

A Practical Guide for the Teaching of Literacy to Adults With Learning Difficulties

Part VIII

MAY 2002

A Practical Guide for the Teaching of Literacy to Adults With Learning Difficulties

Diagnosis and Intervention Strategies

**VIII — Remedial Field
Module: Graphic Motricity**

MAY 2002

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VIII—REMEDIAL FIELD

MODULE: GRAPHIC MOTRICITY

INTRODUCTION

Why pay special attention to graphic motricity? Because the good and bad habits acquired in this area will be decisive in terms of the general appearance of the finished product (written work, writing of numerals, etc.) submitted by the adult learner. They will also have a significant impact on the ability to complete an assignment.

Furthermore, the interventions suggested in this module deal with a number of basic requirements, cited below, that are essential for the acquisition of good work habits in terms of graphic motricity.

First, it is essential that adult learners who are ambidextrous or who have yet to establish a firm lateral preference be encouraged to choose one hand for writing and for all other activities involving fine motor skills. This choice will make it possible to intervene more effectively if the adult has problems with graphic motricity.

It is also important to take into account the physical characteristics of the work environment (such as lighting, available space, furniture and its arrangement) and to try to create the best possible work conditions. The adult learners must be made aware of the importance of having an adequate work environment, both in the classroom and at home.

As for the form of writing, it is best if the adult learner learns to write in cursive script: this form of writing is more common and less time-consuming than printing. However, it is important to strike a balance between these types of requirements and the adult learner's abilities, and to ensure that only one form of writing is used.

In many cases, the use of a typewriter or computer keyboard can be a good solution: this allows the adult learner to produce very neat work, relieves the tension sometimes associated with holding a pencil and is in itself a very rewarding activity.

Lastly, it is essential to encourage the adult learners to produce work that is well-done, neat and legible. The most effective way to do this is to provide examples of well-written work and to supply material such as lined paper and a suitable writing instrument—to say nothing of serving as a role model on a daily basis!

REMEDIAL FIELD

GRAPHIC MOTRICITY

1. Is the adult learner:
1.1. right-handed?

YES: The adult learner **always** uses the right hand for all activities: writing, grasping, etc. **NO:** The adult learner is left-handed or ambidextrous.

1. Is the adult learner:
1.2. left-handed?

YES: The adult learner **always** uses the left hand for all activities: writing, grasping, etc. **NO:** The adult learner is right-handed or ambidextrous.

1. Is the adult learner:
1.3. ambidextrous?

YES: The adult learner **always** uses both hands for all activities: writing, grasping, etc. **NO:** The adult learner is right-handed or left-handed.

SUGGESTED INTERVENTIONS

- Verify that the adult learner has the various abilities associated with spatial orientation, including:
 - ◇ the ability to locate various elements in his or her environment: above, below, to the right, to the left, etc.; in relation to himself or herself; in relation to the person he or she is facing; in relation to other elements
 - ◇ the ability to distinguish easily between right and left
- If the lateral preference of the adult learner is not well established, or if he or she is ambidextrous, have the adult choose one hand—either hand, but always the same one—for writing and for performing all movements involving fine motor skills, such as cutting, erasing or sewing. To assist with this choice, ask the adult to successively perform a number of activities with each hand, such as:
 - ◇ throwing a ball at a target
 - ◇ copying a few words
 - ◇ threading a needle
 - ◇ cutting out shapes, etc.

After each activity, help the adult learner determine which hand produced the best result, with the least amount of effort, in a normal amount of time.

- Once lateral preference has been determined, ensure that the adult learner always uses the same hand for writing and for any other activity involving fine motor skills.
- Pay particular attention to the adult learner's command of spatial skills required to read: the reader begins in the upper left-hand corner, then moves from left to right following the links between the letters and syllables; otherwise, the meaning of the text cannot be grasped.

SUGGESTED INTERVENTIONS (cont.)

- Have the adult learners do numerous activities that require them to use the concepts associated with lateral preference and spatial orientation. For example, have them:
 - ◇ perform simple tasks that involve following specific oral instructions such as: “Write your name in the upper left-hand corner of a sheet of paper, then write the date directly underneath...”
 - ◇ trace a route on a simplified map or plan by following verbal directions such as: “You turn at the first street on your left...”
 - ◇ use everyday examples to improve their capacity to situate themselves in space and to determine the position of various elements such as:
 - ⇒ a specific building in the neighbourhood (across the street, next door, to the right, to the left, etc.)
 - ⇒ an object (below, on the top shelf, underneath, etc.)

2. Does the adult learner have good seated posture for writing or for any other seated activity?	
YES: The adult learner has good seated posture.	NO: The adult learner does not adopt an appropriate position. Show the student how to sit correctly and encourage him or her to adopt this position for all seated activities, because bad posture creates muscle tension, which causes unnecessary fatigue and hinders learning.

SUGGESTED INTERVENTIONS

- Begin by eliminating all elements that may cause the adult learner to adopt a poor seated position when writing. For example: vision problems, inadequate furniture or lighting, hair dangling in front of the eyes, etc.
- Make the adult learner aware of the importance of maintaining good posture, not only when writing but throughout the day; for example, point out its effects on overall health, digestion, the image projected to others, etc. Use simple texts on the subject, role-playing exercises, etc.
- Indicate to the learners what constitutes good seated posture for writing, namely:
 - ◇ the chair sufficiently close to the work surface
 - ◇ proper back support
 - ◇ feet resting flat on the floor
 - ◇ the wrist of the writing hand resting on the work surface
- Have the learners experiment with bad positions for a few minutes:
 - ◇ moving their chair away from the work surface
 - ◇ slouching
 - ◇ crossing their legs

SUGGESTED INTERVENTIONS (cont.)

- Limit the duration and frequency of periods of inactivity. Plan a series of activities that will give the adult learners an opportunity to move around (go to the board, get up to consult reference tools inside or outside the classroom, etc.).
- Set aside short periods for relaxing, stretching and physical exercise to reduce fatigue and muscle tension.
- Allow adult learners who experience fatigue or back pain to get up and stretch their legs when they feel the need. Also help them develop greater endurance by increasing the length of time between rest periods by a few minutes each week.
- Encourage the adult learners to make their chairs more comfortable, by placing a cushion behind their backs if necessary.
- Encourage the adult learners to remain aware of their posture and to do whatever is necessary to develop good seated posture for writing.

3. Does the adult learner hold writing instruments in a way that facilitates writing?

YES: The adult learner holds pencils, pens, etc., correctly.

NO: The adult learner does not hold writing instruments correctly. Demonstrate how to hold such instruments correctly, so as to eliminate unnecessary physical fatigue and promote the development of acceptable handwriting.

