

KEYBOARDING

Building Computer Skills for the Nineties

Helping students develop the language skills needed to think, speak, and write purposefully, meaningfully, and creatively has always been an important part of the teacher's task. Keyboarding¹ can help students acquire these skills. The ability to keyboard efficiently is becoming a basic skill for learning and careers in the 1990s and beyond.²

Logically, formal instruction in keyboarding should be scheduled during language arts classes. Over the past 70 years many studies reveal the advantages of combining typing (keyboarding after computers became available) with these subjects.³ Some of the benefits gained from typing or keyboarding skills include greater independence in reading; enhanced vocabulary; improvement in reading comprehension, spelling, punctuation, and listening skills; increased interest in school; and a longer attention span.⁴

Interestingly, handwriting skills are not lost when students learn keyboarding.⁵ Researchers have also found that students with high computer access "write more and better" and make "more substantial" revisions than those with less computer access.⁶ However, word-processing skills, by themselves, have not been shown to



fer to defer training until grade five or six.

Keyboarding education should be provided before students begin word processing.⁹ Authorities differ regarding the number of gross words per minute (GWPM)¹⁰ pupils in grades four through six should achieve, though most agree they should learn to keystroke faster than they can write (seven to 10 words per minute).¹¹

Children cannot be expected to learn to write and revise while they acquire keyboarding skills. Still, meaningful applications that require composing at

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lead to improved writing.⁷

Most third and fourth graders have the physical maturity necessary for keyboarding. They also read, a major prerequisite for success.⁸ Consequently, the church's curriculum guides, like many others, recommend that formal instruction in keyboarding begin in these grades. Some teachers, however, pre-

the computer should be included with keyboarding practice, since most use of computers goes beyond simply copying data.

Software, textbooks, and supplementary resources for instruction must be appropriate to pupil maturity and achievement levels. The materials should introduce the keyboard, demonstrate correct posture and hand placement, teach proper fingering, and provide motivational reinforcement. Both youngsters and teachers will appreciate easy-to-understand directions. Software loading time should be minimal, and students should be able to exit from and return to parts of lessons. Recordkeeping also is an important feature to consider.

BY RUTH POPE

The Teacher's Role

Teachers have a major role in providing instruction and reinforcement. They need to refine their own skills. Workshops can give a helpful overview of the goals of keyboarding at the elementary level as well as strategies for reaching these goals. The keyboarding instructor needs to "understand the psychology of skill building."¹² If the textbook list does not include software and/or texts, he or she must choose them. The teacher also must find ways to integrate keyboarding into the curriculum. This will require planning for whole-group instruction while modifying lessons to meet personal needs. Children's aptitude for keyboarding differs, just as do their abilities in other areas.

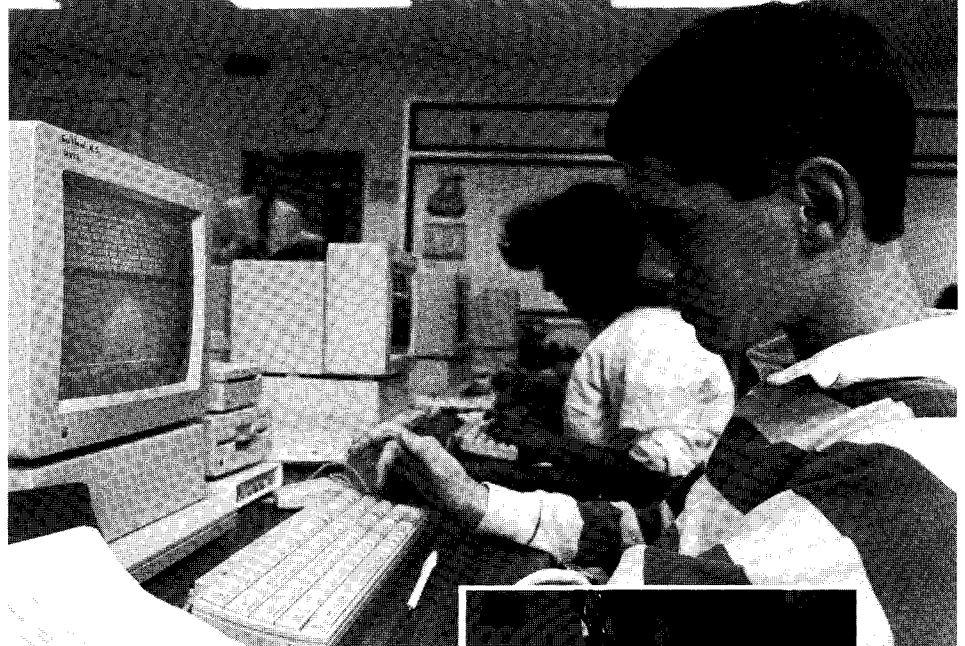
Though studies confirm that children can learn touch typing using computer tutorials,¹³ the teacher must monitor individual progress and provide feedback. While software may lock the cursor until the correct key is struck, it cannot evaluate the operator's technique or determine which finger is used to strike the key.

