

QM Lit Review Update
(As of March 3, 2008)

I. Course overview and introduction

- Aycock, Garnham, & Kaleta (2002) noted that students in hybrid courses need clear explanation and rationale about the format and relationship between the online and face-to-face components since the concept is new to them. Online and face-to-face dimensions of the course must be well integrated or there is a danger in running “two separate [disconnected] courses” (¶16).
- Welker & Berardino (2005) investigated faculty and students perceptions of blended learning. Faculty pointed out the importance of having the course “fully prepared at the beginning of the semester since building the course as the class progresses creates confusion for the students” (p. 47). Students need provided with clear rationale and explanation of the relationship between the face-to-face and online components because the terms “blended” [and “hybrid”] are used inconsistently.

II. Learning objectives (competencies)

- Aycock, Garnham, & Kaleta (2002) found that online learning modules are central to a hybrid course’s success, and the students’ work online must be relevant to the in-class activities.
- Mortera-Gutiérrez (2006) found that specific learning activities in blended learning courses must be connected to specific course content and that the objectives/outcomes must be well organize and “on time through the whole semester” (p. 334).
- Dalsgaard & Godsk (2007) studied responses from grad students to discover tips on transforming traditional lectures into “online constructivist-based problem-based activities/resources” for blended courses. They discovered students’ learning did not suffer when content from traditional classroom lectures was chunked and shortened to fit the online component of a blended course. They also found that providing a selection of online resources encouraged many graduate students to return to specific online resources to “work independently on problems” (p. 41).
- Gunawardena et al. (2006) suggested a new approach to instructional design model they called WisCom (Wisdom Communities) that “engage in the process of scholarly inquiry that supports individual and collective learning...in an online learning environment” (p. 217). Module design includes five steps: a learning challenge, initial exploration, resources, reflection, and preservation.

III. Assessment and measurement

- Gaytan & McEwen (2007) found the importance of providing a “wide variety of clearly explained assignments on a regular basis and providing meaningful and timely feedback to students regarding the quality of their work” (p. 117).
- Chaney’s et al. (2007) looked at evaluation of distance education courses and confirmed the importance of “clearly written, straightforward statement of course objectives”, as well as clear information on how grades will be determined and on the exam process (p. 157).

- Ice, Curtis, Phillips, & Wells (2007) looked at the impact of replacing text-based instructor feedback with audio-based instructor feedback. They found that audio feedback:
 - “was perceived to be more effective than text-based feedback for conveying nuance;
 - was associated with feelings of increased involvement and enhanced learning community interactions;
 - was associated with increased retention of content” (p.3). They found a significant relationship between application of content as result of audio feedback (3 times more likely than when text only feedback).
- Martens, Bastiaens, & Kirschner (2007) revealed some discrepancies between designers and students perceptions of learning tasks that had been designed based on constructivist design principles. The study indicated the importance of formative and summative student feedback in designing and improving authentic learning activities.
- Flowers and Cotton (2007) investigated the responses of graduate students assessing their own discussion board based on a rubric provided by the instructor. The researchers discovered that there “was an unexpected decrease in the quality of messages” (p. 93) following the self-assessment activity. They reported that “a single self-assessment experience may reduce the quantity and quality of dialogue” (p. 102).

IV. Resources and materials

- Pomales-García, C. & Lui, Y. (2006) looked at the impact of web module length on recall and other variables and found that participants simply did not complete long modules.
- Kay & Knaack (2007) evaluated learning that resulted from use of learning objects in the sciences (biology, chemistry, computer science, math, and physics). They found that students benefit if the selected learning object “has a well-organized layout, is interactive, visual representations are provided that make abstract concepts more concrete, instructions are clear and the theme is fun or motivating” (p. 24). While this study was done with secondary school students it provides information to be considered by higher education designers when selecting learning objects.
- Lynch & Dembo (2004) focused on five components of learner autonomy that are supported by the classroom-based learning and the distance education literature: intrinsic goal orientation (motivation), internet self-efficacy, time management skills, study environment management skills; learning assistance management skills (help seeking) (p. 6). They summarized that, “Depending upon the target clientele, text material may be ‘written down’ to a lower grade level, or greater reliance may be placed upon video and/or graphic presentation” (p. 11).

V. Learner engagement

- McClure (2006) studied graduate students’ perceptions of learning in a hybrid course and found that the online portions must have “meaningful activities” (¶1).
- Dennen & Wieland (2007) pointed out that since that “the mere act of posting messages does not inherently result in learning” (p. 282) instructors should design in “anchored” discussion questions to encourage deeper levels of interaction.

