Open Gateways Program - Professional Development Curriculum

Module 1 Training Guide

Introduction

This training guide is the first resource for trainers of the Open Gateways Professional Development curriculum. It describes how the other modules are organized and provides resources and strategies for Sun employees and others who want to learn how to conduct effective teacher training workshops using StarOffice. For Sun employee volunteers, this module is a prerequisite for conducting subsequent teacher training workshops.

Relevant sections of this module can be used to create interactive workshops for volunteer instructors. During these "train-the-trainer" workshops, it is important that volunteers are given time to practice instructional strategies, such as cooperative learning, that will be used in subsequent workshops with teachers.

Modules 2 through 7 are a series of learning modules. StarOffice 5.1a was used to create the guided practices and lesson plans. Here is a synopsis of these modules:

Module 2 presents the StarOffice software. Teachers are introduced to the StarOffice software and learn basic concepts about network computing, the file management system, and the StarOffice desktop environment.

Module 3 introduces Internet basics. The workshop focuses on how to use the browser, employ hyperlinks, find information using search engines, use and save bookmarks, and handle email basics. A primary goal of this workshop is to support teachers as they gain the basic skills for using the StarOffice interface and learn to navigate the Internet.

Module 4 outlines a workshop that introduces StarWriter. It focuses on integrating the use of word processing and graphics into the curriculum. During the workshop, teachers will practice setting up a lesson appropriate for students at the level they teach, using the sample lessons.

Module 5 introduces the StarCalc spreadsheet. The workshop gives teachers some of the basic as well as advanced skills they need to use this tool effectively, both for their own productivity (calculating student grades, for example) and with students across subject areas.

Module 6 is the outline for a workshop on StarImpress, the slide-show software. It provides examples of how teachers can use this tool for different purposes at various grades. This workshop stresses the importance of teaching students communication skills.

Module 7 an introduction to Web publishing, outlines using the tools for a wide range of projects at various grade levels. Although this workshop builds on some of the skills learned in the StarWriter workshop, it can be easily adapted and used any time after the introductory workshop on Internet basics.

Module Organization

Each module in this manual has a similar organization. Sections for modules include:

Skill Checklist - This checklist describes the skills that you, as a trainer, need to facilitate the workshop effectively. It also doubles as a list of the skills that you can expect teachers to gain over time as they work with the software. Note, however, that not all teachers will attain all skills listed during the limited time available for the workshops.

Logistical Preparation for this Workshop - This section highlights the preparations that you need to make before the workshop. Other participants may need to deal with other logistics during training. An outline of job responsibilities and tasks appears in "Organizing For A Workshop" section of this training guide.

Introducing the Goal and Objectives - The goal and objectives for the module are outlined. General goals are presented in the training slides for the module (see Support Materials). At the beginning of a workshop, goals are identified so participants know what they are expected to learn. They can compare the learning goals with their current knowledge of the topic and then aim for the higher level of understanding expressed by the goals. It is the responsibility of the trainer to provide an environment in which these goals can be met and to hold the teachers accountable for learning.

Norms - At the beginning of a workshop, it is a good idea to establish norms, or rules of conduct. Let the participants know what you expect of them. For example, to ask questions and stay involved in the workshop, keep on task, return from breaks on time, stay until the end of the workshop, participate in the activities, assist each other, and offer help by speaking rather than by grabbing the mouse or keyboard. Also let them know what norms you hold yourself responsible for (staying on time with the agenda, listening carefully to questions and taking time to answer, speaking in a voice--pace, volume, and vocabulary--that the audience understands). A slide listing the basic norms appears in the training slides for each workshop.

Outcome Objectives - This section of the module lists the specific objectives you should strive for with the teachers in your workshop group. You will need to be ambitious with your advanced participants, but may need to reduce some of the expectations for your novices. The outcome objectives are presented for the trainer's use in organizing the workshop. They provide more specific objectives than the general learning goals. While working through the presentation, the trainer may want to use the objectives as a checklist to make certain all participants have the opportunity to meet the objectives.

Agenda - The agenda suggests the amount of time necessary for each part of the workshop. It also provides a general outline aimed at the intermediate participant. Novice computer users will require more time, and advanced users may require supplemental materials, which can include the higher grade lesson plans, additional demonstrations from you, or more time to experiment.

Summary of Research - In some modules, the educational research literature is summarized. This is in the form of a one-page, condensed overview of the research with appropriate references. The teachers in your workshop may find this helpful in orienting them toward effective methods of integrating technology into the curriculum. Print out these summaries and give them to the participants during the workshop.

Training Guide - Each module contains a Training Guide which that provides a narrative introduction to the topic of each module, the software that will be introduced and the steps you should use during the workshop when introducing the software and lessons. Use the training guide in conjunction with the training slides that introduces each main topic. Limit the lecture time to the minimum necessary to show features of the software and provide an overview of the topic. Maximize time spent in groups and hands-on activities.

