Application 5: Increasing Access to Curriculum

Lance A. Webel

Cincinnati Hills Christian Academy

As fifth graders enter our middle school, there are many basic technological skills and competencies that they must obtain to better equip them for their middle school careers. I choose to cover one of the most basic, the names and functions of the parts of a computer, during the first quarter of the school. Doing this is essential, because this vocabulary and understanding is used throughout the curriculum for my course and other courses in the middle school.

First, I could provide multiple representations by presenting the information both through a multimedia presentation and also through a physical dissection. The multimedia presentation would be a simple PowerPoint that shows the familiar parts of the computer and their names using interesting animations. The PowerPoint would highlight the functions of each part, showing how they connect and interact. For the physical dissection, I would take an old computer apart in front of the class, allowing the students to see the "guts" of the machine and relate their memory of the PowerPoint with the physical example they are seeing in front of their eyes. These multiple representations would provide the students with a recognition network to help them learn as appropriately as possible.

Second, I could provide multiple means of expression by creating an interactive worksheet and organizing verbal group quizzes. The worksheet would show a graphic of the parts of the computer and allow students to fill in the names and/or functions of each computer part. Depending on the varying capabilities of the students, it could include a

word bank, have some answers filled in, or require the students to draw each part. For the verbal quizzes, I would arrange the students into small groups of four to five students each. After asking each group to quiz each other on the parts of the computer, I would then travel to each group and casually test their competency by verbally asking for the names and/or functions of each part of the computer. These multiple means of expression would provide the students with a strategic network to allow my students to express themselves as they are learning the course content.

Finally, I could provide multiple means of engagement by drawing a parallel with the human body and creating an interactive role-play. For the parallel, I would facilitate a conversation that compares each particular part of the computer with a corresponding part of the body. For example, the CPU is like a brain, the input devices are like the five senses, and RAM is like short-term memory. This conversation would allow students to connect previous knowledge from other courses and general life with the new course content. For the interactive role-play, many students would be given an assigned computer part then asked to "connect" like a computer would. I would then provide situations (i.e. "Someone moves the mouse", etc.) where the students would have to creatively demonstrate how the computer would function in response. For this activity, students would have to extend their understanding of the parallel with the human body and apply their previous learning about the course content. These multiple means of engagement would help to establish an affective network to help each student learn effectively.

Overall, it is essential for me to provide multiple representations for the recognition system and multiple means of expression and engagement. These strategies can help my students not only comprehend the subject matter but also generalize the learning to their everyday lives (Rose & Meyer, 2002).

Reference:

Rose, D. H., & Meyer, A. (2002). Using UDL to support every student's learning: Designing instruction to support recognition learning; Designing instruction to support strategic learning; & Designing instruction to support affective learning. *In Teaching Every Student in the Digital Age*. Retrieved January 29, 2007, from http://www.cast.org/teachingeverystudent/ideas/tes/chapter6.cfm.