When many students must share a computer, scheduling will present a major challenge. School fund-raising drives or tax-exempt donations of used equipment may help to make computers available to more children.

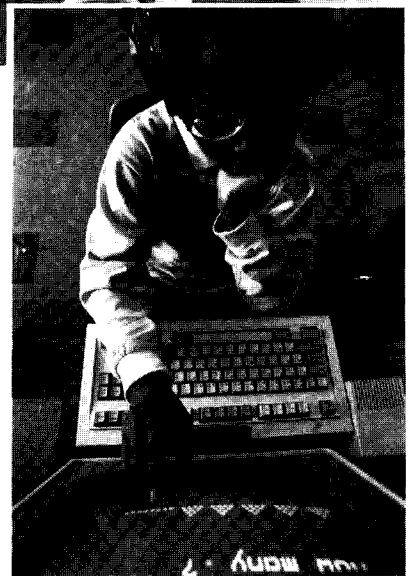
Hints for Teaching Keyboarding

The following hints for teaching keyboarding in grades four to six are based on a synthesis of articles and books, classroom teaching experiences, and recommendations from a college instructor¹⁴ of keyboarding.

1. Use adjustable furniture and provide adequate glare-free lighting.
2. Plan an organized, sequential program.
3. Provide daily instruction for a minimum of six to eight weeks. For the first year, review weekly. Schedule subsequent lessons from time to time. Studies show that students benefit from follow-up instruction.¹⁵
4. Set specific goals, and seek to motivate students during every class period.
5. Vary the length of practice sessions according to the age and attention span of the youngsters. Recommended



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time generally is 15-40 minutes.

6. Allow students to look at the keyboard early in their experience. "Vision is important when learning a motor skill."¹⁶ Later, they should look at their copy and rely on their sense of touch.

7. Emphasize technique. "With proper technique, speed and accuracy will come with practice."¹⁷

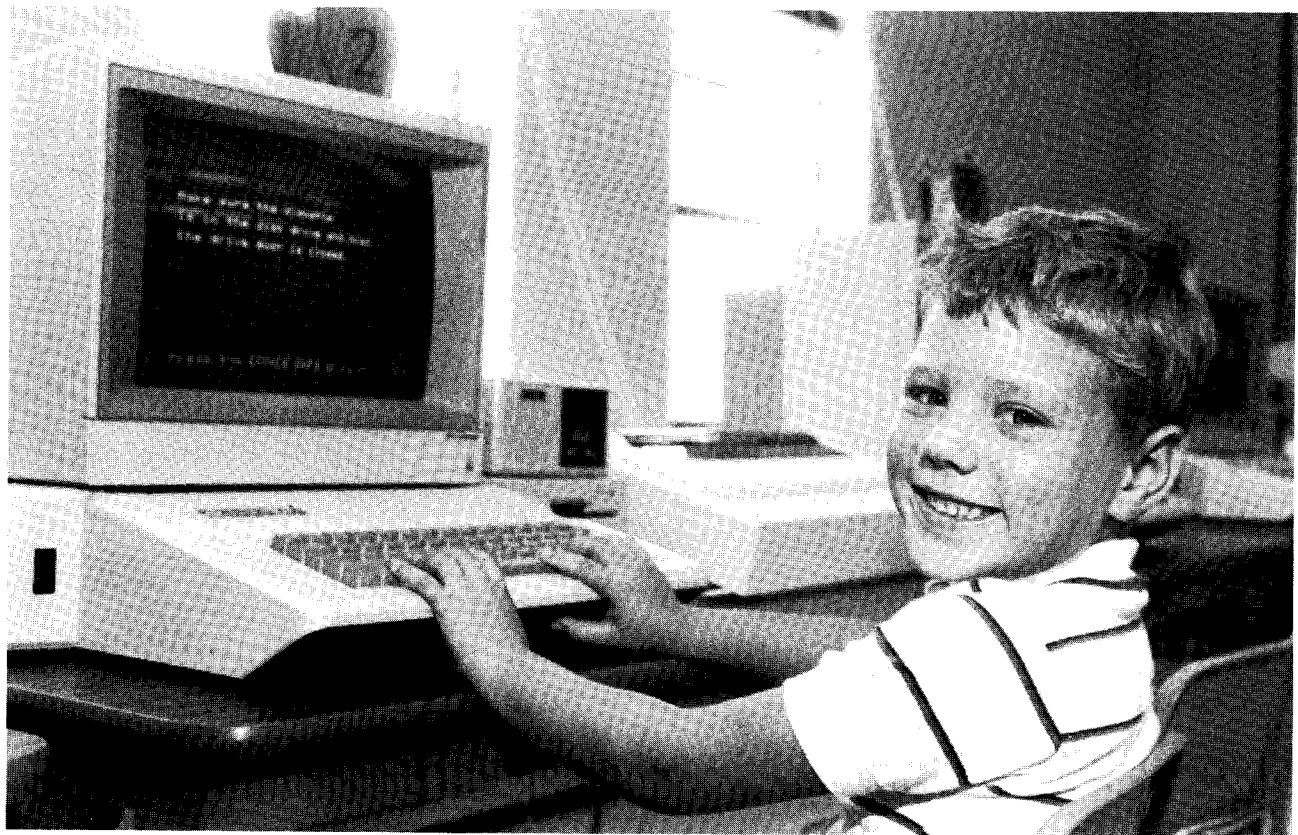
8. Monitor student progress carefully. Immediate feedback is critical to the learning process.¹⁸ Children usually are unaware of their improper position or techniques.