Hands-on Activities - Every workshop provides time for hands-on activities supported by either a guided practice handout or a student lesson plan. Step-by-step software instructions accompany each activity. These have been carefully developed to build on previous workshops, to introduce new skills on an as-needed basis, and to support a lesson that will benefit students without being overwhelming. Guidelines for group management in the classroom are given for teachers, and student prerequisite skills are outlined.

Lesson plans are developed for attaining the highest technical skill level for each module at elementary, junior high/middle, and high school grades. They are targeted at academic, social, and technical skills appropriate to the age of the student. The lesson plans are intended to cover several days of instruction in the classroom. They are designed as part of a thematic, inquiry-based approach to learning. The lessons can be used during the workshop as a point of discussion. For example, the teachers can review the lesson and discuss how they might modify it for a certain curriculum unit they are teaching, their specific grade, or the particular needs of their students. During the workshop, you will use the step-by-step instructions in the lesson plan for the teachers to practice the skills. This practice serves multiple purposes:

It focuses the teacher on classroom management techniques that are effective when integrating technology into the curriculum (such as using cooperative learning groups).
It provides a sample lesson that is aligned with most school and state frameworks for curricular content, as well as frameworks for acquiring technology skills.
It offers a structure in which the teachers can learn the specific technical skills needed to implement and support a lesson using the particular application (word processing or spreadsheet, for example).

It gives the trainer a step-by-step guide to use with the teachers while practicing these technical skills, minimizing the preparation required to facilitate the workshop. It teaches technical skills within an applied context, making the learning more motivating and more directly applicable to what the teachers will be presenting in the classroom.

As you work through the steps in each lesson or guided practice with the teachers, they will be learning the same skills that they will teach their students. If the grade level of the lesson plan is appropriate, they may use the same lesson. Your workshop participants may not have time to practice all of the steps in the lesson at each workshop, but they should be able to practice the most essential steps. In each module, we provide guidance on what parts of the lesson to practice and how long to spend on each part. Although many teachers can organize a lesson so that student can practice skills that the teachers themselves have not mastered, most teachers feel uncomfortable doing so. They would prefer to have a level of expertise with the technology before permitting students to access it. In addition, practicing what the students will be doing helps teachers understand the problems (both conceptually and mechanically) that students are likely to encounter and be prepared to assist students in overcoming them.

Ending the Workshop - Each module finishes with directions on how to close the workshop. Providing processing or reflection time at the end of a workshop is important; during this wrap-up of the session, participants can think back through what they have learned and connect it with prior knowledge. They also have a chance to think about how they feel about what they have learned. This sets the stage for future workshops: they leave with a good feeling, which translate into enthusiasm for the next session. Make certain to save time at the end of the session for this closing activity.

Support Materials

In addition to the training guide, other support materials have been prepared for you to use as resources during the training workshops. These materials include:

Training Slides - There are training slides for each module in the manual. These training slides go hand-in-hand with the instructions in the manual and are the backbone for facilitating the workshops. Along with each training slide are speaker's notes, which give the background and intent of each slide. The training slides are written in HTML and can be viewed from any computer with Internet access. Teachers can pull up the training slide on their own workstations when a projection system is not available. Each training slide has a table of contents to make it easy to jump to various sections (for example, during a review session) and a summary table. The summary table contains both the text of the bullet points on each slide and the notes; it can be printed and used for review or practice before the workshop.

Guided Practice Sessions - Guided practice handouts have been prepared for a few of the early workshops. These sessions are aimed at giving teachers the chance to practice specific skills so they use the software and tools successfully. Similar to the lesson plans, they provide a step-by-step support system for successful implementation of the skills. They do not, however, link directly to curriculum. With novice teachers, it is probably best to stand at the front of the room, demonstrate each step, and have the teachers follow on their own workstations. You will need to circulate among the teachers to make sure that they are able to practice each step. More advanced teachers may benefit

from watching you perform a series of steps and then trying the steps on their own. Or, in some cases, they may be able to complete the steps without a demonstration.

Student Lesson Plans - Starting with Module 4, each module has student lesson plans with instructions on how to implement the lesson. Take time before the workshop to review its lesson plans. Note the prerequisite skills for the lesson, and make sure the participants in your workshop have them (if not, some direct teaching may be necessary). You will want to focus your participants not only on the technical skills that they will learn but also on the educational implications of the lesson (how it will be integrated into the curriculum, how students will benefit, and so on).

