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Foundations I

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Theorists

Using instructional technology in the classroom is essential in changing the way educators view the learning process. Using technology can affect teaching and learning in many ways. Developments such as the Internet and Interactive software can expand classroom curriculum while also accommodating to individual student's style of learning. Instructional Methods are greatly affected by the use of technology. Teachers may now act as more of a guide or facilitator in the classroom. There are several theories behind these instructional methods. The theories of Project-Based Learning, Constructivism and Multiple Intelligences are conducive to using Instructional Technology in the classroom. These new methods of instruction bring about a new way of assessing students work and progress. Assessment now can become part of the learning process where students have input in what they are evaluated on.

The theory behind Project-Based Learning emerged from John Dewey's philosophy of "learning by doing." The Buck Institute for Education's Project Based Learning Handbook states that "doing projects is a long-standing tradition in American Education." Activities such as field trips, laboratory

investigations and interdisciplinary activities are early forms of the Project-Based Learning Theory. Early educational theories focused on behavioral models. Today's teaching methods have evolved to reflect changes in today's world. Learning is now viewed as a "social activity that takes place in the context of culture, community and past experiences." Students use their previous experience and knowledge to "explore, negotiate, interpret and create."

In Michael Grant's article, "Getting a Grip on Project-Based Learning: Theory, Cases and Recommendations," Project-Based Learning is described as "an instructional method centered on the learner and affords learner the opportunity for in-depth investigations of worthy topics." As students perform these in-depth investigations they create "personally meaningful artifacts." Some of these artifacts may include a multimedia project or oral presentation. Grant also states that students become, "active constructors of knowledge." Three popular examples of Project-Based Learning are WebQuests, Project-based Science or Disciplined Inquiry. All three of these types of learning have several similar characteristics when creating these types of activities. Teachers should introduce the activity, which should also include some form of motivation. Then ask a guiding question to engage the students. After which, the teacher should introduce the process in which the meaningful artifact will be produced. This process will foster higher level thinking skills including analysis, synthesis and/or evaluation. Teachers

should make a variety of resources readily available to students including textbooks, hypertext links and access to experts. Teachers should guide the students by providing project templates, brainstorming sheets and teacher-student conferences. Another common element to Project-Based Learning activities is collaborative learning peer groups. And finally, projects should end in some form of reflection to put closure on the project by an in-class discussion, journal writing or extension activities. In this type of learning the teacher and student take on new roles. When introducing Project-based Learning into the curriculum, remember that this type of lesson is a bit more time consuming than the more traditional forms of teaching. Teachers should proceed slowly with implementation. Students must adjust to working in groups and learn how to interact, share resources and manage conflicts within the group. Teachers should also establish multiple forms of performance assessment. Some of the types of assessment are typical constructivist assessment tools, such as portfolios and rubrics. While portfolios allow students to have input and feel that they are part of the process, rubrics establish the teacher's expectation and give a more objective assessment.

Project-based learning is rooted in constructivism and collaborative learning. The Constructivist Theory was developed by Jerome Bruner. Constructivists believe that learning is an active process where learners form new concepts based upon their previous knowledge. Constructivists can use

instructional method is which require hands-on learning. As children go through their various stages of intellectual development, they actively learn new skills and concepts using their prerequisite knowledge. Bruner states that students should be encouraged to discover new concepts on their own. When implementing this type of instructional method into the classroom, teachers should “engage in active dialog” with students. Teachers can act as a guide, translating new material into a language that students can relate to based upon their level of understanding. When learning, students can relate to “real world” activities by using a hands-on approach.

When using these two instructional methods, Project-Based Learning and Hands-On Constructivism, it is important to remember that each student has Multiple Intelligences. Howard Gardner, a professor and theorist from Harvard University, suggests that “there are a number of distance forms of intelligence that each individual possesses in varying degrees.” Gardner states that each person is born with seven different intelligences: linguistic, musical, logical-mathematical, spatial, body-kinesthetic, intrapersonal and interpersonal. And while traditional forms of teaching focus on the mathematic and linguistic intelligences, Gardner states that “all seven intelligences are needed to productively function in society.” Intelligences, such as spatial – the ability to “think in pictures” and intrapersonal – an understanding of one’s own emotions are often overlooked. In Anne Guignon’s article, “Multiple Intelligences: A Theory for

Everyone,” Guignon finds that having an awareness of multiple intelligences is beneficial to teachers in that they find additional ways of reaching more students in their class. The article lists several ways to adjust the curriculum to adapt to multiple intelligences. One way is by adjusting lesson design by asking student’s opinions on the best way to teach certain topics. Schools might also choose to have interdisciplinary units and incorporate multiple subjects in to one topic. Student projects and apprenticeships allow a student to gain knowledge of specific skills. This type of teaching and learning really focuses on looking at an individual student’s strengths and weaknesses. Based upon Gardner’s theory, teachers need to let go of some of the more traditional forms of assessment. Student portfolios, journals and independent projects are effective forms of assessment. In Eric Digest’s article on “Multiple Intelligences,” Amy Brualdi states that teacher’s can create “intelligence profiles” for each student. This profile, which describes how students learn, does not only help the teacher choose how they will present information, but it will also help the teacher properly assess a student’s progress.

Gardner states that “we should look at what (students) could do well, instead of what they could not do.” We, as teachers, should focus on what the student can do well and what they are potentially capable of doing. And, by using multiple methods of instruction, we can reach every student in a more effective manner.

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