

# CONNECTIONS

... bridging educational research and practice



Urban Education Studies Center • Corinne A. Seeds University Elementary School  
• Graduate School of Education & Information Studies • UCLA

## Beginning Instructional Conversations: A Model of Teacher Professional Development

by Ronald Gallimore, Claude Goldenberg & William Saunders

*Lessons on implementing instructional conversations lend insight into effective methods for reform.*

*...I have spent thousands of hours in schools and one of the first things I sensed was that the longer the person had been a teacher the less excited, or alive, or stimulated he seemed to be about his role... [This happens because] schools are not created to foster the intellectual and professional growth of teachers. The assumption that teachers can create and maintain... conditions which make school... stimulating for children, without those same conditions existing for teachers, has no warrant in the history of man[kind].” (Seymour Sarason, 1983, emphasis added).*

Inattention to teachers’ growth and development is a major reason why so many school reform efforts fall short. Again and again reformers focus on their goals for students and neglect what teachers need to carry out the desired changes. Reform leaders and advocates take for granted that somehow teachers can quickly and easily learn to teach in new ways, use novel technol-

ogy, and make dozens of other changes in their practice.

Part of the problem is that professional development has been viewed as separate from the everyday routines and work of teachers. In recent times, it has become clear that reform efforts must not only change what children experience, but also change schools so they can promote teachers’ professional growth and development. We must provide teachers with stimulating learning opportunities if we expect them to develop skills needed to revamp America’s classrooms. Current staff development efforts, which consist mostly of skill-oriented or materials-oriented workshops, are clearly inadequate. But what should replace them?

Recently we worked with teachers in two Los Angeles area public schools to help them improve their students’ reading comprehension skills. We used a method called Instructional Conversation (IC). In the process we learned a great deal about reform in general, including the fact that to achieve the goal of getting students to stretch their capac-

ity, teachers must be given an opportunity to stretch theirs. What we learned through this project has relevance for

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## Publisher

Urban Education Studies Center  
Graduate School of Education  
& Information Studies (GSE&IS)  
UCLA

## Director

Deborah Stipek

## Editor

Laura Weishaupt

## Guest Editor

Teresa Reyes

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UCLA

Urban Education Studies Center  
Seeds University Elementary School  
Mailbox: 951619  
Los Angeles, CA 90095-1619  
<http://www.gseis.ucla.edu/research/uesc.html>

(310) 825-2623  
[lauraw@ucla.edu](mailto:lauraw@ucla.edu)

## New Projects for the UESC

### Developing a Curriculum for Children's Information Management

—a project funded by the University of California's Urban-Community School Collaborative

GSE&IS faculty members and graduate students and teachers from UES and the Santa Monica-Malibu Unified School District are developing and assessing a curriculum on managing information. The goal is to develop a well-organized, easy-to-implement instructional program that teachers can use in teaching children to take effective and efficient advantage of access to information from all sources, including the Internet. The curriculum will have three components: (1) *assessing information needs*--e.g., formulating questions, identifying potential sources of information, and planning successful search strategies; (2) *evaluating information*--e.g., judging accuracy and relevance and differentiating opinion from factual information; and (3) *using information*--e.g., organizing new information, integrating new information into existing knowledge, and using information to engage in critical thinking and problem solving. For further information about this project contact Sharon Sutton, (310) 825-1801, [ssutton@ucla.edu](mailto:ssutton@ucla.edu).

### Developing Assessment Tools and Intervention Strategies to Assist Children with Early Reading Problems

—funded by a UESC seed grant

UES teachers and administrators, GSE&IS faculty, postdoctoral fellows, and graduate students are collaborating with teachers and administrators from the Santa Monica-Malibu Unified School District on a project designed to help teachers identify and assist children with reading problems early in their schooling. The team of researchers and practitioners are developing (1) a battery of assessment tools that can be used by teachers in their regular classrooms to identify children who are at risk of having reading difficulties, and (2) strategies for intervention that are directly linked to the individual profile provided by the assessments. The assessments developed by the team will be piloted in classrooms at the participating schools, where they will be assessed for their feasibility and practical value. The long-term goal is to develop a package of well-tested materials and teaching strategies that can be disseminated broadly to kindergarten and first grade teachers in urban school settings. For further information contact Margaret Heritage, (310) 825-1557, [mheritag@ucla.edu](mailto:mheritag@ucla.edu).