Summary of Research - Some modules include a summary of research articles. These summaries present current research findings on effective practices for integrating technology into the curriculum. There are many ways of using technology with students, but not all of the methods are effective. These handouts highlight research that can help teachers differentiate between effective and ineffective practices. As you work with teachers, help them move away from personal conceptions of the use of technology toward uses known to be effective. For example, some teachers may still subscribe to the 1970s concept of "programmed learning" and view the computer as a personal tutor for individual students to use in a drill and practice mode. All of the lessons in this manual focus, instead, on using the computer as a tool in a collaborative learning environment with students working as part of a team that provides and calls on resources within the larger community. The research summaries help support the teachers as they make this conceptual transition.

Glossary of Technical Terms - A glossary defines technical words that may be unfamiliar to the teachers in the workshops. Please give the teachers a copy of the glossary during the first workshop and encourage them to refer to it throughout the workshops.

The next section discusses the steps involved in preparing to be the trainer and facilitating a workshop.

The Trainer's Role

As a trainer, you have many roles to fill. You are the "guide on the side," rather than the "sage on the stage." Your job is to assist the teachers as they are actively involved in learning, not to stand at the front of the room and spout information throughout the workshop. You are the motivator, offering words of praise, encouragement, and enthusiasm, helping the teachers over the rough spots. You are also a role model, showing how comfort with the computer can be developed. By modeling a teaching technique that is known to be beneficial for teaching technology in the classroom, you are giving your participants more tools to use in their own classrooms. You are a troubleshooter, showing the teachers how they can resolve technical problems. You are the time keeper (or you can assign a participant to that task), making certain that you complete the major tasks on the agenda. You may also enlist the help of proctors who circulate among participants and provide one-on-one technical support.

Understanding the Adult Learner

Your workshop participants are adult learners. Research has shown that adults are motivated when they can control their learning in a safe environment. They prefer self-assessment to other forms of assessment. They value learning that increases their autonomy and helps them create personal meaning. Effective workshop trainers provide participants with practical experiences that they can apply immediately with constructive feedback. An effective model for satisfying professional development sessions for educators must provide time for individualization, time for interaction with learning materials, a comfortable environment, time for reflection, problem solving, cooperative learning, and active participation. The ideal staff development includes some level of choice for participants, demonstration, practice and feedback, and ongoing assistance and supervision.

For example, researchers Joyce and Showers found that:

No skills were learned in staff development sessions that consisted only of theory and demonstration.

When the session included the opportunity to practice, 90 percent of participants learned the skill but only 5 percent implemented that skill in their classrooms. When the participants received follow-up coaching in their schools, 95 percent implemented the newly acquired skill in their classrooms.

These statistics demonstrate the absolute necessity for effective follow-up of the training activities. The staff training model used in the Open Gateways programs reflects this research. As a staff trainer, you supply the basic technical skills training and facilitate the process as teachers learn to integrate technology into their curriculums. You also provide some level of follow-up in the form of email or telephone support between workshops. More importantly, the workshops are organized with a follow-up session for each training session. During this follow-up session, you must foster peer interaction, giving the participants an opportunity to coach and be coached by other teachers from the school site. In addition, consultants at Sun's Open Gateways schools are working closely with a small, select group of teachers from the school site using an intensive peer-coaching support model. These teachers, in turn, support the other teachers involved in your staff training workshops.

Current research demonstrates that to be effective as trainers, we must meet the needs of our constantly changing, diverse population and understand some basic facts about interactive staff development:

Teachers, more often than not, are aware of their shortcomings and strong points. Most teachers know their strengths and weaknesses and welcome the opportunity to learn the particular skills they feel they lack. During workshops, maximize the level of choice that your participants have, giving them plenty of time to practice the skills they need to learn.

Teachers value highly their interaction with students. Teachers know their students better than the district and administrators do. When teachers are consulted and included in curriculum development, their powerful knowledge base leads to student achievement. During the workshops, emphasize that the curricular materials developed and presented were created with the assistance of teachers and are intended to be a starting point for the teacher's own curriculum development. Encourage adaptation of the materials, and provide time during the workshop for the teachers to modify and refine the materials for use with their own students.

Teachers' work lives are enhanced by professional interactions with other adults. There are many problems associated with teacher isolation. Providing opportunities for teachers to interact and share ideas with other professionals lets them learn from you, community members, and each other. By sharing experiences with other professionals, educators broaden their understanding of their multicultural school setting and the needs of students and their families. Structure workshop time so that there is plenty of opportunity for the teachers to be engaged in problem-solving activities with other teachers, helping them form strong bonds between staff members. Holding teachers accountable for completing community outreach projects creates an additional opportunity for interaction with other professionals.

Participation in interactive staff development opportunities requires new knowledge and skill, and will be accompanied by considerable stress. These workshops involve both new skill development (learning to use technology) as well as interpersonal development (learning to work with others). The training workshops must be organized so that the participants can work through this stress and take large steps toward integrating technology in their curriculum.