- Brooks & Jeong (2006) found that in a graduate environment “prestructured discussion threads can increase the frequency of argument-challenge exchanges needed to initiate critical discourse” (p. 371).
- Peters (2007) wrote of the challenges of engaging the more digitally skilled learners (“m-learners” or mobile learners). Interactivity and relevance were seen as key considerations when designing courses for the digitally connected learner.
- Chang (2006) found in her dissertation study of undergraduate and graduate students that email was the favorite interactive tools and should be considered as part of the overall design of an online course.
- Mein (2005) looked at redundancy and cueing (text, audio, and visual) in relationship to learning from text and diagrams. No significant difference in student preference was noted, but there was some indication of the effectiveness of audio cueing since there were some high scores on performance tests on those materials with audio text cues.
- Hawkes (2006) looked at critical reflection as related to dialogue in face-to-face and online learning environments and found that asynchronous online environment provided significantly more reflective learning. He found that while there is much more interaction in face-to-face dialogue, “computer-mediated reflection is generated by the inclusion of ideas and theories outside” the participants experience (p. 241).
- Hummel (2006) conducted an explorative study of a design model (6P/FB-model) to assist designers make decisions when designing feedback. Six phases of decision-making were identified: What is the function of the feedback? What aspects of the activity will be the focus of the feedback? In what forms will the feedback be provided? What course of action will be addressed in the feedback? What are the guidelines for providing feedback? Does the feedback allow for final questions?
- McClure’s 2006 dissertation looked at hybrid instruction in higher education by interviewing graduate students in a hybrid course. Participants perceived learning to be tied to interaction (student-to-student and student-to-faculty) and meaningful online component activities.
- Rovai & Jordan (2004) investigated the sense of community felt by 68 graduate students enrolled in a traditional, a fully online, and a hybrid course. They found that students in the hybrid course felt a stronger sense of community than students in the other two learning formats.
- Richardson & Newby (2006) looked at the strategies and motivations (deep, surface, or achieving) that graduate students use in their online courses. They suggested that while students are motivated if learning can be connected to existed knowledge and experience that motivation can be further increase by inclusion of resources that allow students to become acquainted with the new skills and learning strategies.
- Liao (2006) found that learner-instructor and learner-interface positively impacted the intrinsic motivation and psychological comfort of a student, especially when the student connects skills and challenge. Learner-learner interaction was not a motivator or psychological comfort.

- Doering (2006) described Adventure Learning within a hybrid course. Adventure Learning is a design framework “grounded in authentic problem-solving; collaboration and interaction between students, experts, peers, and content using online delivery” (p. 211). This was applied in a K-12 environment, but has potential higher education application.

VI. Course technology

- Kuyath & Winter (2006) considered the connection between social presence and the increasingly social/interactive technologies. They found that “young adults prefer IM over email as a communication tool, but prefer the phone over IM” (p. 67). Implication might be drawn for including audio and video for digitally immersed learners.
- Beldarrain (2006) explored emerging technologies, such as social software (wikis, blogs) and podcasts in light of theory and possible benefits to distance education and suggested that these “may be more effective at delivering instructional strategies that support knowledge construction... social software are emerging technologies that foster the sense of connectedness between members of a group” (p. 146, 150).
- Bong & Zhang (2006) outlined the R2D2 – read, reflect, display, and do - method for designing and delivering distance education courses in light of generation X and Y students who are motivated and learn with more interactivity, visualization, collaboration, captivation and technology (p. 251). [Generation Y is referred to elsewhere as Millennials. Students born between 1980 and 1995.]
- Birbaum (2005) found that millennial generation students had greater recall and recognition when content was presented via computer visual presentation (such as a slideshow) rather than other visual learning environments or traditional lecture formats.
- Green & McNeese (2007) reviewed the literature on educational use of digital games and described the characteristics of high quality digital games from work done by Baranich & Currie (2004), Klaila (2001), and Gee (2003). Educational digital games
 - Should include:
 - Elements of suspense, competition, drama, and/or cooperation and the use or acquisition of knowledge in a defined subject area and use intellectual skills that apply to specific course content;
 - Clear learning goals and objectives;
 - Clear rules so students know how to play;
 - Interactive feedback;
 - Should be
 - Interactive and nonlinear;
 - Focused on learning rather than on winning or losing. [Students should never be penalized to the point of being excluded from the game, and ‘winner’ should be teams, not individuals];
 - Encouraging of exploration through rewards. [Players choose to assume the ‘protagonist; character or the ‘antagonist’ character to experience both perspectives.];

- Challenging with obstacles woven into a strong learning-related adventure develop higher order thinking skills
- Encouraging of creativity more than one correct answer or way of doing something. (p. 11)
- Green & McNeese summarized that digital games “promote student learning through exploration, interactivity, trial and error, and repetition in such a way that students got so lost in the fun, that they don’t realize they are learning at the same time” (pp. 5-6).
- Aycock, Garnham, & Kaleta (2002) considered the appropriate use of technology when designing a hybrid course. They concluded that “ a 50-minute lecture online were too long...break content into less than ten minute streaming video clips and intersperse within student-centered problem-solving activities” (§13 & 14).
- Slabicki (2007) found in his dissertation study that “when used in an appropriate context, stimulators provided the equivalent learning environment to that of real hardware” (§3).