### Expansion of the Institute on Primary Resources, UES, URL Department of Special Collections

—funded by private donations

For the past five years UES teachers have collaborated with staff at the Department of Special Collections at the UCLA University Research Library (URL) to assist teachers in using primary sources in the teaching of history, social studies, literature, science, and other subjects. A summer institute has given teachers from schools across southern California an opportunity to write for their own students curriculum units which incorporate original books, letters, journals, photographs, maps and other materials available in the university library system. This year marks the beginning of a substantial expansion of the program. A select group of teachers who have participated in the summer institute are being given training and support in helping teachers in their own schools and school districts develop similar expertise in the use of primary sources in their teaching. The new funding will also support editing, formatting, and disseminating units that have been developed by participating teachers. For further information contact Ruthellen Moss, (310) 206-4940, [rmoss@ucla.edu](mailto:rmoss@ucla.edu) or [ctrace@ucla.edu](mailto:ctrace@ucla.edu).

# Technology as a Tool for Learning

by Teresa Reyes with the assistance of Jan Powell

*A teacher brings technology into the classroom by thoughtfully folding a computer-based assignment into an existing lesson.*

These days nearly everyone who has anything to say about the state of education agrees that computers are part of its future. But even the most enthusiastic advocates of bringing technology into the schools are struggling to determine just how computers can be used most effectively in real classrooms with real students and teachers. As a veteran teacher who has observed firsthand the way students', parents', and teachers' lives have been transformed by new electronic devices now at their disposal, Seeds University Elementary School teacher Jan Powell has faced this challenge head-on.

In recent years Ms. Powell has developed effective strategies for enhancing her overall instructional goals through use of the computers, multimedia software applications, scanners, video conferencing devices and Internet access that are now available to schools and classrooms. Ms. Powell's philosophy regarding computers in the classroom is simple: this equipment should serve as yet another tool in teachers' overall instructional process—in the same way that dictionaries, crayons, paper, rulers, or books figured into her own schooling and early teaching career. With that in mind, teachers who grow anxious at the prospect of having to master “one

more thing” should take comfort in the notion that technology need not be an “add on” but simply another *tool* for helping them accomplish what they are *already doing* in their classrooms. The goal at UES is to interweave the use of the computer right into existing lessons in subjects such as literacy, social studies, or science. UES educators have committed themselves to integrating technology because they want students and teachers to have another tool for developing and communicating new knowledge from multiple perspectives.

Like many teachers at UES and other schools, Ms. Powell is experimenting with various technologies and instructional practices. Among her many priorities is “fostering in students a lifelong enthusiasm for learning and discovery.” Technology, in Ms. Powell's view, can be extremely valuable in achieving such goals. When effectively “folded into” instruction through well-designed projects, students come to understand that learning how to use the hardware and software in their UES class-

room is not an end in itself, but rather a *means* to learning and then communicating what they know.

## A New Assignment

Last year Ms. Powell started using the multimedia software application HyperStudio to enhance her students' unit of study on the workings of a desert ecosystem. Students in her third- and fourth-grade class-

*“Before technology even entered into the picture, students had studied the desert in at least two different ways: through research gleaned from books and through first-hand observation.”*

room had already completed written reports on desert plants and animals before visiting the Living Desert in Palm Springs, California. Before their visit, students were engaged in an active process of learning about desert environs using conventional sources such as library books. Their written reports included the fruits of this more traditional book-centered research. After their visit to the Living Desert, Ms. Powell asked students to record in writing their observations and impressions in a “Desert Memory.” Before technology even entered into the picture, students had studied the desert in at least two different ways: through research gleaned from books and through first-hand observation.

Ms. Powell next introduced the multimedia presentation component of the desert unit. Students were given an eight-day schedule that included instruction in basic functions of HyperStudio\*

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\* UES students have developed a useful manual for this application, called “Hyperstudio For Kids By Kids.” The manual is available to educators for \$10. Please send written inquiries to the attention of Sharon Sutton at UES.

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# Conversations

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others attempting to improve learning, instruction, and student achievement.

## Discussion and Discovery: What Are Instructional Conversations?

An instructional conversation appears on the surface to be an excellent discussion conducted by a teacher (or someone relatively more knowledgeable or skilled) and a group of students (or individuals relatively less knowledgeable or skilled). Interesting and engaging, the discussion is about some idea or concept that matters to the participants. It has a coherent focus which might shift as the discussion evolves, but remains discernible throughout. There is a high level of participation, without undue domination by any one individual, particularly the teacher. Students engage in extended discussions with the teacher and among themselves, exploring ideas and thoughts in depth. At the end of an IC, students (and, ideally, the instructor) have reached a new level of understanding about the topics discussed.

Instructional conversations treat children as *conversation partners* rather than merely “straight-men” who give short answers to questions that offer no response leeway. When well done, IC lessons are spirited events that provide significant opportunities for involvement by all students, regardless of skill level. In an IC lesson, students have an important stake in what is said. This stake changes the students’ relationship with and attitude toward the subject matter. No longer entirely teacher-owned and teacher-mediated, the learning process becomes exciting to students.

