A Journey Within a Journey: The Journey of Three Computer Learners on a Journey Down Under

Valerie G. Hall[*]   Brenda P. Dixey[†]

Susan L. Nierstheimer[‡]   David G. O'Brien[**]

[*]Ball State University

[†]Oklahoma State University

[‡]Illinois State University
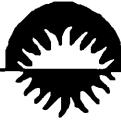
[**]Purdue University

A Journey Within a Journey: The Journey of Three Computer Learners on a Journey Down Under

Valerie G. Hall, Brenda P. Dixey, Susan L. Nierstheimer, and David G. O'Brien

Abstract

This is the story of the journey of three literacy teachers learning about classroom use of computers and developing a computer-driven unit on Australian animals. As frightened as we were of technology, we wanted our students to have positive experiences with computers. We also wanted the computer to be a useful tool for our students rather than a meaningless rote activity. We wanted our students to use a variety of literacy materials, participate in many reading and writing responses, and interact in groups as they used the computer as one medium for learning. In this article we describe our learning process, along with the struggles as well as the benefits. As a result of our personal learning journey, an interactive unit was developed that transported students on a journey to Australia.

A Journey Within a Journey:
The Journey of Three Computer Learners
on a Journey Down Under

Valerie G. Hall
Brenda P. Dixey
Susan L. Nierstheimer
David G. O'Brien

Fears and Lack of Confidence
> *"Nothing great was ever accomplished without enthusiasm."*
> *Ralph Waldo Emerson*

This is the story of the journey of three literacy teachers learning about classroom use of computers and developing a computer-driven unit on Australian animals. As frightened as we were of technology, we wanted our students to have positive experiences with computers. We also wanted the computer to be a useful tool for our students rather than a meaningless rote activity. We wanted our students to use a variety of literacy materials, participate in many reading and writing responses, and interact in groups as they used the computer as one medium for learning. In this article we describe our learning process, along with the struggles as well as the benefits. As a result of our personal learning journey, an interactive unit was developed that transported students on a journey to Australia.

We were hoping Emerson was right! More specifically, we were praying enthusiasm and good attitudes would carry us where self-confidence and knowledge were lacking. After a combined 30 years teaching, and a lapse of 30 years since we had been students, we entered our first technology class as graduate students with fear and trepidation. When we completed our undergraduate work, the modern essential equipment was an electric typewriter. As three experienced, but computer-shy teachers,

we registered for a summer computer course because we felt we were far behind the technology curve in relationship to our instruction.

As literacy teachers, we had little experience with computers except as word processors. Growing up before the age of technology, we lacked confidence in our abilities to merge onto the information superhighway. Negative experiences such as "losing" data, struggling to create charts and graphics, and trying to understand complicated instructions in the "easy-to-read" software manuals undermined our confidence as well as instilled fear that made us reluctant to begin the graduate level computer course.

There we sat in a class with a professor younger than we were and students who could have been our own children. At the first class meeting, we quickly identified those students who were far above us in computer knowledge. This only reinforced our insecurities about our success with technology. However, we were comforted to discover that an assigned culminating project as well as preliminary software experimentation and evaluation would be accomplished in self-selected, collaborative groups. Because the three of us were already acquainted and were interested in similar literacy issues, we chose to work together as a group and felt less intimidated about the technological journey we were undertaking.

Moreover, we knew of the benefits of technology integration in the classroom. The application of technology in the classroom has advanced rapidly since the late 1970s. Many schools now provide computers and software to augment literacy instruction (Butler and Cox, 1992; Daiute, 1992; Reinking, 1994; Reinking and Bridwell-Bowles, 1991; Wepner, 1991; Wepner, 1992). A range of computer applications in literacy lessons have been documented (Balajthy, 1989; Blanchard, Mason, and Daniel, 1987; Blanchard and Rottenberg, 1990; DeGroff, 1990; Moore, 1991). Literacy educators have used computers to teach literacy in the content areas (Blanchard and Rottenberg, 1990), adult education, and teacher education.

Struggles and Frustrations

As we began our group analysis of software and other related as-
signments, we developed strategies for coping with unfamiliar language of
computer manuals as well as basic operational difficulties. For instance, we
supported each other as a team and sought expert advice. In the computer
labs, we huddled together in front of one screen conferring about what to
do next. The computer students who sat at their individual screens, seem-
ingly working with no difficulty, occasionally turned to look at us with
disdain. We became familiar with each of the university-employed tech-
nicians and depended upon their expertise to aid us in solving many of the
problems we encountered. Additionally, we had a colleague minoring in
computer education who become our unpaid consultant.

