

Westfield Public Schools

Office of Technology & Business Services

Technology Committee – Update

Technology

The use of digital tools can be an example of second order change in the learning process. When the instructor changes how he/she engage students and give them different tools to complete the desired task, the student often changes her/his behavior, which often leads to different outcomes.

A valuable tool for 21st Century learning is the integration of technology into the learning process. Over the past few years, we have completed upgrades in many of our schools, expanded Internet access, deployed new devices and secured educational software and programs to engage students in digital learning. During our walk-throughs of the schools, we've observed technology used in many different ways. Some teachers use the technology in place of what they had previously done (whiteboard/chalkboard/overhead), while others have used it to create new learning experiences for students (webquests, assessment, digital submission of work, creating videos). By studying the adoption of educational technology, Dr. Ruben Puentedura has developed the **SAMR** model as a way for educators to evaluate how they are incorporating technology into their instructional practice. The following is a summary of the **SAMR** model:

S-Substitution – This is the approach where the teacher uses the technology to perform the same tasks he/she did before having the technology. An example of this is the student going to the interactive whiteboard to write answers to the questions the teacher posted. This is the same as when the question was written on the chalkboard and the student went to the front of the room to write the answer. Other examples of this stage is when students word process their work rather than writing it by hand, or taking on-line assessments instead of the traditional paper and pencil tests.

A-Augmentation – This is when the teacher uses the technology as a more effective tool to perform common tasks such as typing instead of writing, using an Elmo or hovercam instead of the overhead projector. In this stage, staff is enhancing traditional classroom tasks, but has not yet crossed over to redefining instruction. An example of this is when the teacher uses the smartboard to print out the notes written on the board or uses a digital camera to take a picture of the classwork to give the students a copy. At the higher end of this stage the teacher is using a hovercam to record problem-solving in math or science and then posts the video of the classroom instruction on a web page to assist and support student's learning at home. The Writer Key program used in our secondary schools is a great example of this stage. Rather than turning in their writing, students submit their work to the teacher and he/she can embed feedback and recommendations directly into the student work, thus giving them the opportunity to revise and re-submit the assignment

M-Modification – This is when the teacher begins moving away from traditional direct instruction and is beginning to transform learning by more actively engaging students. An example of this is when the teacher or student uses a document camera or smartboard to zoom in on cells under a microscope and blows up the image for students to see more clearly. Another example is using hyperlinks in the materials to bring the students to on-line sites to see first-hand what the reading or learning is about. This is a great approach to support students in acquiring background knowledge on a topic. For example, when students are studying Dr. Martin Luther King and as they are reading or discussing his "I Have a Dream" speech, a hyperlink in the reading brings them to a video clip of him actually making the speech. Examples like this can be done either in a whole group on an interactive whiteboard, or individually on the student's iPad or computer. In this stage, the students are engaged by the technology to more directly interact with the learning.

R-Redefinition - This is when the teacher uses the technology for new tasks that were previously inconceivable. Examples of this are the flipped classroom and blended learning model. This allows the students to acquire the background knowledge and basics outside of school and use the time with the teacher to facilitate a deeper understanding and application of the content. Student work can be done in a digital format and posted to allow other to interact with the data or presentation. This often includes multi-media presentations that are shared outside the school walls to real life audiences. In this stage, the teacher is able to create new task for the students to engage in.

The **SAMR** model is a valuable tool to use in classroom walk-throughs to observe instruction and collect data on the use of technology. In the first two stages of this model the teacher using technology to perform the same tasks she/he has always done. In the later stages, second order change is occurring with the students being more engaged in using the technology to enhance learning outcomes.