9. If necessary, introduce the fingering for a key before it appears in the textbook or software. For example, I had fourth graders who raised their wrists and turned their hands

sideways to strike the "delete" key with their tucked-under thumbs.

10. Evaluate skills and mark a checklist of accomplishments by observing students as they work. "Error limits must be generous; generally, three or more errors should be allowed per line of type."¹⁹

Language activities incorporated into students' early keyboarding experiences should require brief responses. These responses should utilize only the letters the students have learned. Students can be asked to form words from letters provided, list words that rhyme with those supplied,



add appropriate suffixes and/or prefixes, or type synonyms (or antonyms) for assigned words.

After students know all the letter positions, they can write a memo to a classmate, prepare a vocabulary sheet for a textbook chapter, compose a caption for a picture or cartoon, plan a menu, write a poem following a specific form, take a spelling test (allow time for corrections), or complete open-ended sentences such as "When I dream, I like to think about" In addition, pupils should begin word-processing exercises.

Many teachers supply documents for students to correct. This is a two-part procedure. Students must first recognize the errors, and then learn how to remedy them. Students may be asked to check spelling, correct punctuation, search and replace misspelled or misused words, and arrange sentences and paragraphs. They do not need to reformat, as this occurs automatically. Through activities like these, pupils become aware of the power of word processing. They also learn to recognize the limitations of such features as

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spelling checkers.

Using Their New Skills

After students learn to keyboard efficiently and become comfortable with the basics of word processing, they can use their new skills at all stages of the writing process: prewriting, composing, revising, and editing. However, they need adequate computer time for each step. In spite of the ease with which computers permit data entry and changes, "the quality of instruction is more significant than access to computers in learning to write."²⁰ Some teachers use commercial software designed to help teach writing, while others create their own files with prompts to guide students as they work. A structured report or news article provides a good starter activity in writing.

During prewriting, students should discuss and list possible topics. They should make notes about what they already know, then read, interview, watch films, take field trips, and ask questions.²¹ At this time pupils do not need to worry about sequence, structure, grammar, or spelling.

Composition

Next comes composition, when the initial draft is prepared. Students should key in their roughly organized ideas in unstructured form. If they wish, they can move work done during prewriting into their draft document. Pupils should not write papers in longhand and then transcribe them.

Revision focuses on strengthening the content, reasoning, organization, and flow. Students should arrange materials in sequence and insert or delete items to make the content meaningful and cohesive.

Edit and Print

At the editing stage students should check punctuation, spelling, and word usage. Using the computer's thesaurus will help

them consider alternate word choices. The last step is to print the work, and proofread it a final time.

The entire writing process should be a cooperative learning experience. Students can help each other by collaborating on ideas, making suggestions for revisions, and proofreading. Finally, they can share documents with the class, either by reading them orally, making them available on a bulletin board, or binding them in a book.