The Experiential Adult Learning Cycle

The staff training workshops outlined in this training guide support the experiential adult learning cycle, developed by researchers Ted and Nancy Graves, and outlined below:

Experience: participating in an activity or event, which is the impetus for new learning.

Identifying: providing teachers with an opportunity to share their experience publicly, helping to identify aspects of it and clarifying the range of reactions.

Analyzing: focusing on individual observations, reactions, and interpretations of the sharing that takes place in the workshops.

Generalizing: relating the learner's insights and conclusions about the experience to broader contexts.

Know Your Audience

Be aware of who will be attending the workshop; is the group ethnically diverse? What amount of technology understanding do they have? Have they been through other staff training with Sun volunteers? (If so, connect with the trainer and find out how it went.) What type of students are they working with? Knowing the answers to these questions will help you in pacing the workshop, choosing examples to share, and even knowing what jokes they might enjoy.

Anticipate that not all of the participants will be easy to work with. Here are examples of some of the "personalities" you may run into and tips on working with them:

Ms. Expert. She already knows everything. She interrupts the workshop frequently to explain technical details no one else wants to know. As you work with her, you may find out she has technical knowledge but her concepts for integrating technology into the curriculum are not very feasible. She may avoid sitting at the keyboard because she doesn't want you to observe her and judge her. Tips: Minimize her monopolization during the workshop as much as possible or she may move the workshop off track. You may break into her talking, thank her for sharing her insight, and tell her that it is nice to have someone so knowledgeable in the group. You could suggest that others may want to use her as a resource and that maybe she would like to stay after the workshop to talk more about the topic. Be firm about the time limits of the workshop and the scope of what is being taught if the interruptions continue.

Mr. Scaredypants. This teacher has very little real technology understanding and is uncomfortable implementing technology-infused lessons in his classroom. He is very nervous if he doesn't understand something about the implementation and wants to understand every little detail. However, when confronted with a glitch, he panics and just stops. For example, when clicking on a link to a Web site in a list of links you prepared for him, one of the links displays a "site not found" error. He doesn't know what to do, says it will never work in the classroom with these problems, can't figure out that he should go back and try the next link, and waits for you to do the next thing for him. Tips: Encourage other participants to assist him. Reassure him as much as you can. Make sure that when you circulate around the room you keep an eye on what he is doing. Watch him from across the room, and if he is stalled, walk over to find out what the problem is. Make a lot of comments like "Everyone has this problem when they first start" and "You're doing great!"

Ms Distraction. She rambles, she tells long stories, and she doesn't ever get to the point of what she is saying. When you try to pin her down, she is vague or tries to change the subject. She has big plans, but never finishes what she starts. Tips: Help her focus. Suggest that she work through things step by step. Ask her "How is this coming?" or some other question that lets her know that you hold her accountable for what she is supposed to be working on.

Mr. Complainer. He doesn't like anything about the process. He can't understand why he has to waste his time doing this workshop. He complains about the hardware and software. No matter what you suggest, he wants it different. Tips: Humor him. Try to distract him. Try to get him involved. If all else fails, confront him directly by taking him aside and asking him to try to take a more positive attitude. Explain that his negativity affects others in the group.

Ms. Reluctant. She didn't want to participate. Why does she have to attend? Why did the principal make them do this? She would rather they just took the computers away if she has to spend all her time in these "useless meetings." She brings in her work, like grading papers, and ignores what you are saying during the workshop. Tips: Ask her direct questions during your talks. Stand near her, or position her near you. Use body language to let her know you hold her accountable to participate. If this doesn't work, take her aside and talk directly about the issues.

Mr. Withdrawal. He seems to be listening, but never volunteers information. When called on, he seems to be floating, not paying any attention. At the computers he does little or nothing. He tries to melt into the background and not be noticed. Tips: Find out what is wrong. Is he afraid of the technology? Feels he is in over his head? Bored? Ill? Until you find out what is going on, you won't be able to assist him in his learning.

Organizing for a Workshop

Prior to the workshop, you'll want to check out the facility in which it will be held. Here is a list of things to do to make the workshop run smoothly.

Find out what you can about your workshop group's technical knowledge. The teachers at the school site have been divided into two roughly equal size groups: novice and intermediate/advanced. The definition for "novice" and "intermediate/advanced" will likely vary from district to district and year to year. In schools in which computers have been available for a number of years most teachers will already have a good understanding of basics (such as using a mouse, saving and finding files, using a keyboard, selecting text, and changing fonts). In schools in which teachers have had little or no computer access, you may find teachers who have never typed, don't have any concept of file storage, and have never been on the Internet. Vary the pace of the workshops according to the experience of the participants.