As we worked together at the computer, our greatest frustration con-
tinued to be attempting to understand the technical jargon in the instruc-
tional manuals that accompanied programs intended for use in the elemen-
tary classroom. Together the three of us discussed the possible meanings
and steps to access the software. With some pieces of software, we had
many failed attempts on the computer before we were successful. On
some occasions, we asked the professor and other students in the class to
interpret the instructions for us.

In addition to our struggle with instructions, time became another
critical factor. Because this was a summer course, we had no teaching re-
sponsibilities and were only registered for one class. Fortunately, we had
time available to us that we normally would not have had. Our lack of
schema for the language of the computer manuals necessitated spending
many hours understanding the instructions before we could use the soft-
ware and critique its value for classroom use.

A major assignment in this class involved completing a one-page
review form for ten pieces of educational software. Because we were
determined to learn about the available software and were concerned about
our progress in the form of the final grade for the course, we willingly
devoted the essential 8 to 10 hours per week for the four weeks of the

course. Struggling together for hours at the keyboard with books in hand, we validated our belief in the Vygotskian philosophy that meaning is socially constructed through interactions with others (1978). Additionally, we worked independently seeking advice from friends with computer expertise and considering the form for our final project.

Positive Outcomes for Us

After struggling through the frustrations of often incomprehensible language and extensive time demands, we gained new computer knowledge that exceeded our expectations. We learned basic computer language and skills from the various materials we examined. We collected a bibliography of software beneficial in the elementary classroom. After doing various types of activities on the computer, we gained confidence in our abilities to expand upon our new knowledge to build a computer-assisted unit. As teachers, the three of us had frequently borrowed ideas from numerous sources and adapted them to our students and the goals we had for them. Now we were convinced we could transfer the ideas and knowledge we had recently acquired into a useful computer unit for the classroom.

An amusing rhyme from the book *Wombat Stew* by Marcia K. Vaughn (1984) and illustrated by Pamela Lofts sparked our imaginations.

> *Wombat stew*
> *Wombat stew*
> *Gooey, brewy,*
> *Yummy, chewy,*
> *Wombat stew!*

We decided to create a thematic unit on Australia by integrating technology into a literature-based unit for upper elementary students based on our educational philosophy of holistic learning. As DeGroff (1990) indicated, the teacher's beliefs about curriculum and instruction rather than technology determine the role of computers in the classroom. The thematic unit we created supports our instructional philosophy and gives children opportunities to engage in reading and writing activities which embody our philosophy and goals of instruction (Wepner, 1990).

Wombat Stew captured our attention because of the clever dialogue and Loft's fascinating and humorous illustrations. The wombat, platypus, emu, blue-tongued lizard, echidna, koala, and dingo romp across the pages, tempting the reader to learn more about these unique, exotic animals of Australia. Our curiosity led us on a journey to discover more about the animals of Australia and to explore how we could use technology to enhance students' learning on an imaginary journey "down under."

Access to technology is not enough, however. We wanted to integrate technology based on sound instructional philosophy rather than attach it to the curriculum (Balajthy, 1989). Attaching technology, often based on the limited range of skills-based software, leads to isolated instruction. Although computers and related technology can be effectively used for literacy instruction, they do not foster integration without a broader philosophical framework (Balajthy, 1989; Wepner, 1990).

As we developed our unit, we integrated technology by stressing a holistic perspective to literacy learning and teaching (Wepner, 1990). With a holistic framework we valued the potential of each learner and emphasized social interaction (Watson, 1994). Reinking (1986, 1994), DeGroff (1990), and Wepner (1990) present four fundamental advantages of computer-mediated literacy instruction that are compatible with holistic literacy learning. These advantages are: (a) enhanced level of engagement; (b) increased opportunities to read and write; (c) improved social interaction and collaboration; and (d) simplified revising, editing, and publishing.

We capitalized on these four advantages as we developed our unit. For example, we saw the value of computers enhancing the level of engagement of readers and writers as they interact with text. In our thematic unit on Australian animals, students were actively engaged as they searched for information about the different animals, organized information in logical ways, identified details and concepts in their reading, and used new vocabulary found in the texts.

The fifth advantage was that computers can provide opportunities to read and write for a variety of authentic purposes. Children's literature was the core of the Austalian unit. A variety of narrative and expository texts provided reading and writing opportunities. Literature provided the foundation for the computer-based activities enhancing comprehension. Activities for the interesting Australian animals were created in the HyperCard program. It took time for us to learn and understand HyperCard, but it proved to be very appropriate and exciting for this unit. We learned to scan in pictures and maps to create engaging visuals to accompany the text. Cards were created that provided information about each animal as well as directions for activities inviting meaningful reading and writing opportunities for the students. To motivate students through self-selections, we encouraged to choice from the list of animals on the menu screen. By simply clicking on the animal name, students were directed through a series of cards related to the selected animal. For example, if the children selected the koala, a card gave basic information about the koala directing the children to find other marsupials that live in Australia.