"It seems clear . . . that within the next 5 years elementary school children will be making extensive use of computer tools in the learning process,"²² particularly in the development of language competence, according to Simonson and Thompson. To use these tools efficiently, youngsters need to learn keyboarding and word processing. Adventist teachers must help their students learn and practice these important skills. ✍

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NOTES AND REFERENCES

1. Keyboarding is defined as learning the correct fingering by touch in order to enter data (letters and numbers) easily and efficiently.

2. Robert E. Gades, "The Effects of Computer Use on Keyboarding Technique and Skill," *Business Education Forum*, 40:5 (February 1986), p. 36; *Developing Keyboarding Skills to Support the Elementary Language Arts Program* (Albany, N.Y.: The University of the State of New York/The State Education Department Bureau of Curriculum Development, 1986), p. 1; Jo Behymer and Lonnie Echnernacht, "Keyboarding Instruction—A Comparison of Second and Third Grade Students," *Business Education Forum*, 41:6 (March 1987), pp. 30, 31; Denise Belick Binderup, "Computer Keyboard Savvy," *Instructor*, 97 (April 1988), p. 31.

3. Claudia Jensen, Kenneth Kaser, Mark Lovern, Julian Milkes, Sue Rigby, "Bibliography: Elementary Typewriting/Keyboarding (1930-1986)," a handout distributed at the National Business Education Association Convention, Boston, Massachusetts, April 1987.

4. James L. Hoot, "Keyboarding Instruction in the Early Grades: Must or Mistake?" *Childhood Education*, 63:2 (December 1986), p. 96; Larry Hoe and Brenda Summers, *Elementary Keyboarding and Your Writing Program* (Vancouver, B. C.: Vancouver School Board Publications, Curriculum Resource Processing Centre, 1988), p. 11.

5. *Ibid.*

6. Daniel E. Kinnaman, "Special Centers for Research in Educational Technology," *Classroom Computer Learning*, 10:6 (March 1990), p. 34.

7. Robin Porter, "High Tech or Slate—When It Comes to Writing, The Teacher Matters," *Journal of Computing in Teacher Education*, 5 (Winter 1988-1989), p. 21.

8. Edward Brower, "Business Education Methods: Progress From Adversity," *Business Education Forum*, 40:41 (March 1987), p. 31.

9. Betty L. Boyce, "Taking a Leadership Role in Elementary Keyboarding," *Business Education Forum*, 42:8 (May 1988), p. 16; Karl Koenke, "Prelude to Composing at the Computer," *English Education*, 19 (December 1987), p. 245; George S. Rhodes, "Computer Literacy and Keyboarding Instruction: A



After students learn to keyboard efficiently and become comfortable with the basics of word processing, they can use their new skills at all stages of the writing process: prewriting, composing, revising, and editing.

Second Look," *The Balance Sheet*, 71 (September/October 1989), p. 35.

10. GWPM is calculated by dividing the total number of keystrokes per minute by five without making any adjustments for errors.

11. Hoe and Summers, p. 9. Ten GWPM is adequate, according to Keith Wetzel, "Keyboarding Skills: Elementary, My Dear Teacher?" *The Computing Teacher*, 12 (June 1985), p. 16.

However, Evelyn Kisner, "Keyboarding—A Must in Tomorrow's World," *The Computing Teacher*, 11 (February 1984), p. 22, states that 25 GPM should be achieved before students engage in word processing.

12. Barbara Williams, "Preparing Teachers to Teach Keyboarding to Elementary Students," *Business Education Forum*, 42:6 (March 1988), p. 28.

13. Hoot, p. 100.

14. The author acknowledges the contributions of the late Lucille Schmidt Trueblood, adjunct faculty member of the Business Department at Atlantic Union College.

15. Truman H. Jackson and Diane Berg, "Elementary Keyboarding—Is It Important?" *The Computing Teacher*, 13 (March 1986), pp. 8, 9.

16. Hoe and Summers, p. 11; and Wetzel, p. 17.

17. "Appendix B: Guidelines for Teaching Keyboarding," *Conceptual Framework for Computer Education K-12*. (Prepared for the North American Division Curriculum Committee, Washington, D.C., n.d.), p. 44.

18. Williams, p. 28.

19. Jackson and Berg, p. 11.

20. Kinnaman, p. 34.

21. Jon Madian, "Language Arts, Word Processing, and the Curriculum Renewal Movement," *Microsoft Works in Education*, 1 (March 1990), p. 5.

22. Michael Simonson and Ann Thompson, *Educational Computing Foundations* (Columbus, Ohio: Merrill Publishing Company, 1990), p. 163.