Saunders and Goldenberg (1992) evaluated the effects of IC lessons in a small scale experiment. Two groups of 4th graders equivalent with respect to language and writing skills were taught a lesson on a story focusing on conflict between two friends. One boy talked his friend into disobeying a parent’s directive, which got him into trouble. The story could lead to a subtle exploration

*“In recent times, it has become clear that reform efforts must not only change what children experience, but also change schools so they can promote teachers’ professional growth and development.”*

of the problematic aspects of friendship, such as how to deal with conflicts that threaten relationships. One group of students participated in an instructional conversation about the story (IC Group). The second group was taught using a Direct Instruction (DI) method (this was the control group). Both groups were asked to write essays about the story they had read. On a measure of literal comprehension (what happened, character actions and motivations, etc.), the groups were equivalent. But in essays that the students wrote about friendship, there was a large *qualitative* difference.

In their essays, the students in the IC group were more than four times as likely (62% vs. 14%) to mention more subtle, problematic, or differentiated aspects of friendship—such as that friendship is not always perfect or that friends sometimes have problems they have to work at solving. The two groups were sharply different in how they handled this question: “Do you think the boys will remain friends? Why?” Significantly, 73 per cent (8/11) of the students in the IC group made some reference to actions the characters would take to resolve their conflict and

repair their friendship (e.g., talk it out; they will forgive each other). Only 15% (2/13) of the students in the control group made similar references. In fact, the majority of control responses showed no evidence that the students treated the events in the story as problematic for a friendship—e.g., the boys did not get mad in the story; they are good friends; they will stick together. This study showed that ICs not only produce high levels of surface comprehension but increase deeper analysis and appreciation of the literary themes and moral issues explored in children’s literature.

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## About Our Project

The information we offer here is based on our work with teachers in two Los Angeles public schools serving predominantly Latino communities. The mostly working-class families occupy small houses and compact apartment buildings. Many residents are employed in light industry and in service jobs in hotels and restaurants. Many of the children speak Spanish as their first language. Those who enter kindergarten and the primary grades speaking only Spanish are instructed in Spanish. As their second language fluency develops, they gradually make a transition into English instruction.

Teachers with whom we worked ranged from the novice to the highly experienced. In one school we worked with a group of teachers specifically interested in how they could improve literacy instruction for their students; the other involved a school-wide effort initiated by the principal and a researcher to improve student achievement school-wide.

## What Did We Learn?

### • It takes time.

Creating a “learning” culture at a school is a long-term and demanding

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endeavor. Workgroups at one of our project schools have been evolving for the past five years. The first year there were just two small groups, the next year two more were added, and for the last three years every teacher on staff has participated in at least one of six to eight groups. Across the same five-year span, various committees were formed as well.

Currently, teachers in the project school spend an average of at least two hours per week meeting in workgroups and committees. The reality of making and honoring such a commitment is much more demanding and tenuous than one might assume. The teachers say there are many times when they would much rather go home or complete other tasks than attend a workgroup or committee meeting. Yet, without question teachers find the workgroups valuable and a substantial improvement over the one-shot workshops and presentations they were accustomed to previously. A “learning” culture has continued to develop slowly but surely at the school each year as teachers have recommitted their time and energy.

We recognize, however, that the immediacy and urgency of the day-to-day operations of a school can gobble up precious time allotted for professional development. We know from our own analysis that

*"All that is true for the development of children and youth is also true for the development of adults. When trainers do with teachers what they try to train teachers to do with students, better results can be obtained."*

even the most effective workgroups wind up utilizing only 75% of the allotted time (less effective groups utilize about 50%). With few exceptions, the time lost is due to complications beyond group members' control (e.g., parent conferences, district in-services, impromptu meetings). Although it would require substantial resources, ongoing professional development merits major change

in the organization of the school year to provide time for teachers to learn and develop the skills they need to implement reforms and innovations.

### **• The process of teacher professional development should mirror the instructional approach being taught.**

What we know about children's development and the contexts it requires also applies to adult professional development. All that is true for the development of children and youth is also true for the development of adults. When trainers *do* with teachers what they try to train teachers to do with students, better results can be obtained.

We saw this at our project schools, where teachers met in weekly two-hour after-school sessions to discuss issues pertinent to language arts instruction; discuss readings and handouts; and view, analyze, and discuss videotaped lessons

of teachers attempting to do ICs in their classrooms. During the year, approximately 45 lessons were taped in total, ranging from 9 to 15 per teacher. Teachers were also observed and interviewed by research assistants to provide information on the process of learning to incorporate ICs into the teaching repertoire.

The principal finding from our analysis of the year's 30 meetings was that the teachers themselves experienced a series of instructional conversations, as learners, during the weekly meetings. The regular, systematic use of these interactions led to a set of shared understandings among project participants.