A sixth advantage capitalized upon computers fostering social interaction and collaboration. Collins (1991) has identified eight trends in classrooms which use technology reflecting the constructivist view of education. They include a shift from whole-class to small-group instruction, the change of the teacher's role from a lecture to a coaching approach, the replacement of the competitive environment by cooperative and collaborative efforts, and a shift primarily to include visual as well as verbal thinking. All of these trends were present in our Australian animal unit. In preparation for the "flight" to Australia, via the computer, each student chose a traveling companion. Throughout the unit, students worked in pairs at the computer.

Finally, computers facilitate revising, editing, and publishing of children's work to support the writing process. Students are less resistant to making writing improvements when using the computers. One of the HyperCards directed students to prepare a platypus article for the class

newspaper. Together they worked through the writing process to create a published piece.

Problems of Implementation

Beyond the development of a variety of interesting computer-based literacy activities, problems are associated with the management of the classroom while students enjoy each component of the unit. Literacy educators continue to be challenged concerning the successful integration of computers in our existing holistic curricula. Much of the available software fosters isolated skill and drill instruction and encourages "tack on" activities rather than integrated, realistic ways of engaging children. As we created our unit, we were constantly aware of the struggles of implementing a meaningful program in an organized, practical way.

In addition to concerns about providing appropriate computer and literacy instruction based on a thematic unit, teachers grapple with the difficulty of finding the time to study computer programs. Teachers are extremely busy with the load of planning, teaching, grading, and managing without having additional time to learn about computers. They wonder if acquiring new computer knowledge will be efficient use of time.

Solutions

While children's literature and exciting computer-generated activities provide a useful basis for instruction, establishing a unit for the classroom requires more. Every teacher knows that proper organization and management of materials and students' learning are essential to effective classrooms. One way of managing a unit like ours in the classroom is to begin with whole-class instruction developing a KWL chart (Ogle, 1986). The KWL chart is a graphic organizer for recording information the students know before the study, what they want to discover through the unit, and what they learned after the research. By constructing a KWL chart with the whole group, the teacher was able to determine what the children already knew about Australia and the animals who inhabit it, what they wanted to learn, and later, what they had learned.

The next component of the introduction to the Australian unit involved a read-aloud of *Wombat Stew*. Unique animals native to Australia were introduced in this trickster tale that centers around a dingo concocting a stew in which he plans to use the wombat as the main ingredient. The dingo ends up being outsmarted by the unusual animals who made children wonder if they were real or imaginary.

After introducing the unit through these whole class activities, students worked collaboratively in centers to accomplish the projects. The following centers are suggested by the imaginary journey theme and are engaging, motivating, interactive centers for children.

1. Passport Center: Children were required to fill out passport information, modeled after a real passport, and have their pictures taken. Then their passports were stamped at the completion of various activities for record-keeping.
2. Board of Tourism: Students visited here to get information on Australia, purchase airline tickets, decide what to pack, and select a traveling companion. Videos of Australia were accessible here, too, for small group viewing.
3. Crocodile Center: A cozy center for books, magazines, and other reading materials was provided for students to do their research or simply relax with a good book.
4. Writing Righto: The writing center afforded children a variety of writing tools including paper, dictionaries, typewriters, and computer. These were available for use as students completed their writing activities.
5. Computer: The computer or computers were the terminals where partners worked together on the HyperCard program written for this unit. Children were able to make their own cards about animals they researched. Gradually, the HyperCard stack grew with more activities to engage and educate the students.
6. The Outback Cafe: On special days during the course of the unit, snacks like Tasmanian Devil's Food Cake and Kangaroo Punch were served at the cafe. Children made their own menus after researching the foods of Australia. Then they created and maintained this mini-restaurant.

Discussion

Assessing our progress three years later, it's hard to believe we had grave misgivings about technology. As teacher educators we now shutter at the thoughts of functioning without computers. Our overhead trans- parencies have been replaced with Powerpoint presentations; our university issued "green grade books" have been replaced with an electronic one, complete with attendance and calculating capabilities; our communication via telephone and letters have been replaced with electronic mail. We regularly "surf" the internet for the latest information in education. Our students are given assignments requiring the use of computers. Our latest conference presentation was completed with color graphics.