SUGGESTED INTERVENTIONS

- Insist that the adult learner use well-sharpened, sufficiently long, regularly shaped pencils. Do not permit the use of stubby pencils or of pencils and pens shaped in such a way as to make them difficult to grasp and handle.
- Encourage the adult learner to hold writing instruments in a way that prevents muscle fatigue. To achieve this, have him or her:
 - ◇ rest the forearm and wrist of the writing hand firmly on the work surface
 - ◇ hold the writing instrument between the thumb and the index finger, resting it firmly against the middle finger
 - ◇ avoid holding the pencil too high, or too low (near the point where the lead emerges from the wood)
 - ◇ avoid bending the wrist
 - ◇ avoid gripping the writing instrument too tightly
- Pay some attention to the orientation of the sheet the adult learner is writing on: the sheet should be slightly tilted, and the bottom should be slanted slightly toward the right for right-handed individuals, and toward the left for left-handed individuals.
- Demonstrate the proper technique whenever necessary, to allow the adult learner to imitate the movements involved in handling a pencil or other writing instrument.
- Correct the adult learner whenever necessary.

4. Does the adult learner show any signs of hypertonia (muscular rigidity)?

YES: The adult learner holds onto the writing instrument as if it were a life saver. The usual signs of hypertonia are redness on fingers and extreme muscle tension involving the whole arm, the shoulder and even the back. Show the adult how to hold the writing instrument in a way that eliminates all unnecessary muscle fatigue and promotes good handwriting.

NO: The adult learner does not have this problem.

SUGGESTED INTERVENTIONS

- First ensure that the adult learner has good seated posture for writing and holds the writing instrument correctly. See the interventions suggested in sections 2 and 3.
- Encourage the adult learners to take the time to relax their whole body, briefly but regularly, for example by:
 - ◇ participating in directed relaxation activities; listening to a relaxation cassette for a few minutes each day in workshops
 - ◇ doing a series of stretches at regular intervals
 - ◇ walking outside for a few minutes during a break
- Encourage the adult learners to pay attention to the muscle tension they experience when writing. Suggest that they loosen up their fingers, move their arms and force themselves to relax when they begin to experience muscle fatigue.

SUGGESTED INTERVENTIONS (cont.)

- When possible, and if the adult learners agree, suggest that they do writing exercises on the board. This will give them an opportunity to write in large characters on a large surface and will eliminate some of the tension associated with writing on a restricted surface.
- Suggest that the adult learners use a smooth surface for writing (sheet of plastic, slate, etc.) along with an instrument that glides smoothly over this surface (fine-tipped felt pen, chalk, etc.), in order to reduce muscle tension, then gradually begin using a sheet of paper and a pencil.
- Observe the adult learner engaging in other activities that require a certain amount of flexibility (dancing, sports, etc.); take advantage of such opportunities to point out the benefits of physical activity.
- Without engaging in psychoanalysis, discuss with the adult learner factors that can contribute to tension: the fear of making mistakes, an aversion to schoolwork, difficulties with self-expression, the presence of the instructor, etc. Do everything possible to win the adult's trust.

5. Does the adult learner show any signs of hypotonia (muscular relaxation)?

YES: The adult learner holds the writing instrument as if he or she might let go of it at any moment. The grip is weak and lacks muscle tone. Show the adult how to hold the writing instrument in a way that eliminates any unnecessary physical fatigue and promotes good handwriting.

NO: The adult learner does not have this problem.

SUGGESTED INTERVENTIONS

- Ensure that the adult learner has good seated posture for writing and holds the writing instrument correctly. See the interventions suggested in sections 2 and 3.
- Note the strength of the learner's handshake and his or her capacity to make a fist.
- Encourage the adult learner to regularly do exercises that improve muscle tone. For example, have the adult open and close hands energetically, or pick up a heavy object such as a dictionary with one hand.
- Initially, have the adult learner work with the instrument and the surface most suitable for him or her: with chalk and a board, a felt pen and a plastic surface, etc. Then have the learner begin to use a pencil and a piece of paper.
- Suggest that the adult learner do exercises involving fine motor skills: threading a needle, cutting out shapes, etc.

SUGGESTED INTERVENTIONS (cont.)

- Suggest the temporary or more long-term use of a keyboard if the adult learner does not have sufficient muscle tone to hold a pencil. It is also possible to use a small device designed to make it easier to hold a pencil.



6. Does the adult learner write at a good pace?	
YES: The adult learner writes at a good and constant pace.	NO: The adult learner does not write at a good pace and the rhythm of the handwriting varies. This may mean that there are pauses or long breaks, fits and starts, or even spurts when the adult writes too quickly. Show the adult how to write at a regular pace so as to prevent unnecessary physical fatigue and promote acceptable handwriting.

SUGGESTED INTERVENTIONS

- Suggest handwriting exercises that will enable the adult learner to regularize the movements required to form letters. The pace of the handwriting will also become more regular and its quality may also improve. The learner can also be encouraged to use one of the various copybooks available on the market.
- Help the adult learners to focus on the task at hand. For example:
 - ◇ Have them begin by completing short copying exercises within a specific time limit.
 - ◇ Ensure that they can quickly locate the right point in the text during copying exercises. Consider suggesting that the index finger of the free hand be used for this purpose or that a ruler or a sheet of paper be positioned beneath the line to be copied, so as to clearly indicate the portion of the text that is to be reproduced, thus reducing the tendency to forget words and limiting the number of pauses caused by losing one's place.
- If the adult learner is unable to write cursive script but would be able to learn to do so, teach this skill. Cursive script is the standard form of writing and may improve the regularity and pace of the adult's handwriting.

SUGGESTED INTERVENTIONS (cont.)

- Encourage the adult learner to develop certain habits such as:
 - ◇ crossing t's, dotting i's and inserting other orthographical signs only after writing the entire word, to avoid interfering with the rhythm of the handwriting
 - ◇ reading and understanding the words to be copied before writing them
 - ◇ verifying at a glance that words have been reproduced correctly, especially long or unfamiliar words

7. Does the adult learner write too slowly?

YES: The adult learner writes at a steady pace but extremely slowly. Improving the rhythm of the handwriting can increase the pace.

NO: The adult learner does not have this problem.

SUGGESTED INTERVENTIONS

- While encouraging the adult learner to write with some speed, focus on writing well rather than writing quickly.
- Insist on the necessity of finishing what has been started within a reasonable amount of time.
- For each writing activity, establish a time period within which the adult learner must complete the work. Gradually reduce the time allotted until the adult learner writes at the same pace as most of the other students in the group.
- Help the adult learners to focus on the task at hand. For example:
 - ◊ Have them begin by completing short copying exercises within a specific time limit.
 - ◊ Ensure that they can quickly locate the right point in the text during copying exercises. Consider suggesting that the index finger of the free hand be used for this purpose or that a ruler or a sheet of paper be positioned beneath the line to be copied, so as to clearly indicate the portion of the text that is to be reproduced, thus reducing the tendency to forget words and limiting the number of pauses caused by losing one's place.
- If the adult learner is unable to write cursive script but would be able to learn to do so, teach this skill. Cursive script is the standard form of writing and may improve the regularity and pace of the adult's handwriting.