Moreover, precisely because one of the salient features of instructional conversation is responsivity to participants, the weekly meetings permitted the group to address potential obstacles to IC implementation. Although it is inevitable that problems will arise when teachers attempt to move from their usual mode of instruction, with which they feel comfortable and adept, to a very different mode requiring a different conceptual apparatus

and set of skills, these obstacles can become fruitful entry points for problem solving.

### **• New methods complement, rather than replace, the old.**

When teachers learn to do more

conversationally and cognitively challenging lessons one of the hurdles some have to overcome is a tendency to see different teaching strategies as polar opposites. This was documented in a study by Goldenberg and Saunders who analyzed 9 (of a total 30) sessions in which several teachers and a researcher viewed tapes and discussed how to implement instructional conversations. A number of the teachers in the group struggled for some months to make any progress. The analysis of the 30 sessions identified a major barrier to comfortable use of IC: The teachers had adopted a “strawman” dichotomy between the “bad old” directive teaching and IC as the “good new” way that fully engaged children. They rejected all use of direct instruction and tried to use only a conversational approach.

But as teachers watched lesson tapes and struggled to become conversational in their teaching they saw many instances in which “directly teaching” a skill or a concept made sense because it moved students through a text more rapidly. This gave teachers time to engage the students in conversations on issues

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*"Effective, meaningful professional development can only come from a fundamental change in schools, a change that ensures that the intellectual and professional life of a teacher becomes more stimulating, demanding, and satisfying."*

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that “light up the eyes” with interest and enthusiasm. Because they had believed that direct instruction was never good, however, they had been stuck.

One teacher, Wanda, recognized early on that DI and IC were not opposites, but complements. She saw that DI has its value as well as IC and that its step-by-step approach has a role to play. She noted the importance of such things as building on prior knowledge, stating the purpose of the activity, giving input into the concept, modeling, checking for understanding, and then providing guided and independent practice. These practices introduce students to knowledge and skills, such as those found in teachers’ manuals.

Wanda also realized that sometimes DI can be effectively used *within* an IC. Preparing for an IC, teachers must determine what students need to know to make sense of a text. Even if the overall thrust of a day’s lesson is conversational, a short, delimited bit of DI might move the readers ahead more quickly in their reading and interpretation of the book.

For example, in teaching a story about a family of migrant farm workers, Wanda anticipated that the effect of frost on plants, important for understanding the motivation of the characters, was a vital detail that students might not understand but that could be approached using IC. To do so, however, would take time away from discussing the story’s themes of maturity and growing responsibility. Choosing to focus on the main character and his situation, she elected to use a short, directive lesson. She bought some tomato plants and put them

in the freezer in the school cafeteria. When the class reached the part of the story describing the freezing storm, she showed them the damaged plants and described the effects of frost.

“Instructional conversations assist students to reach ‘deeper’ understandings than direct instruction,” Wanda reports. “It is far more than simply understanding the facts of a story. But they do have to know the facts: they have to know what happens to tomatoes when there is frost. If they keep getting bogged down at that level of detail, they’ll never get to the deeper understandings you can achieve through conversation.”

### • **Social context is important; schools must support teachers’ efforts and experiments.**

Exhortations, workshops, and reprint distribution are likely to have little impact on individual teacher development unless there is support for teachers’ efforts by administration, parents, and other teachers. An atmosphere conducive to long-term improvement cannot survive for long unless the school community consciously creates and sustains it, and unless there is coherence between the community and teachers’ goals.

For our project we designed a model to provide school personnel with a sense of coherence, a sense that different activities at the school are all related to a common and generally understood overall purpose. The model is derived from research in educational change and our own experience working in schools. It consists of four sets of factors, or “change elements”:

- *goals* that are set and shared;
- *indicators* that measure success;
- *assistance* by capable others; and
- *leadership* that supports and pressures.

The purpose of the model was to help us create a school community where teachers would have regular and consistent opportunities for professional growth and development specifically aimed at helping them help their students achieve at higher academic levels.

Workshops, committee meetings and one-on-one sessions were intended to create a community-wide context for teacher development and enhanced student achievement. These various settings outside of the classroom, where teachers worked and met around efforts to improve teaching and learning, were interdependent. Each relied on the others in order for the overall effort to cohere. However, coherence across settings could not be assumed, nor did it spontaneously develop; we had to work to create it. We had to work across settings to create a community of teachers who shared a common set of goals and a vision for how to achieve them. (For a more detailed discussion of the authors’ change model, see *Connections*, Winter 1995.)