Find out where the workshop will be given and, if possible, visit the room before the workshop.

Check to see what version of StarOffice is installed, and find out if the Internet connections to the room are up (and if not, what needs to be done to fix the problem).
Is a projection unit or large TV monitor with a VGA to NTSC signal converter (computer to TV conversion) available for the workshop? Is it hooked up? Working? Any tricks to getting it to display that you need to know?
Will someone with a key be available to open the room and have the code to shut off any alarm system?

Do you have enough handouts for all of the teachers? Some extras just in case?
Is the network up and running?

Does the lab or classroom have a list of steps that should be followed to boot up the network and shut it down? Is there a troubleshooting guide for network problems? Do you have a name and phone number of a technical person to contact if you run into a problem?

Do you have the background information on the teachers about their current level of understanding of the topics? Have teachers been grouped appropriately (such as offering a slower-paced class for novices and a faster-paced class for experts)? Has the information about the grouping been conveyed to everyone who needs to know about it?

Create a handout that lists the names, positions, and email and other contact information of the trainers/helpers attending the workshop and pass this out to participants.

Find out about the school: demographics, challenges, successe. Prepare an agenda for the workshop. Take into consideration the culture of the school. For example, does 8:00 mean 8:00 or 8:15 to the teachers? Do they need to break for lunch at 11:30 because this is when the cafeteria serves lunches? What time do they finish and when are they accustomed to leaving the campus?

Ask the school's network administrator to post login procedures. Send reminders to teachers asking them to bring their passwords to the training.

Preparing the Workshop Contents

You will need to take some time before you give a workshop to prepare the content. Tips for preparing include:

Practice with the training slides. Print out the training slide summary pages, which contain the text of the slides and the talking points. Read through these notes while clicking through the training slides. Make marginal notes. (You may want to set the margins wide in your browser software print setup to provide plenty of room on the pages.) Practice what you will say during the workshop. Think about your own experiences that relate to the topics at hand and be prepared to share these with your learners. Jot down jokes that you might use to break the ice.

Walk through the guided practice or lesson plan steps. Do each step in the guided practice or the lesson plan step-by-step guide as though you were a workshop participant. Put yourself in the place of a novice learner - what questions might you have? What steps seem confusing? This will help you be ready to answer questions that participants might have during the workshop. Make marginal notes to remind yourself of ideas you came up with during your practice.

Make a list of what you find most exciting about this technology, its application to education, and the lesson being outlined. Your participants will be more excited about the learning if you are excited. It may help you to think about why teachers should learn this particular technology so you can share this with them.

Debrief after the workshop. After the workshop, talk to another individual who was there about your experience. It may help to talk to a teacher from your group or another volunteer who was involved in the session. What went well? What didn't? What types of activities did teachers respond to best? Which were unpopular? Were you enthusiastic? Did you express your thoughts well? What could you do to improve for the next workshop?

Establishing Norms

The best way to conduct a workshop is to structure it to meet the needs of a diverse learning group. Begin by setting the stage for the workshop.

Here are some opening comments you may want to make:

"I might get excited about what I'm talking about, so if I go too fast, please slow me down!"

"Ask anything you want, and I'll do my best to answer it."

"When you are working with your partner, hands off the mouse!" (You might want to explain this: when students work at the computer, it is too easy to grab the mouse rather than practice new computer vocabulary and explain a concept. But taking the mouse doesn't let the person sitting at the computer learn by doing and may be frustrating.)

"Anyone here can attempt to answer anyone else's questions. We're here to support each other."

These comments help establish the norms for the workshop, letting the participants know what you expect of them and what they should expect of you. The idea is to promote a more relaxed environment where each person feels comfortable raising questions and offering suggestions. This leads to increased understanding for all. The workshop leader should not be viewed as someone who has all the answers.

Each module contains a training slide with norms for the workshop. You can add to these, elaborate, and implement the norms in whatever method is most comfortable for you during the training sessions.

Opening the Workshop

During the opening of a workshop, you need to focus the audience on the topic. The idea is to:

- Direct energy to the topic for the session
- Relate the topic to personal interest
- Tie the topic into previous knowledge

Gain rapport with the workshop participants. Rapport is the product of credibility, mutual respect, and perceived similarities and personal concern. The test for rapport is responsiveness. Your audience will reflect what you send, and personal confidence, playfulness, enthusiasm, and task orientation are powerful messages to send.

General Presentation Tips

Learn and use every participant's name. This makes your audience feel like you care about them as people.

Avoid "technobabble" and the "alphabet soup" of many acronyms; they will tune you out if you don't speak their language. Excessive use of unfamiliar language will make your audience anxious. Teach them general concepts using words they are familiar with, and introduce new vocabulary with adequate definition.