SUGGESTED INTERVENTIONS (cont.)

- Encourage the adult learner to develop certain habits that can increase writing pace such as:
 - ◇ crossing t's, dotting i's and inserting other orthographical signs only after writing the entire word, to avoid interfering with the rhythm of the handwriting
 - ◇ reading and understanding the words to be copied before writing them, because writing pace depends on the writer's capacity to anticipate
- Introduce activities not directly related to writing that require speed and precision. For example, ask the adult learner to:
 - ◇ outline, as quickly as possible, a specific headline in a newspaper
 - ◇ arrange, as quickly as possible, letters written on small pieces of cardboard, so as to form a particular word

These exercises can be conducted in the form of team competitions.

- Suggest that the adult learner do exercises involving fine motor skills and requiring good visual-motor coordination: threading a needle, cutting out shapes, etc.
- Assign exercises that involve keeping up a steady pace. See the interventions suggested in section 8.
- Observe the adult learner in everyday group situations to see if the slowness is evident during other activities.

8. Does the adult learner have a problem with rhythm?

YES: The adult learner seems to have no conception of rhythm. Consider suggesting rhythm exercises.

NO: The adult learner does not have this problem.

SUGGESTED INTERVENTIONS

- Suggest handwriting exercises the adult learner can do to regularize the movements required to form letters. The pace of the handwriting will also become more regular and its quality may also improve. The adult can also be encouraged to use one of the various copybooks available on the market.
- Encourage the adult learner to develop certain habits such as:
 - ◇ crossing t's, dotting i's and inserting other orthographical signs only after writing the entire word, to avoid interfering with the rhythm of the handwriting
 - ◇ reading and understanding, or visualizing, the words to be reproduced before writing them down
 - ◇ leaving an equal amount of space between each word in a sentence; provide a template or guide if necessary
- Present various exercises designed to make adult learners more aware of rhythm and regularity. For example:
 - ◇ Ask them to reproduce a rhythmic sequence by clapping their hands, snapping their fingers, etc.
 - ◇ Have them reproduce sequences of sounds on paper: short sounds are represented by dots and long ones by lines _____.
 - ◇ Have them keep time with a piece of music by tapping their feet, clapping their hands or singing.
 - ◇ Have them identify regular sounds recorded on a cassette tape: heartbeat, ticking clock, dripping faucet, walking or running footsteps, etc.

9.	Can the adult learner reproduce all the letters of the alphabet:	
9.1.	when not copying an example?	
YES:	The adult learner can reproduce all the letters of the alphabet without copying an example and without experiencing any motor problems.	NO: The adult learner has difficulty reproducing the letters of the alphabet. This may be due to a problem with motor memory: the adult no longer remembers the movement required to reproduce the letter. Consider suggesting corrective exercises.

9.	Can the adult learner reproduce all the letters of the alphabet:	
9.2.	when copying an example?	
YES:	The adult learner can reproduce all the letters of the alphabet when copying an example, without experiencing any motor problems.	NO: The adult learner has difficulty reproducing the letters of the alphabet. This may be due to a problem with visual-motor coordination (eye-hand coordination) or with fine motor skills. Consider suggesting corrective exercises.

SUGGESTED INTERVENTIONS

- Promote the development of fine motor skills and visual-motor coordination by means of various simple exercises and assignments requiring a certain amount of precision. For example: threading a needle, cutting out shapes, colouring, etc.

SUGGESTED INTERVENTIONS (cont.)

- Have the adult learner reproduce the letters of the alphabet, first by copying examples. Consider suggesting various exercises, such as:
 - ◇ reproducing letters on a large surface (the board or a large sheet of paper) using various writing instruments (chalk, a large felt pen, a paintbrush, etc.), then gradually reducing the size of the work surface until a pencil can be used
 - ◇ tracing different sizes of letters using stencils or dotted outlines
 - ◇ learning by imitating: make the movement required to form the letter yourself and describe it verbally, then have the adult learner reproduce this gesture as accurately as possible while also describing it in words

- Use various types of material:
 - ◇ a magnetic board with plastic letters, to give the adult learner an opportunity to feel the shape of the letters
 - ◇ a copybook, to allow the adult to gradually learn how to reproduce letters
 - ◇ plastic-coated strips with the letters of the alphabet on them, etc.

- Have the adult learners use their powers of observation and visual discrimination by completing exercises such as:
 - ◇ spotting the differences between two apparently identical drawings
 - ◇ finding a given letter among a group of similar letters
 - ◇ grouping, comparing and observing letters with similar shapes and common features:
 - ⇒ roundish letters: b, d, p, q, etc.
 - ⇒ ascending and descending letters: h, p, k, etc.

SUGGESTED INTERVENTIONS (cont.)

- Identify the specific letters that are causing problems and have the adult learner practice reproducing these letters, beginning with letters he or she has already mastered.
- Have the learner do numerous copying exercises: letters, numbers, simple shapes, etc.
- Suggest various exercises that give the adult learner an opportunity to reproduce letters, without copying them, such as:
 - ◇ writing down a letter that has been dictated
 - ◇ describing the letters named; dictation exercises involving problem letters can be conducted regularly
 - ◇ writing down letters based on oral clues such as:
 - “I’m thinking of a letter made up of a vertical straight line and a ball located on the right, at the base of the vertical line.” (A lower-case “b.”)

10.	Can the adult learner reproduce all the letters of the alphabet:	
10.1.	in printing?	
YES:	The adult learner can print (block letters) without difficulty.	<p>NO: The adult learner has difficulty printing. It is therefore necessary to verify if he or she has been taught to print in the past:</p> <ul style="list-style-type: none"> • If so: Investigate and try to determine why the adult learner has difficulty printing. Based on your findings, you may suspect a learning difficulty. • If not: Proceed to show the adult learner how to print.

SUGGESTED INTERVENTIONS

- Ensure that the adult learner is very familiar with the differences between printing and cursive writing, to prevent the indiscriminate use of both forms of writing in a single piece of work.
- Identify, with the adult learner, situations in which it can be useful to know how to print:
 - ◇ to fill in forms where each letter has to be written in a box
 - ◇ to communicate a clear, unmistakable message
 - ◇ to address an envelope, etc.

These situations can be used to promote the transfer of skills.

SUGGESTED INTERVENTIONS (cont.)