### • **Improved staff development should be a means to achieve a larger goal, not the goal itself.**

We noted in the introduction that reformers tend to be so focused on what they want for students that they inadvertently neglect what teachers need to carry out the desired changes. We have observed the opposite extreme as well, where the focus is almost exclusively on professional development without attending to the impact on student learning. In our experience, however, the primary reason teachers at our project school continue to participate in workgroups and various other change

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initiatives is they believe these efforts are contributing toward the larger goal of improved student learning and achievement.

At our project school, improving student learning and achievement has been and continues to be the common, community-wide purpose for making change at the school. This includes making and sustaining a commitment to ongoing professional development activities, giving frequent systematic assessments of student learning, and making sure that teachers and administrators often discuss assessment results. As one teacher put it, "The emphasis at (our school) is not to encourage collaboration and cooperative participation among staff members per se, but to make them central to the successful functioning of the school."

### A Final Word

In spite of difficulties and lingering questions, our final word is optimistic. When appropriate contexts are provided, teachers can engage in activities and interactions among themselves and with their students that many reformers have advocated for years.

However, the answer to the challenge of teacher professional development does not lie in the creation of a huge but temporary training program. No amount of short-term training or development efforts are likely to have much effect.

Effective, meaningful professional development can come only from a fundamental change in schools, a change that ensures that the intellectual and professional life of a teacher becomes more stimulating, demanding, and satisfying. Teachers must have regular and sustained opportunities to do detailed and continuing analysis of their teaching and students' learning, and this analysis must take place in a context that promotes cohesive, integrated development at the personal, interpersonal, and community levels. If anything less than this occurs succeeding generations of educational scholars will once again be writing post mortems of the most recent school reform disappointments.

### For Further Information

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*Ronald Gallimore is a professor in the UCLA Graduate School of Education & Information Studies. Claude Goldenberg is an associate professor in the College of Education, California State University at Long Beach. William Saunders is an associate researcher psychologist in the UCLA Department of Psychiatry and a research study director in the College of Education, California State University at Long Beach.*

### NEXUS Project Launched at UCLA

Richard Atkinson and former UC Santa Cruz Chancellor Karl Pister initiated a K-12 education pilot outreach program this summer on four UC campuses. The UCLA technology-based "NEXUS" program was launched in August as a summer institute. Seeds UES students participated to demonstrate effective uses of classroom technology for elementary school children.

The UCLA NEXUS Summer Institute Team—comprised of co-directors Beth Wellman and Pat Dung, UCLA Representative Peter Kovaric, and Teacher Leader Sharon Sutton—worked with 20 kindergarten through university-level educators who either use technology in their teaching or who serve as technology coordinators for their schools. The key focus for the Summer Institute was on issues of equity, diversity, and effective uses of technology to enhance the learning of technologically disadvantaged students. The goal of the NEXUS Project is to forge a collaboration between university faculty and K-12 teachers for integrating the use of technology in instruction and for developing teacher leaders who will in turn assist teachers in their respective schools.

For further information contact Sharon Sutton (ssutton@ucla.edu), UES Coordinator of Technology and Outreach.

## Technology as a Tool

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and required the completion of a series of electronic tasks designed to aid in presenting their earlier work on desert environments. A daily task would entail the creation of one of a series of "cards"—such as a Title Card—in a stack that was to be completed by the end of the eight days. After completing the daily task, students' cards were stored in an "Electronic Portfolio." The eight-day project culminated in a formal presentation of students' desert work before an audience of parents. Figure One displays the schedule Ms. Powell followed in weaving the multimedia presentation assignment into the Living Desert unit.

Because HyperStudio was entirely new to Ms. Powell's students, they needed basic instruction in the ways HyperStudio could enhance their Living Desert presentations. Toward this end, at the beginning of the eight-day schedule she set aside daily instructional time for teaching them basic functions, such as creating a new stack of individual cards (the fundamental units of presentation); creating borders and text and manipulating them by adjusting fonts, font size, color, and other variables; adding "buttons" which would allow a browser to peruse the stack according to individual preferences (e.g., move forward through the stack, return to a particular card, or listen to an audio recording of the student reading aloud from his or her Desert Memory); and importing text and graphics from other sources (e.g., the written report on the desert that the student had already composed and word-

processed using an application such as ClarisWorks or Microsoft Word) into the HyperStudio stack.

Students were encouraged to view their stack as a coherent whole comprised of individual parts whose fea-

clearly defined, manageable steps. Figure Two demonstrates this continuity between cards in one student's stack.

As in any instructional situation, some students rapidly "caught on" to the stack concept, while others took a bit longer and needed more instruction to complete the tasks. To facilitate and expedite their learning, Ms. Powell selected six students in the class to serve as "StackMasters," or experts, who would lead cooperative groups composed of several other students to completion of each group member's individual Electronic Portfolio. At each cooperative workstation (large tables in the classroom outfitted with one computer and enough chairs and seats for all of the group members) the StackMaster would be in charge of leading the students in their group through a specific day's task, such as adding sound (e.g., a student reading aloud from his or her Desert Memory) or making a Table of Contents card. Each student saved his or her completed cards on floppy disks.