Establish your ground rules from the beginning. For example, you might establish a signal for quiet and attention to you (such as turning off the lights in the room or addressing the audience in a particular manner, such as "ladies and gentlemen," then stop until you have their attention).

Provide lots of positive reinforcement, saying things like "Wow! What a unique way to do this! This method is great! Do you mind if I share this with other teachers?"
Stop frequently and ask for questions. If there is a question that you think others in the group could answer, solicit others to explain the idea. This will help you judge understanding and make it more interesting to participants.

Use humor; research shows that this makes participants much more receptive to learning as well as more creative in problem solving.

Watch for the "overload" signals: blank stares into space, rubbing eyes, shifting around in seats, whispered conversations, frowning faces, staring at the clock. If they reach overload, stop. Say "I'm seeing dazed looks right now. Are you getting overloaded?" or "I'm seeing signs that everyone needs a break" or "I think I've talked enough. It looks like a few people are confused - what didn't I explain very well?"

Be aware of the technical level of the participants in the group. Are they all beginners or a mix of intermediates and advanced users? You may need to support all levels in the same discussion. When you begin to talk to the group about an "advanced" topic, warn the less advanced participants. Let them know they may find it confusing, but you'll explain it as well as you can. At times, a teacher in the group will ask an advanced question. Preface your answer with a comment such as "What Mrs. Smith is asking is a very good question, and it is related to an advanced feature. What she is asking is. ." and paraphrase the question. If the answer is complex and not important to beginning users, tell them this.

Let them know that if they are new to using computers, not everything they do in the workshop today will "stick" with them. Reassure them that this is normal, that it becomes easier with practice, and that it will become familiar over time. Remind them of their resources. They can use the guided practice sessions for reference, they can email you or other trainers with questions, they can ask other teachers at the school, and so on.

Connect information or ask participants to connect information. A "this" is like a "that" in what ways? How are they different? These connections enable participants to recall information later, when it is needed.

Backtrack to previous learning. Review what was learned before, and show how it applies to today's topic. This allows learners to ask questions that may have occurred to them since the last workshop and helps to bridge previous knowledge to new learning.
Pace and lead: acknowledge the group's current state of understanding, and treat that state or experience as valid. Match their state. Then, gently lead them to a new state.

Teacher Anxiety

Some teachers in your workshop may be experience high levels of anxiety. All of them "know" they should be familiar with technology and be able to use it with students. But many of them may have had only negative experiences with computers, often with no one to turn to when they had questions or problems. You may hear some of the teachers voice these anxieties, most often jokingly, as in, "Don't let me near a computer! They always break down when I touch them!" You will need to reassure them. Here are some useful comments:

"There's nothing you can do that will break the computer, only some things you can do that may lose files."

"It takes time and patience to learn to use a computer. You can do it!"

"Everyone has trouble when they first learn to use a computer. It does get better, and it becomes a very useful tool."

Learning from Peers

Many cognitive scientists and educational researchers agree that the bulk of learning occurs due to peer communication. Talking about a topic, explaining a concept, and trying to formulate questions and answers are all part of learning. Workshop participants form a rich culture of peers who can interact to learn new concepts. The theory of "proximal development" is derived from work done by Vygotsky. It rests on the concept that a person learns by interacting with peers or teachers to carry out thinking processes jointly that are more advanced than could be managed independently. This joint problem-solving process then serves as a basis for learners' subsequent independent efforts. This happens when students are heterogeneously grouped, with students at a range of developmental levels interacting with each other. Workshop participants can often learn much from each other because:

Language is an instrument of thought, so constructing workshops to give learners many opportunities to discuss concepts helps them learn the concepts.
Your workshop participants already share a common language based on professional experiences and may often be able to explain new ideas to each other better than you can explain them.

Learners new to a subject can often explain it at a level appropriate for other new learners because they may be aware of how they gained understanding and what misconceptions can occur.

Teaching another person about a topic can be a good method for learning the subject.
Forging bonds with other teachers at the same school facilitates learning and sharing ideas outside of the workshop setting. This leads to more time spent on the topics presented.

Your role as the workshop facilitator includes watching for misconceptions that can be spread by participants and assisting them in overcoming these limitations. Also, you may need to "bridge" information for participants, explaining how information fits together. For example, you can show how what was learned in word processing applies to Web page development, as well as what differs in the two types of document preparation.

