

Managing Computer Lab Sessions - Keeping It Focussed

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For many subjects it is useful to use Web-browsers for students to research information, but the difficulty is that students often get distracted from the original purpose or worse still they sneakily use extra browser windows to hide their personal email and games. This paper plans to outline a framework to efficiently manage computer lab sessions and will include the following aspects: Designing tasks in appropriate stages to ensure clarity, Setting boundaries and expectations before the task, Clearly communicating the task in class, Monitoring the task effectively, Giving appropriate feedback and Measuring outcomes from the time spent on the PCs. This paper's ultimate aim is to provide a system that increases student productivity and provides a clear skeleton for teacher planning.

Introduction

An innovation in classroom teaching is the computer lab or computerized classroom where students can each use their own PC to learn from. These labs bring in new media and methods of interaction such as the use of the World Wide Web, video content and instantly marked exercises. Kentara (2007) advocates the following benefits: Student interest, vocabulary expansion, more interesting exercises, realism & more versatile assessment. However an Internet enabled PC can also be an inlet for distractions such as personal email, playing Flash and Java games and personal messaging during lesson time.

These challenges led me to re-evaluate traditional planning and classroom management tools to see which could be used effectively and which would need to be adapted to provide a more robust framework for teaching in this environment. This paper's aim is to propose a system that could increase student productivity and provides a clear skeleton for teacher planning.

Task Type

Wood (1999) suggests that Internet based tasks fall into the following categories: Acquiring Skills, Virtual Touring, Searching for Information, Problem Solving, Generating Results, Researching, Exchanging and Publishing Information and Studying the Internet. Table 1 shows some example tasks for each of these categories.

Table 1.

Table 1 - Task Categories

Category	Example Task
Acquiring Skills	Taking a tutorial to help with PowerPoint
Virtual Touring	Students look at pages about a tourist destination
Searching for Information	Students use Google to find out information about television in different countries.
Problem Solving	Students use search engines to solve trivia questions
Generating Results	Students access IMDB to find out the top 10 movies of all time
Researching	Students use a combination of searching and emailing to find out about life in Malta.

Acquiring skills is the easiest task to control, because it is the computerized equivalent of controlled practice. The software will control the task and ensure the student does it, but this does not prevent a student from wilfully deviating from the task. The other task categories require a degree of trust, because they need reasonably free access to the Internet. If Internet access is required, try to set clear ground rules, such as the use of Chinese Search Engines, use of personal email sites and content that is not directly relevant.

It is also useful to decide if this task requires one person per computer or if it is possible to set the tasks up for pairs or even three people per computer. Students are far less likely to check their own email in front of their peers and games are rarely appealing to two people on the same PC.

Task Input

In TOEFL classes I have found that students can be distracted by their PC screens, even before they start the task and so where possible I will provide the majority of the input before they arrive at the computer lab. Alternatively I will try to make them sit away from the computers, so that they are less likely to look into the screens.

In some computer labs it may be difficult for the student to look at their computer screen and see a whiteboard or projector, so it is useful to have prepared handouts with instructions and tasks that allow the students to follow those rather than try to look at the whiteboard and their own screen. This written handout can also be a constant reminder of the objective of the computer lab work.

Task Timings

Task time limits are considered particularly useful disciplinary tools in general. McDaniel (1986) stresses that time limits should be tight and ensure a sense of urgency. This is especially true where there are a plethora of distractions. Berque D, Bonebright & Whitesell (2004) highlight some of the distractions for students when using the computer and they include emails, instant messaging, Internet browsing and other computer applications.

Task Monitoring

Keith-Spiegel & Whitley (2002) remind us of the many methods of cheating using a computer including: cheating on tests, plagiarism, facilitation, misrepresentation, failure to work as part of a group and sabotage. The Windows system has a number of keyboard shortcuts, which can help to facilitate such cheating and are shown in Table 2. One should also watch the task bar for applications that should not be there.

Table 2 - Windows Keyboard Shortcuts

Keyboard Shortcut	Used For	Potential cheating
Ctrl - C	Copying text or graphics	plagiarism
Ctrl - V	Pasting the text or graphics	plagiarism
Windows - D	Showing the desktop	To hide an illicit application
Ctrl - Alt - Del	Controlling tasks	Sabotaging other people's PCs
Alt-Tab	Quickly Switch between applications	To hide or start an illicit application

Task Feedback

When the students are using computers and working at their own pace it may be difficult to give whole-class feedback. This is

a similar problem to what happens when students are expected to write in class. Paquette (1982) suggested that for writing you give the last ten minutes of the class to the activity and then it could be finished off for homework. A similar strategy could be used with some computer classes, particularly research where you want to ensure that they are on the right track.