The StackMaster concept, in which one student serves as the guide or teacher for other students within a small, cooperative group, accomplishes an important goal: it contributes to the educational practice of "scaffolding" in which instructors—usually but not necessarily the teacher—make it possible for all students to move from one step to the

next in a learning process. The scaffolding principle acknowledges that students will naturally function at different levels, and thus the pace and learning strategies will be different for each student. Through the StackMasters

concept, students in a class assist the teacher by providing more "experts" who can ensure others' success in moving to

Figure 1

### HyperStudio Multimedia Worktime Schedule

Day 1	Finish Copying Written Documents to Disk
Day 2	Make "Title Page"
Day 3	Make "Table of Contents"
Day 4	Add "Buttons" and "Transitions" for Navigating between Cards (e.g., "Next" or "Back")
Day 5	Import Text and Graphics (e.g., digital photos)
Days 6-7	Add Sound Recordings of Students Reading Aloud from Their Work
Day 8	Practice in Front of Classmates Formal Presentation to Parents

tures, such as choice of color, border style, and font, helped to convey what they had learned about the desert over the course of their earlier study. For example, a student might select a yellowish-brown border of closely spaced small dots to suggest the image of dry sand. Whatever their choice, students were advised to enhance the overall impact of their presentations by maintaining a visual continuity among their cards, rather than designing their stack as a patchwork of unrelated pieces. The project's conception as a comprehensive whole composed of contiguous parts was reinforced by the eight-day schedule, which broke down the process of creating the stack into a series of

*"Even if you feel that you are missing the technology gene that nearly all of the students in your class seem to have been born with, do not let the computer sit in the corner of your classroom: you and your students can learn how to use it together."*

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the next step. Though this practice is vital to effective teaching in any classroom, it is particularly suited to the multiage classroom (like Ms. Powell's) in which the older students, who may have been previously introduced to the skills, can be especially helpful to the novices. The StackMasters in Ms. Powell's third- and fourth-grade classroom became HyperStudio experts who could provide one-on-one instruction in the application to the school's younger students.

At the end of the eight-day schedule, students practiced delivering their multimedia presentations before each other. Parents were then invited to view

the final product in formal presentation. As a measure of how adept some of the students had become at teaching the application, one student, when asked a question by a parent, left his Living Desert presentation behind for a moment in order to teach the parent about the numerous capabilities of the software—much to the awe of parents and teacher alike! There is no better reassurance that a student is comprehending a concept than observing that student confidently showing someone else the way.

Ms. Powell's Multimedia Presentation assignment was successful not just because students learned how to use a new software program that could do amazing things like play recordings of students' voices or display digital pho-

tos they took on their visit to the Living Desert. These options allowed them to consolidate, organize, and communicate what they learned much more effectively than traditional paper and pencil reports; the electronic capabilities also enabled students to tap their creative abilities. Ms. Powell often found herself struggling to get students to stop working on this project in order to move on to other tasks. Through this well-designed assignment students came to understand, concretely and clearly, how computer technology could help them to enhance—not replace—the quality and variety of the products of their inquiry into the desert ecosystem.