VII. Learner support

- Chaney et al. (2007) conducted a literature review to identify quality indicators for student evaluations. They confirmed the importance of students being provided with clear information and orientation to the technology to be used in the course and of students being provided with access to technical support.

VIII. Accessibility

- Prensky (2001) calls attention to “*discontinuity*” [emphasis in original] (§ 2) occurring when “Digital Immigrant instructors, who speak an outdated language (that of the pre-digital age), are struggling to teach a population that speaks an entirely new language” (§ 9). He suggested that designers/instructors who did not grow up in the digital world [immigrants] engage some of their “native speakers” (§ 5) to use digital native methodologies.
- Long, Vignare, Rappold, & Mallory (2007) found “deaf and hard-of-hearing students reported that both the quality and quantity of their interactions with the professor and other students was greatly improved by the inclusion of an online component. ESL and hearing students were also positive about the blended experience” (p. 1).
- Keeler & Horney (2007) considered whether online course designs are meeting special needs. They cited work done by Edmonds (2004) and Burgstather (2004) who pointed out that “many designers believe erroneously that assistive technologies alone can remove all access barriers” (p. 61) and that it is the responsibility of course designers to intentionally create courses that address needs and styles of individuals, including those students with disabilities” (p. 62). While this study focused on secondary education, it reveals important design issues for adult learners as well. Keeler & Horney included the following implications for practice:
 1. Provide options for students including the ability to disengage pop-up windows and to select which supports they want to access
 2. Support all visual applications with text equivalents, provide equivalent alternatives for moving images, consider the “pervasiveness of graphics per pages;

3. Increase the availability of audio components (if appropriate), limit use of fact-face typing requirements, extend design principles to second-generation artifacts;
 4. When timing requirements exist, provide opportunities to extend or remove time limits; encourage connecting experienced support personnel who are knowledgeable about assistive technologies (p. 72-73).
- (The following links were compiled by Ed Bowen.)
 - Helpful links on universal design and accessibility on online course design:
 1. <http://tlt.its.psu.edu/suggestions/accessibility/check.html>
 2. <http://www.equity.psu.edu/ods/index.html>
 3. <http://www.webaim.org/articles/policies/postsec/#us>
 4. <http://webguide.ua.edu/resources.html#access>
 5. <http://www.educause.edu/ir/library/pdf/ers0706/rs/ERS0706w.pdf>
 6. <http://ncam.wgbh.org/> (Free RealPlayer/QuickTime/Flash/MP3 Captioning tools)
 7. <http://fae.cita.uiuc.edu/>
 8. http://dir.yahoo.com/Arts/Design_Arts/Graphic_Design/Web_Page_Design_and_Layout/Accessibility/
 9. <http://www.webaim.org/intro/#principles>
 10. <http://www.access-board.gov/sec508/guide/1194.22.htm>
 11. <http://www.w3.org/WAI/bcase/Overview>
 12. <http://www.oft.state.ny.us/policy/s04-001/index.htm>
 13. http://www.cita.uiuc.edu/collaborate/bestpractices/docs/nc_guidelines.pdf
 14. <http://www.cita.uiuc.edu/collaborate/bestpractices/docs/requirements.html>
 15. <http://www.stewart.cs.sdsu.edu/USenate/AppendixAXWorkplanX.doc>
 - Useful accessibility links for students and faculty:
 1. <http://www.publisherlookup.org/> (publishers' contact personnel for ordering electronic textbooks)
 2. <http://labs.google.com/accessible/> (URL for the Accessible Google home page, which returns only screen-reader-friendly pages)
 - Useful links to academic Web accessibility assistance and training:
 1. <http://www.cita.uiuc.edu>
 2. <http://www.webaim.org/intro/>
 3. Faculty development:
 - http://www.cew.wisc.edu/accessibility/examples/goodbad/goodbad_intro.htm
 - <http://www.eonline.org/content/view/31/>
 - http://www.udeducation.org/teach/course_outlines/courses_infused/tauke.asp
 4. Tech training courses:
 - <http://www.ittatc.org/training/webcourse/>