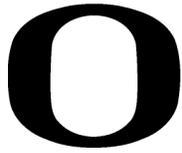


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An Overview of Faculty- Centered, Peer-Reviewed Online Course Development Models for Application within Accredited Institutions of Higher Education

CAPSTONE REPORT

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Abstract

The engagement of faculty in development, course design, and peer review is central to quality online instruction. Thirty refereed case studies of standards-driven online course development in higher education since 2004 are annotated and analyzed for common principles, procedures, or recommended practices. Discussion explores strategic planning for faculty and online administrators, including four phases of implementation, faculty support needs, barriers to engagement, and instructional and technology characteristics faculty must weigh carefully in specific pedagogical designs.

Keywords: online instruction; online course development models; courseware design; online pedagogy; higher education online academic programs; online faculty engagement

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Introduction to the Annotated Bibliography

Problem

The virtual environment offers potential to create highly nuanced learning experiences for students in online contexts (Cook & McDonald, 2008; Herrington & Kervin, 2007; Iiyoshi et al., 2005; Riedinger & Rosenberg, 2006; Turney et al., 2009). This situation has stimulated questions of practice for the information professional when called upon to assist higher education faculty and staff to effectively utilize online environments (Villar & Alegre, 2006; Villar & Alegre, 2008), as well as for instructional faculty with a desire to participate in design and delivery of quality coursework (Koehler & Mishra, 2009; Lonn & Teasley, 2009; Riedinger & Rosenberg, 2006; Turney et al., 2009).

A comprehensive research base exists in fields such as educational and cognitive psychology for predecessor instructional media developed prior to the Internet's current speed, capacity, and ubiquity (Clark & Mayer, 2003; Cook & McDonald, 2008; Reeves & Hedberg, 2003). These forms of media, such as electronic or digital (*e-learning*) mediums like the CD-ROM, software training programs, and film-based or computer-based curricula provide contained learning systems with science-based designs for pedagogy and presentation (Clark & Mayer, 2003; Cook & McDonald, 2008; Larreamendy-Joerns & Leinhardt, 2006). More than three decades of study conducted by researchers in public, government, and private agencies evaluates these types of multimedia learning, instructional technologies, and the science of designing the most effective visual and verbal contexts for long term memory, meaningful understanding, and mastery (Bennett, 1993; Clark & Mayer, 2003; Cook & McDonald, 2008; Larreamendy-Joerns & Leinhardt, 2006; Scalise & Gifford, 2006).

A distinct field of practice concerning online instruction has developed within the larger context of accredited higher education, and a similar best practice literature devoted to the study of online pedagogy has begun to emerge (King & Griggs, 2006; Larreamendy-Joerns & Leinhardt, 2006; Shelton, 2010; Tallent-Runnels et al., 2006). Over the last two decades, this literature has captured both promises and constraints first identified by early researchers and practitioners in e-learning (Curran, 2004; Larreamendy-Joerns & Leinhardt, 2006; Tallent-Runnels et al., 2006). Current study of online pedagogy focuses on the need for higher education standards of practice, quality assurance oversight, and principles to guide program administrators and faculty in developing and designing online coursework (Hartman et al., 2007; Lewis et al., 2011; McFarlane, 2011; Olson & Shershneva, 2004; Seok 2007; Shelton, 2010).

Purpose

The purpose of this scholarly annotated bibliography is to provide an overview of faculty-centered, peer reviewed online higher education course development models (Moore, 2005; Quality Matters, 2011; Seok, 2007; Shelton, 2010). In online teaching and learning contexts, a course development model may reflect a systems approach to structuring the production of teaching courseware and implementation processes by targeting specific learning objectives and aligning them with both learning and interactive media strategies, utilizing a range of expertise (Hartman et al., 2007; Hixon, 2008; Shelton, 2010). Accredited (and non-accredited) institutions may purchase courseware; may use teams of program faculty and instructional designers to develop courses; or individual faculty may incorporate varying strategies and online sources into existing curriculum (Lowenthal et al., 2009); these methods may or may not follow guidelines or standards recommended by state, regional, and nonprofit

online higher education quality oversight agencies (Hartman et al., 2007; Lewis et al., 2011; Olson & Shershneva, 2004; Seok 2007; Shelton, 2010).

The focus for this bibliography is on the selection of peer-reviewed literature that presents online course development models including processes and standards measures as prescribed by membership organizations or other peer-governed oversight (Hartman et al., 2007; Lewis et al., 2011; Moore, 2005; Olson & Shershneva, 2004; Quality Matters, 2011; Seok 2007; Shelton, 2010). The specific goal is to identify literature that examines online course development models that incorporate at least one of the following three key aspects: (a) standards-driven faculty development for online instruction (Aggarwal et al., 2005; Alvarez, 2009; Friel et al., 2009; Graham & Thomas, 2011; Hartman et al., 2007; Schrum et al., 2005; Villar & Alegre, 2006; Villar & Alegre, 2008); (b) faculty perception of the fit between a standards-driven online course model for instruction and the pedagogy or curriculum they utilize (Derntl & Motschnig-Pitrik, 2005; Dodor & Sira, 2010; Goode, 2010; Herrington & Kervin, 2007; Im & Lee, 2004; Koehler & Mishra, 2009; Turney et al., 2009); and (c) effects of uniform online delivery on quality (DeNeui, & Dodge, 2006; Hartman et al., 2007; Larreamendy-Joerns & Leinhardt, 2006; Lewis et al., 2011; Olson & Shershneva, 2004; Riedinger & Rosenberg, 2006).