Cooperative Learning Strategies

Cooperative learning strategies are means of providing the interaction between teachers that research has shown to be so important. Cooperative learning decreases anxiety, increases retention of content, and improves motivation during workshops. Peer teaching and learning are often more effective than other means of teaching. There probably will be teachers in your workshop familiar with cooperative learning strategies, so you need not be the expert. However, as the workshop facilitator, it is your responsibility to organize the activities and tell the teachers when to form groups and what is expected of them in the group. Outlines for the workshop rely on group activities as much as possible; these activities make the workshop more interactive and thus more interesting for participants. Group work also requires the participants to take an active role in what they are learning, which helps make the material easier to understand and recall. Even if there are many volunteers working with this group of teachers, unanswered questions will remain. Group work provides the teachers with the opportunity to ask and answer these questions, and often peers are better able to explain the concepts. Group work also minimizes status differences, maximizes on-task behavior, helps individualize learning, and makes a workshop more productive. Here are some techniques for grouping participants for activities in subsequent modules.

Using Think-Pair-Share

Think-Pair-Share is a technique used for breaking the ice and focusing attention on certain topics. The teachers in your workshop will know each other, but they may have never worked together in group activities. You can use a Think-Pair-Share activity near the beginning of your workshop to help them to get a feel for other participant's understanding of technology.

1.Pair up participants.

2.Give them some questions to discuss, such as "What are your concerns about using this software and hardware with your students?" or "What kinds of problems have you encountered in using the materials we provided during our last workshop?"

3.Instruct them to take notes when their partner speaks, and tell them they will be asked to share this information with the class as a whole after the activity. Let them know that the issues and concerns that they bring up will be addressed during the workshop (and make sure you do address them).

4.Tell them how much time they will have to discuss the questions. Midway through the time, have them switch, so the listeners can speak.

5.When the groups report, have each participant report the main ideas of his or her partner. Write these on a whiteboard, easel paper, computer projection system, or other large display as they are reported.

6.Come back to these issues at the end of the workshop and see if there are any concerns or questions that the workshop has not addressed.

Grouping Using Four Corners

Often you will want to group participants in a workshop so that they have the opportunity to work with others. You may choose to group teachers in like-grade groups (K-1, 2-3, 4-5) or by subjects (math, science). At other times, it is useful to group teachers by a particular ability, such as computer expertise. Four Corners provides a simple method for heterogeneous grouping.

1.Ask the teachers to pick up their materials and stand up. Point to a corner of the room, and say, "If you are a computer expert - everyone turns to you to answer computer questions - move to this corner of the room." (Teachers may not self-select, but other teachers in the room will make them move to that corner.)

2.Then say, "How many of you are complete novices - never used the Internet or hardly know how to use a computer?" Ask these teachers to move to an adjacent corner.

3.In the other two corners, have "experienced, but not expert" in the corner next to the expert teachers and "somewhat inexperienced" in the final corner.

4.Have them move out of the corners and line up, experts on one end, novices on the other, and the others in between.

5.Snake the line around, and pair them off, expert with novice, down the line until each person has a partner. If groups of three are needed, select a teacher from the center of the line to go with each pair as the groups are formed (or two for each group of four).

Jigsaw Activities

Jigsaw activities offer another method of grouping participants in a workshop. You will seldom have enough time in any workshop to cover the amount of material that is desirable. Jigsaw activities can give participants a deeper level of understanding about specific aspects of the topic and allow them to learn for others in the group. In addition, jigsaw activities encourage the teachers to become expert in particular areas of technology and rely on the expertise of other teachers in other areas, a strategy that creates positive interdependence between staff at the school. To "jigsaw" an activity, break it into essential parts. For example, if a lesson plan calls for students to scan in images and place them in a word processing file, you can have one group of teachers learn to do scanning, another learn how to format word processed documents, and a third learn how to place and move images.

1.Break your class into cooperative groups of three teachers each. Have them go through the lesson plan together and discuss who will practice which skill.

2.Then split the class into three groups: scanners, formatters, and picture placers.

3.Provide a volunteer or learning materials to each group to help them learn the skill.

4.After the skills have been learned, have the participants go back to their groups of three and teach the skills to the others in their group.

Using Numbered Heads Together

Sometimes you can't be sure if the participants in your workshop understand a concept you are explaining. The Numbered Heads Together activity lets you quickly check for understanding.

1.Divide the number of participants in your group by four and have participants number off from 1 to that number (for example, if there are 21 participants, then number off from 1 to 5)

2.Have the "number 1s" meet in one spot, the "number 2s" in another spot, and so on (there will be three to five participants in each group).

3.Pose your question.

4.Let the groups briefly discuss their understanding (while you eavesdrop on the conversations).

5.Call on any person in the room to explain his or her group's understanding.

Three-Step Interview

This activity can be used as an ice-breaker or anytime that workshop participants would benefit from sharing information. The workshop leader should provide examples of key interview questions that are appropriate for the activity.

1.Divide participants into groups of four.

2.Have each group split into two pairs.

3.One person interviews the other for a set time (for example, three minutes).