- Have the adult learner reproduce printed letters, first by using examples, then from memory. See the interventions suggested in sections 9.1 and 9.2.
- Present, in workshops, clear and plain examples of printed letters (lower and upper case) that the adult learner can consult with ease.
- Have the adult learner do numerous copying and dictation exercises that require him or her to print.
- First have the adult learner print the letters that he or she has mastered, and then identify the specific letters that pose problems and reproduce these letters.
- Link these copying exercises to meaningful situations by having the adult:
 - ◇ print the letters of his or her name on a form
 - ◇ copy a sign or poster that several people will read, etc.
- Use lined material to promote the acquisition of regular handwriting.

10. 10.2.	Can the adult learner reproduce all the letters of the alphabet: in cursive script?	
YES:	The adult learner can write in cursive script (attached letters) without difficulty.	<p data-bbox="1123 316 1864 462">NO: The adult learner has difficulty writing in cursive script. It is therefore necessary to verify if he or she has been taught to write in this way in the past:</p> <ul data-bbox="1123 495 1864 714" style="list-style-type: none"> <li data-bbox="1123 495 1864 609">• If so: Investigate and try to determine why the adult has difficulty writing cursive script. Based on your findings, you may suspect a learning difficulty. <li data-bbox="1123 641 1864 714">• If not: Proceed to show the adult learner how to write in cursive script.

SUGGESTED INTERVENTIONS

- Ensure that the adult learner is very familiar with the differences between printing and cursive writing, to prevent the indiscriminate use of both forms of writing in a single piece of work.
- Identify, with the adult learner, situations in which it can be useful to know how to write in cursive script:
 - ◇ to sign his or her name
 - ◇ to take notes quickly
 - ◇ to write personal messages, etc.

These situations can be used to promote the transfer of skills.

SUGGESTED INTERVENTIONS (cont.)

- Have the adult reproduce cursive letters, first by using examples, then from memory. See the interventions suggested in sections 9.1 and 9.2.
- Present, in workshops, clear and plain examples of cursive letters (lower and upper case) that the adult learner can consult with ease.
- Have the adult learner do numerous copying and dictation exercises that require him or her to write in cursive script.
- First have the adult learner write in cursive script the letters that he or she has mastered, and then identify the specific letters that pose problems and reproduce these letters.
- Link these copying exercises to meaningful situations by having the adult:
 - ◇ sign his or her name
 - ◇ write a short message to someone, etc.
- Use lined material to promote the acquisition of regular handwriting.
- Pay particular attention to:
 - ◇ the links between more complex letters (e.g. b, v, w, x) and other letters
 - ◇ the shapes of letters with common features (e.g. q and g, m and n, h and k, etc.)
(it may be useful to point out the similarities and differences between these letters)
 - ◇ the continuous movement required to write cursive script. The adult learner can be instructed to dot i's, cross t's and add other orthographical signs only after writing a whole word, to avoid interfering with the rhythm of the handwriting and the regularity of the script

10.	Can the adult learner reproduce all the letters of the alphabet:	
10.3.	using a keyboard?	
YES:	The adult learner can write using a keyboard.	NO: The adult learner cannot write using a keyboard. If the adult can print and can write in cursive print, do not pay too much attention to this difficulty. However, if typing is the only option for the adult, time and energy must be devoted to identifying and making the adaptations required to learn to write using a keyboard.

SUGGESTED INTERVENTIONS

- At the beginning of keyboard training, suggest brief activities, so the adult learner has enough time to complete the task at hand during a single work session.
- Whenever possible, provide the adult learner with a copy of the finished product. If the work has been done on a computer, print a copy.
- Begin by presenting activities that allow the adult learners to become familiar with the keyboard, without worrying about the spelling of words. For example:
 - ◇ copying exercises
 - ◇ dictation exercises involving letters
 - ◇ activities that allow the learners to explore the keyboard and discover, by themselves, the uses of the various keys

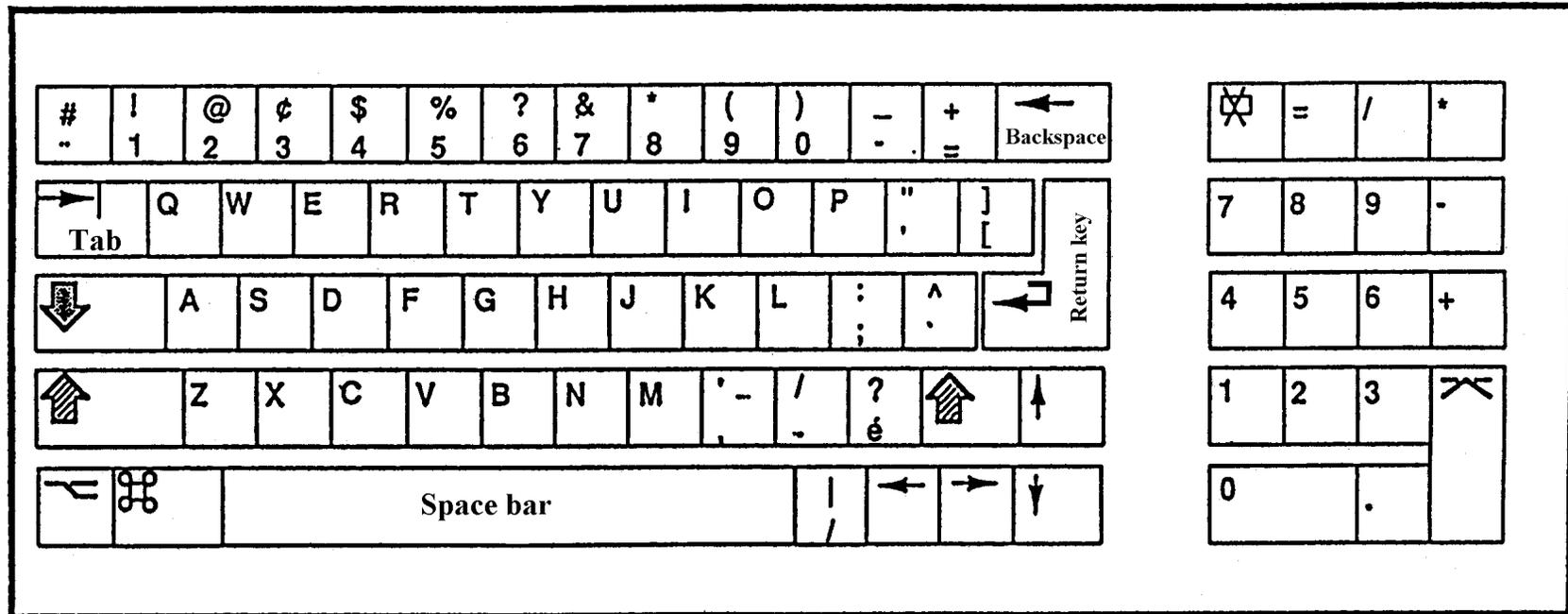
SUGGESTED INTERVENTIONS (cont.)

