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Windows 8, and Office 15 in Your Classroom**  
By George R. Neal, Faculty, South Puget Sound Community College



## **Impressions and Ways to Implement Problem Based Learning, Windows 8, and Office 15 in Your Classroom**

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Problem-based learning is a pedagogical approach to teaching technical subjects. It involves designing a problem for students to solve some type of generalized problem which requires them solve some learning objectives during the problem-solving process. It begins with a statement of the learning objectives. These are usually a set or series of specific learning objectives the students will cover during the problem solving process. An example of learning objectives might be statements such as these:

Select computer hardware based on client needs:

1. Workstations
  - 1.b Servers
2. Select Computer Software based on client needs.
  - 2b. Operating systems.
  - 2.c Applications software.

Once learning objectives are determined, the next step is to design problem statement that will lead the students to examine the learning objectives while working in teams. A problem statement generally would describe some sort of business problem which involves technology and forces the teams to think in business deliverables instead of technological solutions. An example of a problem statement might be "The widgets manufacturing company creates about 1000 widgets per day in their plant in Lacey, Washington. They have three shifts of 10 manufacturing technicians who share three computers that control CAM equipment. In addition, there's a staff of five engineers, three administrative assistants, two accountants, a vice president and a president. You must select hardware and software for desktop computing and for three servers."

Students may be given a set of field insights that give them further information to guide them towards solution of the problem. It might be something such as the engineers meeting specialized CAD software and the accountants meeting some type of Accounting Software. In addition to the field insights the students are also given a list of resources such as hardware and software vendors and other resources.

Finally, students are given "deliverables" which is at simply a list of objectives which may include some sort of organized presentation for their team. This may include something like an RFP including a list of equipment and costs and a PowerPoint presentation.

Before implementing the problem based learning scenario there has to be a set of evaluation criteria. This may include peer evaluations, evaluation of written material and evaluation of presentations.

Problem based learning has the potential of covering learning objectives in a way that exposes students to both simple learning objectives and problem-solving. In addition, it is a good vehicle for developing teamwork skills and critical thinking. Although not all learning can be done using this technique, it would be a very useful technique for technology education.

### **Windows 8:**

The second seminar I intended was on the Windows 8 operating system. Windows 8 is a major departure from the Windows 7 operating system. According to our instructor, Windows 8 is a major, ground up rewrite of the Windows series of operating systems. It is designed to have a light "footprint" which means it will use far less RAM than previous versions of Windows. In addition, it will run on ARM processors that are used in smart phones. It includes a new "Metro" interface designed around mobile devices such as the Windows phone and tablet computers. This will provide opportunities for training people because many of the old ways of doing things have changed significantly. The basic design of the Metro interface mostly eliminates double clicking and essentially eliminates the right click. This is due to the emphasis on tapping touch screens instead of using the mouse. The Metro interface eliminates the task bar and start button and introduces the user to " titles", apps, and " charms". It also provides the ability to scroll left and right by sliding your hand over the screen much in the same way that smart phones operate.

Some of the more interesting changes include the ability to log in with gestures, a portable workspace existing out on the "Cloud", a thumbs keyboard for smart phones, a 16:9 aspect ratio for the newer screen resolutions, the ability to buy one app and use it on all of your devices and a version of Internet Explorer 9 called the "Metro" version. Windows 8 now allows you to use a Windows Live ID to login directly to your Windows 8 device and connect to Windows cloud solutions such as SkyDrive. This feature could be very convenient because it essentially provides you with a roaming profile. Apps and tiles will follow you from your tablet, to your desktop, to your Windows phone! Windows 8 manages apps and applications by putting them to "sleep" which frees up a lot of RAM for other purposes. The search feature in Windows 8 has the capability of searching " everything" which means that it could search for files on your hard drive, help on the Internet, your contacts, the registry, or potentially any other database of information stored on your computer.

There is a legacy desktop as a part of the Windows 8 operating system. It still has the taskbar, but it doesn't have the start button. There are still a lot of legacy applications and when you work with one, Windows 8 switches you to the legacy desktop. Most if not all of the management utilities such as the command prompt, PowerShell, computer management, Microsoft management consoles, and the registry are still there. When you invoke any of these, Windows 8 takes you to the legacy desktop.

We spent two days learning begins and ends of all of these features of Windows 8. Many of the concepts and the interface have changed fairly significantly which will provide a lot of training opportunities. It will probably be somewhat challenging for a lot of users migrate to this new

interface. They will have to get used to the lack of a taskbar and start button and the challenges of switching from the Metro desktop to the legacy desktop and vice versa. The metro desktop should be tricky especially when users try to navigate to favorite applications, use "charms" and switch back and forth between application. Users who are familiar with Windows phones should find the migration to Windows 8 a bit easier.

On the last day we covered all the latest incantation of Microsoft office. Unfortunately we were not able to use it yet because it had not been released and our instructor only had screenshots to show us. This was not her fault, it was due to the fact that Microsoft has not released it for use yet. Office 15 will ask you to log in with your Windows live account when you start it which connects you to the heart of your profile associated with Microsoft Office. The menu system has changed to provide as much screen real estate as possible. This exists in view of the fact that people are using tablets and smartphones so they will need more screen real estate and less menu options on the screen. The idea behind this is to only provide something when it is needed. Therefore, there will be some learning curve on figuring out how to do common tasks because the menus will not be out there and obvious! Microsoft office is also supposed to support conversion to a PDF files. It also has a feature called resume reading which takes you to the point in a document where you were when the document was closed!

There are a lot of new features in this version of Office, it will be exciting to use them more useful features and challenging to figure out how to do.

The Working Connections conference was very beneficial to me in several ways. I was especially impressed with the Problem Based Learning session. I plan to actively use these lessons in all of my classes to get my students to work in teams and develop moderately complicated solutions. It has the potential of providing technical training along with critical thinking skills. The Windows 8 session was also very useful to me. I have been teaching Windows products for over 17 years and the migration to Windows 8 will be challenging and having an understanding of how to get around will make it much easier for me to work with the latest version. I will also be able to pass to my knowledge on to my colleagues and learn from this experience at the working connections IT conference.