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Figure 2

## Sample Cards from One Student's Living Desert Stack

Title Card

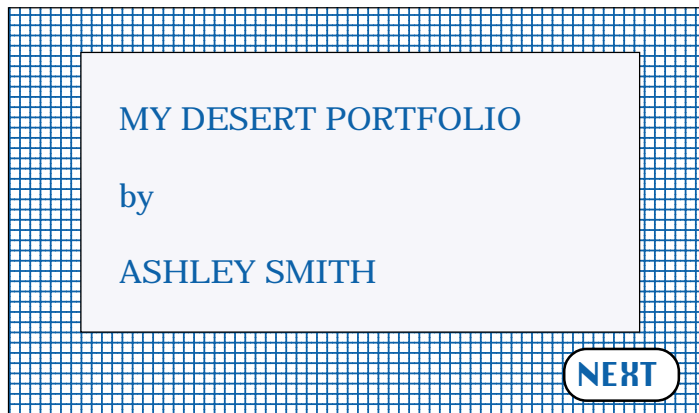
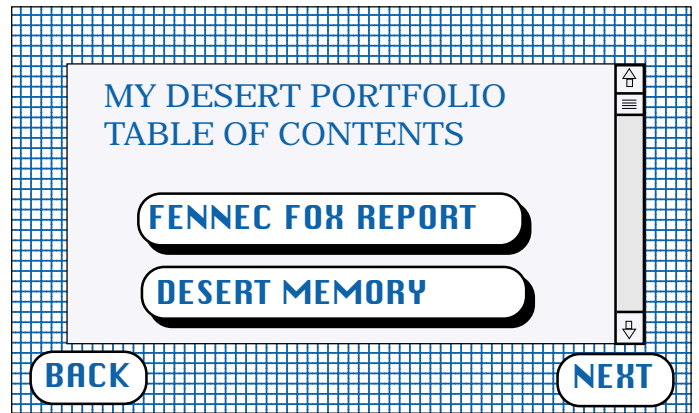
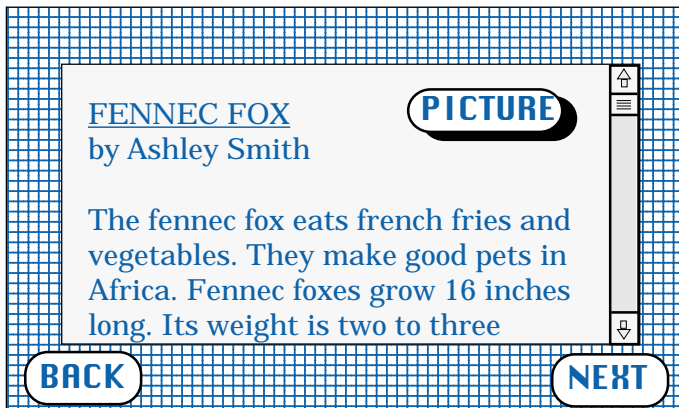


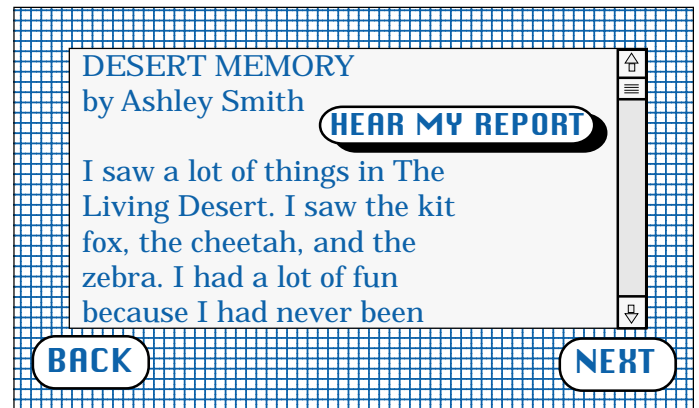
Table of Contents Card (Top Half)



Written Report Card



Desert Memory Card



*By clicking on the "PICTURE" button, viewers will be taken to another card with a digital photograph directly related to the report.*

*In addition to reading the written report, by simply clicking on the "HEAR MY REPORT" button viewers also have the option of listening to an audio recording of the student reading it.*

## Technology as a Tool

*Continued from page 9*

This is just one example of a successful strategy for incorporating electronic technology into more traditional modes of classroom instruction. The availability of technological resources will vary widely from school to school, and instructional styles will inevitably vary among teachers. Ms. Powell emphasizes the value of several basic principles, regardless of the amount or sophistication of your equipment:

First, focus on how a given technological tool—be it a word processing application, graphics software, recording equipment, or a digital camera—is going to enhance, not substitute for, something you are already doing in your classroom. Rather than dread it as one more thing you have to master in order to serve your students effectively, think of technology as just another tool in your instructional bag of tricks. If you have computers in your classroom, Ms. Powell recommends setting them to turn on automatically in the morning and to turn off after the children leave. That way the technology is always ready, just like the rulers and pencils at students' desks. Ms. Powell was lucky enough to have a parent who knew how to automate the daily turning on of her classroom's computers, and she advises teachers to seek out

parents or school technology consultants who can provide their valuable expertise.

Second, recognize that you do not need numerous, expensive software applications to integrate computers effectively into your instructional program. Less can be more. Ms. Powell has found that having only one or two programs at one's disposal invariably forces a teacher to be creative in milking those applications for all their instructional worth.

Third, trust yourself and your students enough to let some of them know more than you. Even if you feel that you are missing the technology gene that nearly all of the students in your class seem to have been born with, do not let the computer sit in the corner of your classroom: you and your students can learn how to use it together. You can empower students by giving them the opportunity to be the experts. Accept that many of the young people in your class will have had more experience with this kind of equipment than you. *Your* job is to see to it that the technology always be used as a means to an instructional end.

While the controversy will likely continue regarding the electronic revolution's impact on society, educators can function as pioneers in finding practical applications for technology's awesome potential. Teachers can harness this potential by thoughtfully de-

signing computer-based assignments and effectively folding them into their existing instructional practices, thus adding a powerful new dimension to children's learning. And that, everyone can agree, is worth striving for.