- Give the adult learner a copy of a keyboard on paper (see keyboard on next page). Have the adult note the positions of the most frequently used letters and functions on the keyboard: shift key, punctuation signs, symbols, etc. Point out that the letters are not arranged in alphabetical order.
- Pay particular attention to the keys with two symbols and those that control various functions: shift key, return key, space bar, etc. Have the adult learner complete exercises involving these keys.
- Help the learner develop the dexterity required to use the keyboard, by means of various exercises involving fine motor skills (threading a needle, cutting out shapes, colouring, etc.) or by means of stretching exercises for the fingers (tapping, opening and closing the hands energetically, pointing with each finger, etc.).
- Show adult learners who have difficulty striking the keys with their fingers how to use the appropriate instrument to do so: pencil, head stick (for people with serious motor problems), etc.

N.B.: The use of computers is growing in literacy training groups and centres. Many resources are now available, including the *Oregon NIFLNET Project* (see bibliography).

SUGGESTED INTERVENTIONS (cont.)

THE MACINTOSH PLUS KEYBOARD



This sign represents a line change.



When this arrow is **PRESSED DOWN**, all the letters typed will be **CAPITALS**.



By pressing on this arrow and keeping the key pressed down, capital letters or special characters can be typed.

For example: <!"\$%?&*()_+"':?/@#

11.	When asked to write in English, does the adult learner produce:	
11.1.	legible work?	
YES:	The adult learner's work is legible.	NO: The adult learner's work is not legible. Consider suggesting exercises to improve the presentation of his or her work.

SUGGESTED INTERVENTIONS

- Show the adult learner the difference between legible and illegible work by comparing two of his or her assignments. This can help make the adult aware of the conscious or unconscious judgments we tend to make about people based on the way their work is presented.
- Encourage the adult learner to take pride in work that is well done:
 - ◊ Use positive reinforcement when the work is legible.
 - ◊ Have the adult learner make the necessary changes when the work is careless or illegible.
- Encourage the adult learner to adopt work habits such as:
 - ◊ using a pencil rather than a pen, to make it easier to correct errors
 - ◊ using an eraser to correct mistakes rather than crossing out words or writing over passages that have to be corrected
 - ◊ using the right tools: a well-sharpened pencil, an eraser that does not leave marks, lined paper or a ruled sheet that is visible through unlined paper
 - ◊ adopting the proper posture for writing; see the interventions suggested in section 2
 - ◊ ensuring that one's hands and work surface are clean

SUGGESTED INTERVENTIONS(cont.)

- ◇ doing the work in two stages: a rough copy that can be erased and marked up, and a final copy that has been rewritten correctly
- ◇ taking the time required to produce legible work
- Help adult learners improve the legibility of their work by encouraging them to:
 - ◇ set aside short periods every day for writing exercises (reproducing letters)
 - ◇ use one of the various copybooks available on the market
 - ◇ improve the shape of letters by working on a large surface such as a board, a large sheet of paper, etc., then gradually reducing the size of the work surface

It may also be useful to consult the interventions suggested in sections 9.1, 9.2, 10.1 and 10.2 of this module.

It may also be useful to consult the interventions suggested in sections 9.1, 9.2, 10.1 and 10.2.

- Suggest that the adult learner use the type of writing, either printing or cursive script, that he or she has mastered best when preparing the final copy of assignments.

11.	When asked to write in English, does the adult learner produce:	
11.2.	work that is well organized on the page, in terms of use of space?	
YES:	The adult learner's work is well organized in terms of use of space.	NO: The adult learner's work is not well organized in terms of use of space. The learner does not appear to understand, among other things, that it is important to begin at the top left-hand corner, and leave space between each line and each word. Consider suggesting corrective exercises.

SUGGESTED INTERVENTIONS

- Help the adult learner understand the significance of the goal being pursued by comparing two pieces of written work: one that follows the basic rules regarding use of space—that begins in the upper left-hand corner, with a space between each line and each word, etc.—and another that does not follow these rules. Encourage the adult to compare the two pieces of work by asking questions such as:
 - ◇ “Which presentation is the clearest?”
 - ◇ “Which is the easiest to read?”
 - ◇ “Which looks more like a page in a book?”

SUGGESTED INTERVENTIONS (cont.)

- Encourage the adult learner to adopt certain habits with regard to the material presentation of written work. For example:
 - ◇ always writing his or her name and the date in the same place on the page
 - ◇ beginning the work at the top left-hand corner and on the correct side of the page, especially when using lined paper with holes
 - ◇ using lined paper with a margin, or a ruled sheet that is visible through unlined paper
 - ◇ doing the assignment in two stages: a rough copy, then a final copy that follows the basic rules regarding use of space

- Pay particular attention to the presentation of the work, returning to this aspect as often as necessary at the start of each session and monitoring the learners' work as they begin assignments. It is often assumed that adults who take part in training workshops are familiar with the rules regarding the use of space in written work. But this is not always the case. Do not hesitate to present these rules explicitly.

- If necessary, provide the adult learner with clear indicators on the work surface itself. For example:
 - ◇ Mark an X with a pencil or red felt pen at the place where the written work should begin.
 - ◇ Highlight the line defining the left margin.
 - ◇ Draw a frame around the area within which the written work is to be arranged.
 - ◇ Use the width of the index finger to clearly indicate the amount of space to be left between words (this space can be reduced once the habit has been acquired).

- Provide the adult learner with:
 - ◇ an example of the appropriate presentation or a guide sheet for each type of written assignment
 - ◇ for all types of written work (grammatical and literacy exercises, etc.), well-organized answer sheets that are exemplary in terms of use of space, with ample blank space for the answers

SUGGESTED INTERVENTIONS (cont.)

- Have the adult learners do numerous exercises that require them to respect a variety of very specific rules regarding the use of space when writing. For example, have them:
 - ◇ address envelopes
 - ◇ fill out forms

Word processing can be a good way of helping adults learn to present well-organized written work; various computer commands allow users to quickly change margins, correct the spacing between words, move phrases and paragraphs around, etc. If the adult learners enjoy using computers, why not encourage them to do so?

11.	When asked to write in English, does the adult learner produce:	
11.3.	disorganized work:	
11.3.1.	diagonally oriented?	
YES:	The adult learner starts at the beginning of a line and seems to follow an invisible diagonal line toward the bottom of the page. Consider suggesting corrective exercises.	NO: The adult learner does not have this problem.

11.	When asked to write in English, does the adult learner produce:	
11.3.	disorganized work:	
11.3.2.	half well oriented and half diagonally oriented?	
YES:	The adult learner starts at the beginning of a line and writes normally until the middle of the page. Suddenly, he or she seems to begin following an invisible diagonal line toward the bottom of the page. Consider suggesting corrective exercises.	NO: The adult learner does not have this problem.

