Supporting Student Learning in Computer Labs

Computer labs are unique teaching environments, and thus present unique instructional challenges. This issue of the CIDR Bulletin is designed to help instructors address these challenges and develop effective strategies for teaching in computer labs.

MAINTAIN FOCUS DESPITE DISTRACTING ENVIRONMENT

Because computer lab classrooms are inherently distracting, instructors find that structuring class sessions and communicating expectations to the students often helps maintain focus during class.

- Establish ground rules for the lab. Use the first day of class and the syllabus to explain how students are expected to behave during lab sessions. For instance, “When I am talking, I need eyes up front: no other talking, emailing, moving the mouse, etc.”
- Structure the lab and tell students what to expect. For instance: “For every lab, I will give a preliminary presentation explaining the lab exercise. Then you will have N minutes to do the exercise, during which I will walk around to provide help, answer questions, etc.”
- Start the lab session on time, and announce the start and end of class.
- Try to keep lecturing to a minimum, and use eye contact, visual aids, and gestures to keep students focused on you. Consider having students cluster together away from workstations for the lecture portion.

MONITOR STUDENT PROGRESS: CIRCULATE, CIRCULATE, CIRCULATE!

Most of your time as an instructor will be spent answering questions and monitoring student progress. Although students may not say they have questions, staying available and moving around the lab will help students stay on track and complete their work.

- During the lab exercise, move around the room, checking in with students. Moving around and answering questions establishes your presence as the instructor, increases your accessibility to students, and helps you gauge student understanding.
- Walk behind the rows and look over students’ shoulders to be sure they’re on track. As you begin to work with an individual student, keep an eye out for other students who may have questions—raised hands, students coming up behind you, etc. Divide your time equitably among students.
- Get a feel for how long the assignment should be taking, and be alert for possible points of confusion. If a student is behind the class, ask them how they are doing, if anything is confusing them, etc. If a student has moved ahead of the class, check in to be sure they’re understanding the concepts, etc.
RESPONDING TO SOFTWARE OR HARDWARE PROBLEMS

Unanticipated software and hardware problems can cause wasted lab time. Such problems are also a source of stress for the instructor.

- Arrive a few minutes early to a lab classroom to check that the software and hardware are working properly.
- If a problem comes up, be prepared with a suggestion for the students involved while you take steps to fix the problem. Some examples: reviewing a chapter in the book on the concepts, getting together with an assigned group for a project, or work on another project that doesn’t require the computer.
- For technical assistance, many instructors keep a list of emergency contacts among their materials.

HANDLING UNEVEN STUDENT PROFICIENCIES IN TECHNOLOGY

Students come into a computer lab class with varying levels of technology proficiency. Reviewing fundamental procedures and suggesting additional preparation may help them to avoid lost files and other frustrations.

- Discuss how to save work often, and appropriate backup procedures.
- Try to avoid having your time dominated by students who are less confident about their proficiency. Explain to students how to find answers, then ask the students to use that procedure themselves. If a student has asked a number of questions in the same class period, let them know they may need to wait while you answer another student’s “first” question.
- Recommend outside tutorials or workshops, such as Catalyst Walk-Ins or scheduled workshops, or Computing Fundamentals online tutorials. Include these resources in a syllabus. More information at: http://catalyst.washington.edu/workshops/index.html
- Give positive reinforcement to a student who has made significant progress in proficiency.