As we recorded our story, it occurred to us that our journey was/is not unique. Our current work in schools with elementary school teachers has shown us that many inservice teachers in the field are grappling with the same issues that we struggled with as graduate students and continue to struggle with as university faculty members. Our journey within a journey is illustrative of and parallel to the journey into technology that classroom teachers are taking. We work to keep up with latest developments but would not consider ourselves experts. However, our journey has given us insights along the way that might prove helpful we offer the following:

1. Jump in — the water's cold but you get used to it. You have to be willing to take risks in order to learn.

2. Social interaction and support are essential. Find a col- league who is willing to journey into technology with you. It is so much more rewarding and helpful to have someone else to work and commiserate with you.

3. "More knowledgeable others" who are available in your building can obviously provide technological assistance. In addi- tion, they can share ways that they have used technology in their classrooms and have implemented effective management strategies.

4. Many districts seem willing to provide schools with soft- ware and hardware but neglect supporting teachers in using these resources. This support needs to be readily available and ongoing. Ask for technology support from your school district.

5. Written materials and tutorials for software programs need to be more user-friendly and accessible to teachers.

6. Teachers need release time to learn about relevant use of technology in their classrooms.

7. Consider ways that technology can make your life as a teacher easier while enriching the learning in your classroom.

With the above recommendations in mind, we would make one final disclaimer, however. While we have come a long way in understanding and using technology to enhance student learning, we still hold fast to the belief that technology should support the curriculum, not become the curriculum. Further, we believe that it is the teacher who makes the decisions and the difference in the classroom, creating contexts for optimal learning.

References

Balajthy, E. (1989). *Computers and reading.* Englewood Cliffs NJ: Prentice Hall.

Blanchard, J.S., Mason, G.E., & Daniel, D. (1987). *Computer applications in reading* (3rd ed.). Newark DE: International Reading Association.

Blanchard, J.S., & Rottenberg, C. (1990). Hypertext and hypermedia: Discovering and creating meaningful learning environments. *The Reading Teacher, 43,* 656-661.

Butler, S., & Cox, B. (1992). DISKcovery: Writing with a computer in grade one: A study in collaboration. *Language Arts, 69,* 633-640.

Collins, A. (1991). The role of computer technology in restructuring schools. *Phi Delta Kappan, 73,* 28-36.

Daiute, C. (1992). Multimedia composing: Extending the resources of kindergarten to writers across the grades. *Language Arts, 69,* 250-260.

DeGroff, L. (1990). Is there a place for computers in whole language classrooms? *The Reading Teacher, 43,* 568-572.

Moore, M.A. (1991). Electronic dialoguing: An avenue to literacy. *The Reading Teacher, 39,* 564-570.

Ogle, D.M. (1986). KWL: A teaching model that develops active reading of expository text. *Reading Teacher, 39,* 564-570.

Reinking, D. (1986). Six advantages of computer-mediated text for reading and writing instruction. *Reading Instruction Journal, 29,* 8-16.

Reinking, D. (1994). *Electronic literacy* (Perspectives in Reading Research No. 4). Athens GA & College Park MD: Universities of Georgia & Maryland, National Reading Research Center.

Reinking, D., & Bridwell-Bowles, L. (1991). Computers in reading and writing. In R. Barr, M.L. Kamil, P. Mosenthal, & P.D. Pearson (Eds.), *Handbook of reading research, Vol. II* (pp. 310-340). White Plains NY: Longman.

Vaughn, M. (1984). *Wombat stew.* Englewood Cliffs NJ: Silver Burdett.

Vygotsky, L. (1978). *Mind in society.* Cambridge MA: Harvard University.

Watson, D.J. (1994). Whole language: Why bother? *The Reading Teacher, 47,* 601-607.

Wepner, S.B. (1990). Holistic computer applications in literature-based classrooms. *The Reading Teacher, 44*, 12-19.
Wepner, S.B. (1991). Technology-based literature plans for elementary students. *The Reading Teacher, 45*, 236-238.
Wepner, S.B. (1992). Technology-based literature plans for primary students. *The Reading Teacher, 45*, 464-467.

Valerie G. Hall is a faculty member in the Department of Elementary Education at Ball State University, in Muncie Indiana. Brenda P. Dixey is a faculty member in the College of Education at Oklahoma State University, in Stillwater Oklahoma. Susan L. Nierstheimer is a faculty member in the Department of Curriculum and Instruction at Illinois State University, in Normal Illinois. David G. O'Brien is a faculty member in the Department of Curriculum and Instruction at Purdue University, in West Lafayette Indiana.