11.	When asked to write in English, does the adult learner produce:	
11.3.	disorganized work:	
11.3.3.	beginning in the middle of the page?	
YES:	The adult learner begins in the middle of the page and continues to write in this way right to the bottom of the page. Consider suggesting corrective exercises.	NO: The adult learner does not have this problem.

11. When asked to write in English, does the adult learner produce:
- 11.3. disorganized work:
- 11.3.4. beginning correctly (at the upper left-hand corner), stopping in the middle of the page, at an imaginary vertical line, and continuing in this way right to the bottom?

YES: The adult learner makes this mistake. Consider suggesting corrective exercises. **NO:** The adult learner does not have this problem.

11. When asked to write in English, does the adult learner produce:
- 11.3. disorganized work:
- 11.3.5. beginning in the middle of the page, at the right-hand side of an imaginary line, and continuing in this way right to the bottom?

YES: The adult learner makes this mistake. Consider suggesting corrective exercises. **NO:** The adult learner does not have this problem.

11.	When asked to write in English, does the adult learner produce:	
11.3.	disorganized work:	
11.3.6.	with no order whatsoever, that is, with no starting point or any apparent direction?	
YES:	The adult learner makes this mistake. Consider suggesting corrective exercises.	NO: The adult learner does not have this problem.

SUGGESTED INTERVENTIONS

- Help the adult learner understand the significance of the goal being pursued by comparing two pieces of written work: one that follows the basic rules for well-organized written work—that begins at the upper left-hand corner and flows from left to right with the same level of regularity from the top to the bottom of the page—and another that does not follow these rules.

Encourage the adult learner to compare the two pieces of work by asking questions such as:

- ◇ “Which presentation is the clearest?”
- ◇ “Which is the easiest to read?”
- ◇ “Which looks most like a page in a book?”
- Point out the regularity of the presentation of a printed text: page in a book, magazine, newspaper article, etc.
- Draw the adult learner’s attention to the elements that make the material presentation of a text clearer: indents, paragraphs, headings, subheadings, etc.

SUGGESTED INTERVENTIONS (cont.)

- Show the adult learner how a reader's eyes move from left to right, from one end to the other of a single line, to demonstrate the importance of the organization of written work.
- Place special emphasis on the presentation of written work, returning to this aspect at the beginning of each session and as often as necessary. It is often assumed that adults who take part in training workshops are familiar with the rules regarding the organization of written work. But this is not always the case. Do not hesitate to present these rules explicitly.
- Encourage the adult to adopt certain habits with regard to the material presentation of written work. For example:
 - ◇ always writing his or her name and the date in the same place on the page
 - ◇ beginning the work at the top left-hand corner and on the correct side of the page, especially when using lined paper with holes
 - ◇ using lined paper with a margin, or a ruled sheet that is visible through unlined paper
 - ◇ doing the assignment in two stages: a rough copy, then a final copy that follows the basic rules regarding use of space
- If necessary, provide the adult learner with clear indicators on the work surface itself. For example:
 - ◇ Mark an X with a pencil or red felt pen at the place where the written work should begin.
 - ◇ Highlight the line defining the left margin.
 - ◇ Draw a frame around the area within which the written work is to be arranged.
 - ◇ Draw a line defining the right-hand margin, which the adult must reach, but not go beyond, before moving on to the next line.

SUGGESTED INTERVENTIONS(cont.)

- Provide the adult learner with:
 - ◇ an example of the appropriate presentation or a guide sheet for each type of written assignment
 - ◇ for all types of written work (grammatical and literacy exercises, etc.), well-organized answer sheets that are exemplary in terms of use of space, with ample blank space for the answers
- Have the adult learners do numerous exercises that require them to respect a variety of very specific rules regarding the use of space when writing. For example, have them:
 - ◇ address envelopes
 - ◇ fill out forms
- Review, if necessary, the concepts associated with spatial organization (top, bottom, left, right, on the line, etc.).

Word processing can be a good way of helping adult learners present well-organized written work; various computer commands allow users to quickly change margins, correct the spacing between words, move phrases and paragraphs around, etc. If the adult learners enjoy using computers, why not encourage them to do so?

11.	When asked to write in English, does the adult learner produce:	
11.4.	work with flawed graphic forms:	
11.4.1.	misshapen and disproportionate letters?	
YES:	The adult makes this type of mistake. Consider suggesting corrective exercises.	NO: The adult does not have this problem.

11.	When asked to write in English, does the adult learner produce:	
11.4.	work with flawed graphic forms:	
1.4.2.	irregular size and orientation?	
YES:	The adult learner forms letters irregularly, producing different shapes and sizes that are not always oriented in the same direction—in other words, the handwriting tends to fan out. Consider suggesting corrective exercises.	NO: The adult learner does not have this problem.

11.	When asked to write in English, does the adult learner produce:	
11.4.	work with flawed graphic forms:	
11.4.3.	overlapping?	
YES:	The adult learner writes letters on top of each other. Consider suggesting corrective exercises.	NO: The adult learner does not have this problem.

SUGGESTED INTERVENTIONS

- Explain clearly to the adult learner which aspects of his or her writing need to be improved.
- Begin by ensuring that the adult can print or write all the letters of the alphabet. See the interventions suggested in sections 9.1, 9.2, 10.1 and 10.2.
- Ensure that the adult learner:
 - ◇ uses only one type of writing, either printed **or** cursive script, within the same piece of work
 - ◇ uses the type of writing that he or she has mastered best when preparing the final copy of an assignment; however, it is still important to ensure that the adult becomes accustomed to using both types of script
- Always provide examples of adequate written work.

If the letters are misshapen and disproportionate:

- Ensure that the adult learner:
 - ◇ can distinguish between the two types of writing
 - ◇ can distinguish between upper-case and lower-case letters, and knows how to write them and when to use them
- Identify the specific letters that tend to be misshapen or disproportionate; set aside short periods of time each day during which the adult learner can work exclusively on the letters that he or she has trouble with.
- Suggest that the adult learner work on a large surface (the board or a large sheet of paper) in order to eliminate the constraints associated with using a restricted work surface. Once the adult has mastered the movements required to write the problem letters, gradually reduce the size of the work surface.
- Use lined paper that makes it easier to produce regular shapes and proportions.

SUGGESTED INTERVENTIONS (cont.)

- Encourage the adult learner to compare and examine letters that have similar shapes and common characteristics and that can be confused:
 - ◇ round letters: b, d, p, q, etc.
 - ◇ ascending and descending letters: h, k, etc.

If there are irregularities in terms of size and orientation of letters:

- Use paper that is lined both horizontally and vertically; the horizontal lines promote writing that is more regular, and the vertical lines prevent the writing from fanning out.
- Suggest that, when writing on unlined paper, the adult place a visible ruled sheet beneath the blank page.
- Have the adult learner do numerous copying exercises (letters, numerals, simple shapes); make sure that his or her writing respects the proper dimensions.
- Ensure that the adult learner has good seated posture for writing, holds writing instruments correctly and angles the page slightly, with the bottom toward the right for right-handed individuals and in the opposite direction for left-handed individuals.

