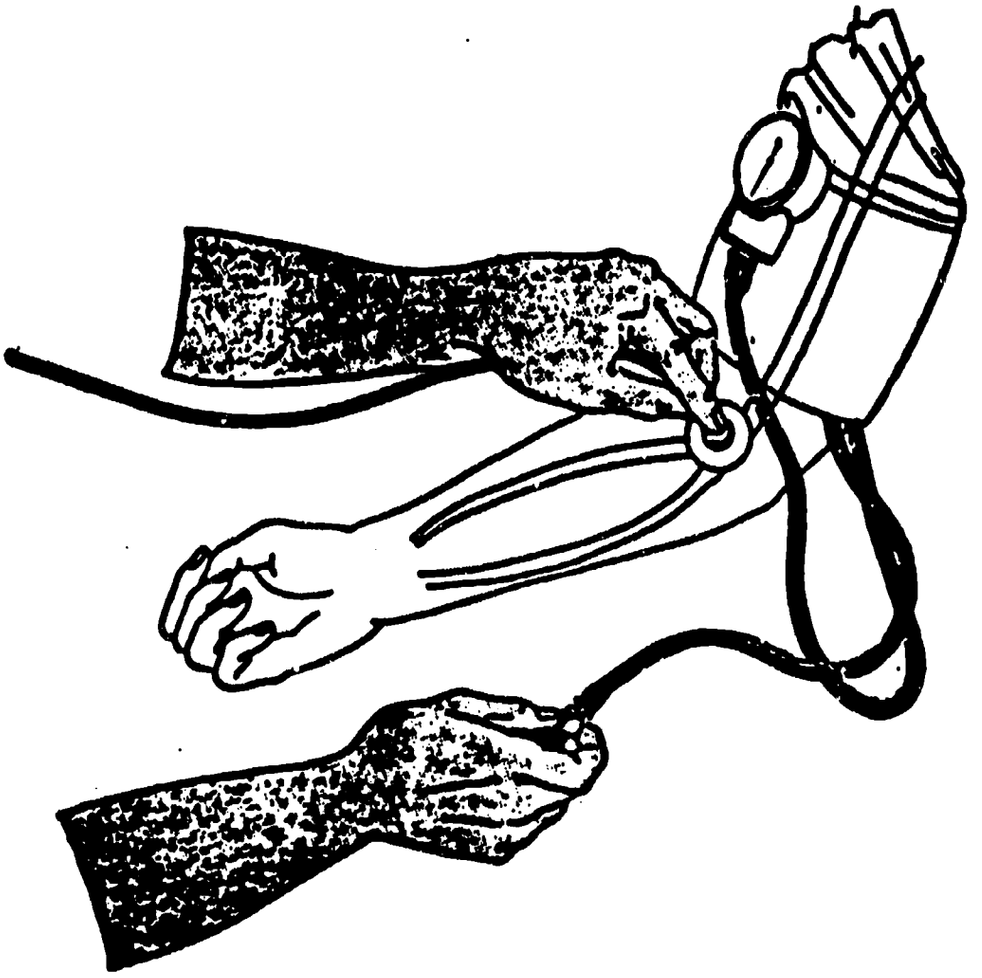

APEX
MIDSTERNAL LINE
LEFT
MIDCLAVICULAR
LINE

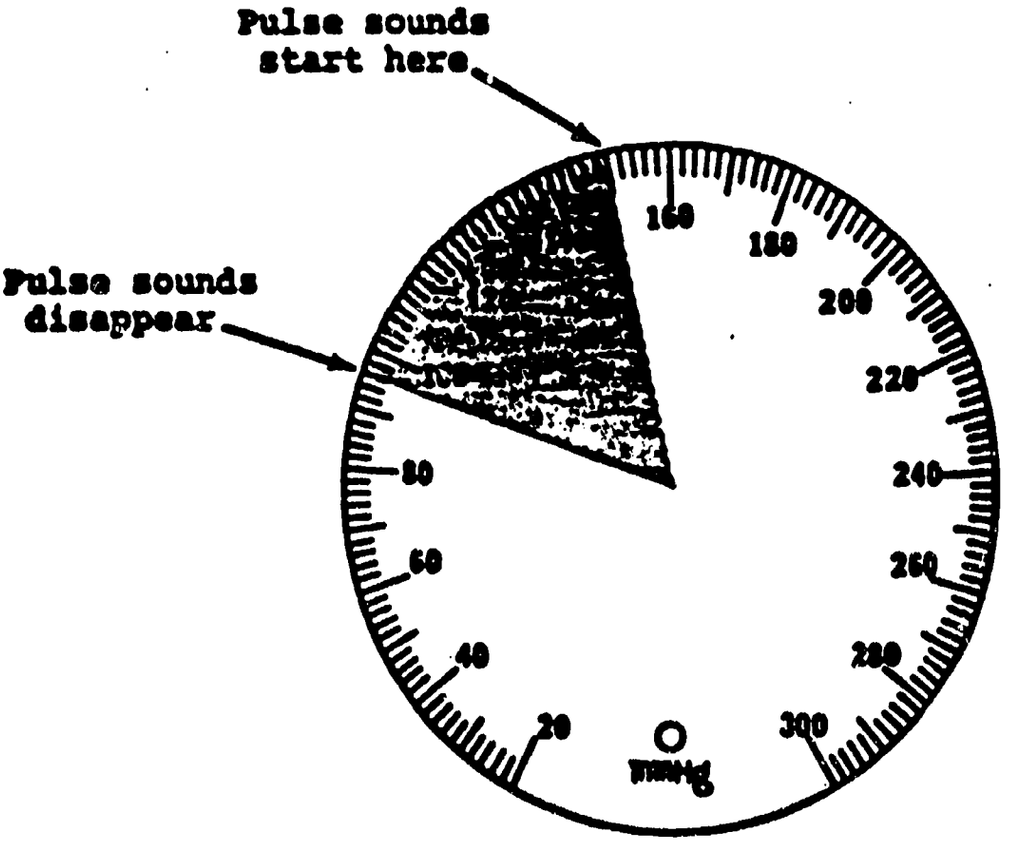

AORTA 9
LUNGS
PUL. VEINS 6
5 PUL ARTERY
LEFT ATRIUM 7
1 SUP. VENA CAVA
RIGHT ATRIUM 3
8 LEFT VENT.
4 RIGHT VENTRICLE
2 INF. VENA CAVA
LIVER






Mercury Gauge
Bulb
Valve
Bladder
Cuff
Tubing
Tubing




Pulse sounds start here
Pulse sounds disappear
160
180
200
220
240
260
280
300
80
60
40
20
mmHg