*Jan Powell is a demonstration teacher currently working with seven- to nine-year-old children at UCLA's Seeds University Elementary School. For further information regarding her integration of technology into instruction, contact her at [jpowell@ucla.edu](mailto:jpowell@ucla.edu). Teresa Reyes has been a graduate student in English at UCLA and is guest editing this issue of *Connections*.*

### Coming Up

**The National Council of Teachers of English will present its midwinter conference, "Sociocultural Views of Literacy: Creating Communities of Learners," at UCLA February 20-22. The three-day event kicks off with two pre-conference workshops on February 20. Workshop #1, "Introduction to Sociocultural Theories," will cover implications of theory for classroom practice. In Workshop #2, "Conducting Classroom Based Research," Judith Greene and members of the Santa Barbara Discourse Group will assist participants in developing classroom-based research and methodologies. The NCTE conference will feature such notable speakers as Barbara Rogoff, UC Santa Cruz, Mike Rose, UCLA, Susan Florio-Ruan, Michigan State University, and Judith Langer, SUNY, Albany.**

**For further information contact Kris D. Gutierrez, Professor, UCLA, GSE&IS, Moore Hall 1026, Los Angeles, CA 90095-1521, (310) 825-7467, fax (310) 206-6293, [krisgu@ucla.edu](mailto:krisgu@ucla.edu).**

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## Typing to Learn, Learning to Type: A UES Study of Children's Keyboarding Skills

Can children in the early grades learn to type effectively? What is the best method for teaching keyboarding skills to young children?

To help answer these questions, UES teachers and researchers last year conducted a systematic, multigrade study to examine age and "instruction" effects on keyboarding skills acquisition. The study contrasted two approaches to using "Type to Learn," a commercially available typing tutorial program for the computer, to instruct 7- to 9-year-olds. One approach involved intensive lessons over a few weeks; the other involved the same number of lessons spread out over a longer period of time.

In the short-term approach, children received instruction in the computer lab in 20-minute sessions, four times per week for six weeks. The long-term, classroom-based approach involved 20-minute sessions in two classrooms, two times per week for 12 weeks. All children received the same number of hours of keyboarding instruction.

The study measured students' typing speed and accuracy at three points: (1) immediately before keyboarding instruction began, (2) at the conclusion of the instruction, and (3) six weeks after the instruction had ended. Results indicate that 8- and 9-year-old children improved their typing speed and accuracy over the course of the keyboarding instruction. Improvement for 7-year olds was very modest. Both groups also showed very modest improvement six weeks later.

To assess their perceptions of typing competency and how much they like typing, children were given short questionnaires at both the beginning and end of the study. They reported that over the course of instruction they became more facile at using the correct fingers to type. They also reported that they only liked to type words a "little", but that they very much liked to use computers in general.

The researchers observed children's typing techniques, engagement, and anxiety during the keyboarding instruction. Overall, children used the correct fingers when they typed. They

also were rated by observers as fairly engrossed in keyboarding and relaxed during lessons.

Finally, children's performance on the skill tests were related to their use of the computer at home. The children who showed the greatest gains were those who used the computer most often at home and who spent more time engaged in word processing activities.

For further information contact Rosaleen Ryan at [rosaleen@ucla.edu](mailto:rosaleen@ucla.edu) or (310) 825-1649.



### Send

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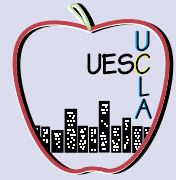
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*Thursdays, 3:30 - 5 p.m.*  
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- **October 9**

*Charlotte Higuchi, Project Director, Language Arts Project: CRESST*  
**"Linking Standards, Assessment, & Curriculum in Language Arts"**

- **November 6**

*Ron Stevens, Professor, GSE&IS, UCLA*  
**"Problem Solving in the Sciences: An Innovative Software Approach"**

- **December 11**

*Peggy Szymanski, Teacher, Hollydale Elementary School*  
**"Enhancing Literacy Skills of Bilingual Students Through Peer Group Conversation"**

- **January 22**

*John Schacter, Graduate Student, GSE&IS, UCLA*  
**"Kids Learning from Kids: Computer-Based Concept Mapping & Collaboration"**

- **March 19**

*Anne Gilliland-Swetland, Assistant Professor, GSE&IS, UCLA*  
**"Digital Portfolio Archives in Elementary Science Education"**

- **April 23**

*James Catterall, Professor, GSE&IS, UCLA*  
**"Education Through the Arts"**

- **May 14**

*Jim Stigler, Professor of Psychology, UCLA*  
**"A Cross-National Comparison of Mathematics Teaching and Student Learning"**

For further information on the UESC Colloquium Series, or for directions to UES,  
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