If there is overlapping:

- Ensure that the adult:
 - ◇ distinguishes between the following elements: letters, syllables, words
 - ◇ understands that a word is made up of a series of letters arranged in a particular way, but that each one is distinct from the others
 - ◇ is capable of reproducing all the letters in the alphabet, one at a time, without overlapping. See the interventions suggested in sections 9.1, 9.2, 10.1 and 10.2.
- Using examples, show the adult learner how difficult it is to read words when the letters overlap.

SUGGESTED INTERVENTIONS (cont.)

- Show the adult learner how to use an eraser and have him or her use it whenever necessary.
- If necessary, identify the letters that consistently lead to overlapping. Help the adult learner take particular care when forming these letters. Consider suggesting copying exercises involving the problem letters.

12.	Can the adult learner reproduce the numerals 0 through 9:	
12.1.	when not copying an example?	
YES:	The adult learner can reproduce the numerals 0 through 9, without copying an example and without experiencing any motor problems.	NO: The adult learner has difficulty reproducing numerals. This may be due to a problem with motor memory: the adult no longer remembers the movement required to form the numeral. Consider suggesting corrective exercises.

12.	Can the adult learner reproduce the numerals 0 through 9:	
12.2.	when copying an example?	
YES:	The adult learner can reproduce all the numerals from 0 through 9 when copying an example, without experiencing any motor problems.	NO: The adult learner has difficulty reproducing numerals. This may be due to a problem with visual-motor coordination (eye-hand coordination) or with fine motor skills. Consider suggesting corrective exercises.

SUGGESTED INTERVENTIONS

- Develop motricity and visual-motor coordination by means of various exercises and simple assignments requiring a degree of precision: threading a needle, cutting out shapes, colouring, etc.
- Begin by having the adult learner reproduce numerals by following examples. Consider suggesting the following exercises:
 - ◇ Reproduce numerals on a large surface (the board, a large sheet of paper) and with various writing instruments (chalk, large felt pen, paintbrush, etc.). Encourage the adult to gradually reduce the size of the work surface and to begin using a pencil.
 - ◇ Trace the outline of various numerals by following dotted lines or using stencils.

SUGGESTED INTERVENTIONS (cont.)

- ◇ Use imitation: make the movement required to form the numeral yourself and describe it verbally. The adult learner then reproduces this gesture as accurately as possible and also describes it verbally. The numerals should be formed by means of gestures that move from top to bottom.
- Use various types of material, including:
 - ◇ a magnetic board with plastic numerals, to allow the adult learner to feel the shape of the numerals
 - ◇ a copybook, to allow the adult to gradually learn how to reproduce numerals
 - ◇ plastic-coated strips with numerals on them
- Have the adult learners use their powers of observation and visual discrimination by completing exercises such as:
 - ◇ spotting the differences between two apparently identical drawings
 - ◇ finding a given numeral among a group of similar numerals
 - ◇ describing the characteristics of each numeral: straight line, curve, ball, etc.
 - ◇ grouping, comparing and examining numerals with similar shapes and common features: 6 and 9, 3 and 8, 2 and 5, etc.
- Identify the specific numerals that are causing problems and have the adult learner reproduce these numerals; begin by having the learner reproduce the numerals that he or she has mastered.
- Have the adult learner do numerous copying exercises: letters, numbers, simple shapes, etc.
- Suggest various exercises that give the adult learner an opportunity to reproduce numerals, without copying them, such as:
 - ◇ “drawing” a numeral that has been dictated
 - ◇ describing the numerals dictated; dictation exercises involving problem numerals can be conducted regularly

13.	When writing numerals, does the adult learner produce:	
13.1.	legible work?	
YES:	The adult learner's work is legible.	NO: The adult learner's work is not legible. Consider suggesting exercises that will improve presentation.

SUGGESTED INTERVENTIONS

- Show the adult learner the difference between legible and illegible work by comparing two of his or her assignments. This can help make the learner aware of the conscious or unconscious judgments we tend to make about people based on the way their work is presented.
- Encourage the adult learner to take pride in work that is well done:
 - ◇ Use positive reinforcement when the work is legible.
 - ◇ Have the adult learner make the necessary changes when the work is careless or illegible.
- Encourage the adult learner to adopt certain work habits such as:
 - ◇ using a pencil rather than a pen to make it easier to correct errors
 - ◇ using an eraser to correct mistakes rather than crossing out numerals or writing over sections that have to be corrected
 - ◇ using the right tools: a well-sharpened pencil, an eraser that does not leave marks, lined paper or a ruled sheet that is visible through unlined paper
 - ◇ adopting good seated posture for writing; see the interventions suggested in section 2

SUGGESTED INTERVENTIONS (cont.)

- ◇ ensuring that one's hands and work surface are clean
- ◇ doing the work in two stages: a rough copy that can be erased and marked up, then a final copy that has been rewritten correctly
- ◇ spending enough time recopying the assignment to produce legible work
- Help adult learners improve the legibility of work by encouraging them to:
 - ◇ set aside short periods every day to practise writing numerals
 - ◇ use a copybook containing exercises focusing on the reproduction of numerals
 - ◇ improve the shape of numerals by working on a large surface (the board, a large sheet of paper, etc.), then gradually reducing the size of the work surface

It may also be useful to consult the interventions suggested in sections 12.1 and 12.2.

13.	When asked to write numerals, does the adult learner produce:	
13.2.	work that is well organized on the page, in terms of use of space?	
YES:	The adult learner's work is well organized in terms of use of space.	NO: The adult learner's work is not well organized in terms of use of space. The adult does not appear to understand, among other things, that work must begin in the top left-hand corner and that enough space must be left between the symbols to avoid producing an indecipherable jumble. Consider suggesting corrective exercises.

SUGGESTED INTERVENTIONS

- Help the adult learner understand the significance of the goal being pursued by comparing two pieces of written work: one that follows the basic rules regarding use of space—that begins in the upper left-hand corner, with a space between each line and each number, etc.—and another that does not follow these rules.

Encourage the adult to compare the two pieces of work by asking questions such as:

- ◇ “Which presentation is the clearest?”
- ◇ “Which is the easiest to read?”
- ◇ “Which looks most like a page in a book?”

SUGGESTED INTERVENTIONS (cont.)