Task Outcomes

If there is specialist software on hand then one of the benefits of that software could be that it is instantly marked and sent to the teacher's PC. However most computer labs revolve around research or writing output and in these classes there is a need to create a system for measuring the quantity and quality of output.

Where the objective is to acquire specific computer knowledge, virtually tour, solve a problem or generate results then this can be tested by the completion of the task or a quiz at the end of the performance. These can either be printed and hand marked or you can use a computer generate quiz. A professional solution to this problem is a piece of software called Blackboard, but there are also free solutions that can create effective multiple choice quizzes and can be reviewed on-screen. One such program is: Charles Kelly's Online Quiz Generator and can be found at: <http://a4esl.org/c/qw.html>

It is more difficult to assess the quality of research in a lab session. Emmons & Martin (2002) suggested totaling up the number of sources under these categories: Textbooks, Reference Book, Scholarly Journal, Popular Magazine, Web Documents and other formats. These sources could then be weighted according to their relevance and credibility and finally a mark would be given for the formatting of the bibliography. Although not all of these factors are relevant at all levels it does give a clear framework for assessing the quality of research done and the basic concepts could be adapted to all levels.

There is currently a lot of debate as to how credible online sources are and it is beyond the scope of this paper to go into the arguments in detail, but if the majority of sources are primarily online then there may be a need for a further metrics. Fogg, Marshall, Laraki, Osipovich, Varma, Fang et al. (2001) suggest that each website should be considered according to its: trustworthiness and expertise. These concepts were then divided into the following measurements, as shown in table 3.

Table 3 - Measurements of Expertise and Trustworthiness

Expertise	Trustworthiness
The site is by a news organization that is well respected outside of the Internet.	The site is linked to by a site you think is believable.
The site lists authors' credentials for each article.	The site states its policy on content.
The site has articles that list citations and references.	The site links to outside materials and sources.
The site has few news stories but gives detailed information for each.	The site provides links to its competitors' sites.
The site says it is the official site for a specific topic. (This needs to be backed up with real world details of the organisation.)	The site was recommended to you by a friend or colleague
The site has ratings or reviews of its content.	The site represents a non-profit organization.
The site displays an award it has won. (Please note that awards can be paid for or given in exchange links.)	The site lists well-known corporate customers.

There were also some other indirect measurements included and these were: Real World Feel (Does it also provide connections back to the real-world), Ease of Use, Commercial Implications (Is the source a company), Amateurism & Tailoring (Does the site change according to how it was entered and personal preferences.)

Whiteboard Layouts

Many labs are equipped with PCs to demonstrate the task to the students before they begin, but remember that the whiteboard may be difficult for a student to see once they begin to use the screen and a handout might be more appropriate.

Planning whiteboard layouts may in fact be easier on-screen, because in Windows XP it is possible to capture a screen using the Print-Screen key or ALT Print-Screen to capture an individual window. (Microsoft, 2007) This can then be pasted into most Windows applications including Microsoft Word and PowerPoint. Please note that in certain circumstances this may violate the intellectual property of the software or media company and it does not work with all applications.

Another useful method of displaying information for website sitemaps, website research and general mindmaps is Freemind. (Lee, Lee, Lin & Wei, 2005) This can be downloaded at: <http://sourceforge.net/projects/freemind/> and displayed on-screen during lessons. Once layouts have been created they can be reused and shared with colleagues.

Conclusion

The basic planning process for managing lab classes is similar to traditional classes. However additional planning needs to be done to understand the students assumed knowledge, which not only must include the subject knowledge of the subject, but also that of students' IT capabilities. This must then be brought through into task input required, task types and the style of its delivery. The technology also introduces more distractions for students and so problems need to be anticipated, task timings need to be adjusted and task monitoring needs to be particularly scrupulous. Task feedback and task outcomes need to be individualised to some extent to cater to the student centred nature of computer lab work, but measuring can be easier if software provides support. The challenges of measuring quality of research are increased in this Internet age, where standards are currently in flux. Whiteboard layouts can be made in a more professional and structured way using projectors and computer software. These planned layouts can be instantly displayed in class, reused and shared.

These challenges in time will become a natural part of the planning process and like any maturing pedagogical area will require some initial additional effort. Once this effort has been made, there is one big difference: exercises, handouts and electronic whiteboard layouts can be recycled and shared to reduce everybody's planning time.

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