4.Switch so that the interviewer is now the interviewee.

5.Next, go round robin around the group and share information (person 1 shares information, then person 2, etc.)

Round Table

The Round Table activity can be used to have participants discuss a question as a planned part of your workshop or to participants discuss a question that arises during the course of conducting your workshop.

1.Divide participants into groups. The can simply break into groups of 4 or you can use the Numbered Heads grouping strategy discussed above.

2.State the problem to the participants.

3.Ask them to discuss the question.

4.Each participant jots down his or her idea on a piece of paper and passes it to the next person in the group.

5.Each group turns in its paper at the end of the session.

Teaching Tips

I Hear You, I See What You Mean, I Really Feel Good About This

People have different learning styles, processing information in different ways. That's why difficult concepts need to be explained in more than one way to be clear to the whole audience. Auditory, visual, and kinesthetic learners each have different methods of coming to an understanding.

How can you identify these learners? Often, what they say to you will provide cues. For example, the auditory person might say, "I hear what you're saying, but it sounds like the process would be too complex for my students." The visual learner might say, "I see what you mean, but I can't visualize how my students will be able to do this." And the kinesthetic learner might say, "I feel like I understand what you are saying, but I'm not sure my students can handle these steps."

How can you support all these types of learners? After listening carefully to what they say, mirror back their language. This will make participants sense that you are paying attention to them, and they will be more comfortable. Provide examples using all of these senses: explain things in words, using general descriptions and metaphors, then use a visual device (graphics or screen projections), and then give the participants time to practice the steps with their own hands.

Warning Signals: Beware!

While teachers are working at the computers, watch for the danger signals that indicate frustration. The last thing you want is for your participants to leave feeling that using technology tools is "just too hard to do." They'll never implement it in the classroom if this is how they feel. Make the rounds of the room, helping any participant before the frustration gets out of hand. Signs may include staring at the computer without touching the mouse or keyboard, frowning, sighing, muttering, pounding at the keyboard, taking tentative, baby steps without accomplishing anything, and overt complaining or anger.

Also, watch for burn out. When a lot of new material is presented in a short time, participants may stop being able to focus on the material. Stop teaching and ask everyone to stand up and stretch.

Tips for Getting a Discussion Going

If you don't know what questions to ask to get a meaningful discussion going, ask the teachers to supply the questions. If there are too many questions, "jigsaw" them, giving each group one or two questions to answer and then share with the whole group. Give groups a time limit for presenting and stick to it. Write down key ideas as the participants relate them.

Tapping into Teachers' Pedagogical Knowledge

The teachers in your workshop are very knowledgeable about what will work in their classrooms with their students. The workshop offers them an opportunity to share ideas for incorporating what they are learning into their curriculum. Ask your group: "What have you learned so far in this workshop that you will use with students? How will you use it?" "What problems do you feel you might encounter implementing this with students? How can you solve these problems?" If it doesn't come up in the discussion, you might ask, "How will you organize your class so that all students have a chance to use the computers?"

Wait Time

When presenting a workshop, it is important to occasionally stop talking and ask participants if they have any questions. For you, as the presenter, it's helpful to be aware of the concept of "wait time." Time feels a lot different to you, standing in front of the group, than it does to the participants, processing what you have been talking about. When you ask them for questions, your tendency will be to watch them and think "Do they have any questions? No one is raising a hand. Hmmm . . . must be no questions." During the same time, participants will be thinking "Questions? Probably. Let's see . . . what was that question I had? Oh yeah. Now, how do I say it so it doesn't sound silly?" The amount of time it takes the participants to think how to ask their questions will be longer than the time it takes for you to see if they have questions. Research has shown that if you, as the presenter, prolong your wait time after asking a question (drawing it out to an amount of time that might seem uncomfortably long to you standing at the front of the room), your participants will begin asking more questions. Responding to questions raised by participants leads to

better attention to the topic, better understanding of participants' needs by the presenter, and a more interactive workshop in which everyone feels more comfortable.

Assessment

Determining how well the workshop proceeded (assessing yourself as a trainer) and how much the participants learned (assessing the teachers) are not easy tasks. The school may want to take this responsibility, giving the teachers some sort of pre-test and post-test or self-assessment. Typically, teachers (and many other adult learners) resent being tested and are reluctant to take tests. Most likely, you will need to rely on your own observations of the participants to see if they are "getting it" or not. These workshops are designed to maximize small group participation, thus increasing the teaching and learning as well as checking for understanding that occurs in the classroom. You will be able to find out how much the teachers are learning by observing what they do during the hands-on practice sessions and by probing them to find out how much of what they have done in the workshops has made it into their curriculum. Teachers excited by what they are learning and comfortablewith their new-found skills will naturally want to share their knowledge with their students.