- Encourage the adult to adopt certain habits with regard to the material presentation of written work. For example:
 - ◇ always writing his or her name and the date in the same place on the page
 - ◇ beginning the work at the top left-hand corner and on the correct side of the page, especially when using lined paper with holes
 - ◇ using lined paper with a margin, or a ruled sheet that is visible through unlined paper, so as to become accustomed to writing on the lines
 - ◇ using graph paper to make it easier to present the calculations of operations involving numbers (one numeral per square, well-aligned columns), or else horizontally lined paper turned so the lines become vertical
 - ◇ doing the assignment in two stages: a rough copy, then a final copy that follows the basic rules regarding use of space
- Place special emphasis on the presentation of work, returning to this aspect as often as necessary at the start of each session and monitoring the learners' work as they begin assignments. It is often assumed that adults who take part in training workshops are familiar with the rules regarding the use of space in written work. But this is not always the case. Do not hesitate to present these rules explicitly.
- If necessary, provide the adult learner with clear indicators on the work surface itself. For example:
 - ◇ Mark an X with a pencil or red felt pen at the place where the written work should begin.
 - ◇ Highlight the line defining the left margin.
 - ◇ Draw a frame around the area within which the written work is to be arranged.
 - ◇ Use the width of the index finger to clearly indicate the amount of space to be left between numbers (this space can be reduced once the adult learner has developed the habit of leaving space between numbers).

SUGGESTED INTERVENTIONS (cont.)

- Provide the adult learner with:
 - ◇ an example of the appropriate presentation or a guide sheet for each type of written assignment (problems to be solved, exercises for learning mathematical operations, etc.)
 - ◇ for all types of written work, well-organized answer sheets that are exemplary in terms of use of space, with ample blank space for the answers and/or clearly numbered possible answers
- Have the adult learners do numerous exercises that require them to respect a variety of very specific rules regarding the use of space when writing numerals and numbers. For example, have them:
 - ◇ fill in the numbers on a form (date, address, telephone number, etc.)
 - ◇ align numbers so as to perform a calculation

Word processing can be a good way of helping adult learners present well-organized written work; various computer commands allow users to quickly change margins, correct the spacing between numbers, create columns, etc. If the adult learners enjoy using computers, why not encourage them to do so?

13.	When asked to write numerals, does the adult learner produce:	
13.3.	disorganized work:	
13.3.1.	misaligned columns (ones, tens, hundreds, etc.)?	
YES:	The adult learner has problems with spatial organization. Consider suggesting corrective exercises.	NO: The adult learner does not have this problem.

13.	When asked to write numerals, does the adult learner produce:	
13.3.	disorganized work:	
13.3.2.	an inability to reproduce the mechanical flow of an operation?	
YES:	The adult learner does not appear to know how to use space, continuously and mechanically, in accordance with the basic operation to be performed. Consider suggesting corrective exercises.	NO: The adult learner does not have this problem.

SUGGESTED INTERVENTIONS

- First ensure that the adult learner understands the concept of place value. See the interventions suggested in sections 5.1, 5.2 and 5.3 of the “Arithmetic (Reading)” module.
- Have the adult learner do numerous activities that require him or her to transcribe numbers dictated by another person. For example:
 - ◊ Conduct dictation exercises involving numbers.
 - ◊ Dictate various types of information involving numbers, such as winning lottery numbers, addresses and so on.

SUGGESTED INTERVENTIONS (cont.)

- Use a place value table (or a counting board) to teach the adult learner how to correctly align numbers in columns, according to the place value of the various digits of each number. For example:

hundreds	tens	ones
1	5 3	4 7

- Help the adult learner understand why it is essential that columns of numerals be correctly aligned when performing operations. If necessary, use objects (small objects grouped into ones, tens and hundreds) and a counting board to do simple addition and subtraction.
- Ensure that the adult understands and has mastered the techniques involved in performing the four basic operations. See the interventions suggested in sections 7.1, 7.2, 7.3 and 7.4 of the “Arithmetic (Reading)” module and sections 4.1, 4.2, 4.3 and 4.4 of the “Arithmetic (Writing)” module.
- Step by step, using graph paper or horizontally-lined paper positioned vertically, teach the adult learner how to correctly arrange numbers in columns. For example:
 - ◇ Present an example where numbers have been arranged properly to solve simple equations; gradually increase the degree of difficulty.
 - ◇ Have the adult learner correctly arrange in vertical columns, using graph paper or horizontally-lined paper positioned vertically, operations that are either dictated or presented horizontally.
 - ◇ If necessary, break down the numbers (153 = 1 hundred, 5 tens and 3 ones) and align the digits in the appropriate column, according to their place value.
 - ◇ If necessary, when aligning digits to solve an equation, give the columns headings (ones, tens, hundreds).

SUGGESTED INTERVENTIONS (cont.)

- Ensure that the adult learner is familiar with the vocabulary of spatial organization: top, bottom, below, above, beside, to the right, to the left, etc.
- To teach the adult learner how to reproduce the mechanical flow of an operation while using space appropriately:
 - ◇ first present additions and subtractions involving numbers made up of the same number of digits
 - ◇ present the operations vertically. For example:

$$\begin{array}{r}
 275 \\
 + 150 \\
 \hline
 \end{array}
 \qquad
 \begin{array}{r}
 318 \\
 - 174 \\
 \hline
 \end{array}$$

- ◇ pay particular attention to the presentation of examples and ensure that the digits are aligned correctly
- ◇ gradually introduce operations involving numbers made up of different numbers of digits. For example:

	1	5	3	
+		7	2	

If necessary, fill the empty boxes with zeros:

$$\begin{array}{r}
 153 \\
 + 072 \\
 \hline
 \end{array}$$

Some adults have learned techniques other than those generally taught, especially for subtraction with borrowing and for division. If the adults have mastered these techniques, it is preferable to allow them to go on using them; however, always ensure that the digits are aligned correctly and that the operation is always presented in the same way.

14. Does the adult learner's work show evidence of the smudging problems associated with left-handed people?

YES: Smudging is **not a learning problem in itself**, but it causes material difficulties for left-handed people: the staining or soiling of work sheets can be upsetting to the learner.

NO: The adult learner does not have this problem.

SUGGESTED INTERVENTIONS

- Make the adult learner aware of the necessity of adopting good habits and using good writing instruments that reduce the inconveniences caused by smudging. For example, have him or her:
 - ◇ use a well-sharpened pencil
 - ◇ ensure that the lead is not too greasy
 - ◇ have dry, clean hands
 - ◇ use an eraser that does not leave marks, etc.
- Suggest that the adult use a fast-drying, erasable ink pen; errors can thus be neatly corrected after being erased and smudging is less likely to occur.
- Help the adult experiment with various positions of the forearm and wrist, whether bent or not, when writing. Encourage the use of the most comfortable position that reduces smudging most effectively.

VIII—REMEDIAL FIELD
MODULE: GRAPHIC MOTRICITY
BIBLIOGRAPHY

Cowles, S. *Oregon NIFLNET Project*. Albany: National Institute for Literacy, 1997.

Goldstein, R. *Taking the Mystique Out of Learning Disabilities, A Practical Guide for Tutors*. Saint John: Laubach Literacy of Canada, 2000.

