Student Engagement and Learning with Technology
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In most of the cited literature, various learners fall under seven categories. In fact, they can be categorized under three broad headings: (a) Visual, (b) Auditory, and (c) Kinesthetic. Research suggests that in a class, the distribution of these types of learners is about 37%, 33%, and 30% respectively. Hence, traditional teaching is bound to miss more than half of the learners. A teacher can reach a larger population by using technology in a meaningful way. With proper use of technologies and careful design of a course, one can reach various types of learners. The following seven steps from "best practices" (Walvoord *et al.,* 1999) will assist the instructor in designing a technology-integrated course. **Step (1) Know what you expect your students to learn by the end of the semester**. Be specific in the course goals (use action verbs like *describe*, *analyze*, *create*, and *compare* in place of *know*, *understand*, *expose*...remember Bloom's taxonomy?). **Step (2) Make an exhaustive list of objectives to be covered during the semester and identify best teaching approaches**, e.g., lecture, class discussion, visual aids, case study, report-back session, worksheet, guest speaker, or reading assignment. **Step (3) Create an Assignment-Centered Course.** Create a course skeleton showing the major assessments that will both teach and assess the learning you want. Insert the assignments and assessments into the week that they are due. Review the validity and workload of the assignments and their relevance. **Step (4) Consider times and spaces for learning.** Move the first exposure of the material outside the classroom. Make it a part of students' graded assignments. It could be reading or watching a video-lecture. Ask them to bring the write-up to the class for discussion or better yet, use the discussion board on BlackBoard. **Step (5) Remember the strengths and weaknesses of technologies that you are planning to use.** Use collaborative writing tools (MS Word), presentation software (PowerPoint), synchronous/ asynchronous communications (e-mail, threaded discussions, instant messenger, NetMeeting), web-pages, Course Management System (BlackBoard), Interactive Course Software, Simulations, and the like in a meaningful way. Be sure you have chosen the right technology to achieve your objective. **Step (6) Sequence the learning and choose appropriate technology.** Use a written assignment sheet to identify the steps that lead to successful completion of the major assignment(s) and assessment(s). Explain clearly what needs to be done and with what technological tools. In addition, identify inherent limitations and possibilities of the chosen technology tools. Review the appropriateness of technology used for teaching in the light of enhanced student learning, and determine if it fits the philosophies, priorities and style of teaching. **Step (7) Implement, evaluate and think creatively.** Implement in small steps when possible and use technology to enhance

something you are already doing or something you could not have done without it. Know what impact you expect, and plan to evaluate the results accordingly. Think, what is your role as a teacher? How can your students learn better or how can you use times and spaces more effectively? Think about how you can use technology in a non-traditional way.

Use of technology becomes more effective when the above best practices are coupled with the principles as discussed in the article by Chickering and Gamson (2003), "Seven principles for good practices in undergraduate education," revised by The TLT group in 2006. Following is a summary of those principles for using technology in a classroom. **Principle (1) Good Practice Encourages Contacts Between Students and Faculty.** Frequent student-faculty contact in and out of class is the most important factor in student motivation and involvement – use e-mail, telephone, voice mail, online office hours and your personal web page. **Principle (2) Good Practice Develops Reciprocity and Cooperation Among Students**. "BlackBoard" can be used to assign group projects involving two or more students, threaded discussions, and peer editing of individual assignments before they are submitted in the final form. **Principle (3) Good Practice Uses Active Learning Techniques.** Students learn better when they discuss, write and relate with other topics and/or apply it to real-life situations – use a personal response system, online research, or publishers' supplied assessment tools. **Principle (4) Good Practice Gives Prompt Feedback About Students' Progress and Ability to Work.** "BlackBoard" can be used for conducting quick assessment before and after testing, and posting the solutions of test questions and grades of individual students or the class as a whole. **Principle (5) Good Practice Emphasizes Time on Task**. Online assignments, use of electronic book, online study material, and algorithmically generated online quizzes can save students' commute time. **Principle (6) Good Practice Communicates High Expectations.** Teachers cannot get more unless they demand more. Demand more and be specific about your expectations. With the use of technology, timely submission becomes important for an online assignment. Additionally, publishing the students' work on the web forces them to create authentic, presentable work. With the availability and access to a vast pool of resources on the internet, teachers can demand more from students. **Principle (7) Good Practice Respects Diverse Talents and Ways of Learning.** Students should be asked to choose from a menu of assignments based on their learning styles. By making a team responsible for a group project, they learn to accommodate others' learning styles.

Chickering, Arthur and Stephen C. Ehrmann. "Implementing the Seven Principles: Technology as Lever." *AAHE Bulletin* (October 1996): 3-6.

The Seven Principles of Good Practice: Using Technology to Improve Learning Outcomes. 3 March 2006. The TLT Group, 29 October 2006 <http://www.tltgroup.org/Seven/Home.htm>.

Walvoord, B. F., Laughner, T. C., & Barry, K. "Teaching Well Using Technology. Unpublished training materials" *John Kaneb Center for Teaching and Learning, University of Notre Dame*(1999)