The assumption is that an annotated bibliography of peer-reviewed literature providing an overview of online higher education course development quality standards and processes may identify key principles for faculty personnel preparation necessary to support effective, standards-driven online course development. Embedded within this assumption is the notion that a standards-driven model provides a framework for quality rather than similarity (Lewis et al.,

2011; Olson & Shershneva, 2004; Seok, 2007; Shelton, 2010); quality standards may be shown to support the intellectual richness that is the promise of academic freedom in higher education (Lewis et al., 2011; Lam & McNaught, 2006; Olson & Shershneva, 2004; Shelton, 2010).

Audience

Key audiences for this annotated bibliography are stakeholders in the larger online instructional design process: faculty, officers of information and instructional technology, and academic program administrators working in higher education professional schools of education who design faculty training programs and select online course development models such as the Sloan Consortium Five Pillars, or Quality Matters Rubric (Lewis et al., 2011; Olson & Shershneva, 2004; Seok, 2007; Shelton, 2010). The intent is to address the concerns of faculty and administrators regarding possible unintended effects of uniform delivery of standards-driven instruction (DeNeui & Dodge, 2006; Larreamendy-Joerns & Leinhardt, 2006; Riedinger & Rosenberg, 2006). Common issues of concern include (a) compatibility of specific pedagogies with computer-based instruction (Chick & Hassel, 2009; Goode, 2010; Green et al., 2010; Schneider, 2010; Tallent-Runnels et al., 2006); (b) potential impact on academic freedom (Graham & Thomas, 2011; Larreamendy-Joerns & Leinhardt, 2006; Riedinger & Rosenberg, 2006; Tallent-Runnels et al., 2006); (c) intellectual challenge of coursework (Lam & McNaught, 2006; Larreamendy-Joerns & Leinhardt, 2006; Tallent-Runnels et al., 2006); and (d) competitive difference among institutions (McFarlane, 2011).

Significance

Quality and rigor in academic instruction are highly valued by these audiences (Villar & Alegre, 2008). Though disciplinary research can produce variable views of best implementation to fulfill some standard practices in higher education (Ally, 2004; Reeves & Hedberg, 2003), established quality standards and research-based practices are unique within the context of online pedagogy due to the juncture of several aspects (Cook & McDonald, 2008; Larreamendy-Joerns & Leinhardt, 2006). Learning outcomes in the online environment can be shown to be influenced by extraneous variables (Clark & Mayer, 2003; Reeves & Hedberg, 2003), such as (a) the skill of the individual faculty member in the applied use of technology; (b) an instructional model and approach to pedagogy appropriate to the context, tool, or technology used; and (c) audience or learner comfort, motivation, persistence, and orientation to learning in the online context (Alvarez, 2009; Cook & McDonald, 2008; Georgina & Olson, 2007; Larreamendy-Joerns & Leinhardt, 2006; Villar & Olegre, 2006;). Thus, a number of researchers have determined that standards and best practices developed uniquely to online learning contexts are paramount to the development of quality online higher education programs (Hartman et al., 2007; Larreamendy-Joerns & Leinhardt, 2006; Lewis & Baker, 2011; McFarlane, 2011; Olson & Shershneva, 2004; Shelton, 2010; Tallent-Runnels et al., 2006; Villar & Olegre, 2006).

In addition, institutions of higher education operate within a competitive marketplace of ideas (McFarlane, 2011). Online books, video courses for purchase, and training programs for private sector professional or vocational training are available from a myriad of sources, placing accredited institutions of higher education as just one option within a “global educational community” (Hartman et al., 2007; McFarlane, 2011). As noted by McFarlane (2011),

accredited institutions seek to develop online course models with planned learning outcomes for students that are distinctive from non-academic online training opportunities.

Research Questions

Main question. Why should an accredited institution of higher education apply a standards-driven model to online course development?

Sub-questions. Sub-questions identify both recommended guidelines in the literature and common concerns identified by faculty and administrators in relation to adopting online course development models.

- What are the key principles recommended in peer reviewed literature in support of effective, standards-driven online course development (Lewis et al., 2011; Moore, 2005; Olson & Shershevna, 2004; Quality Matters, 2011; Seok, 2007; Shelton, 2010)?
- Which standards-driven models are most often implemented in accredited institutions of higher education, as reported in the selected literature (Lewis et al., 2011; Olson & Shershevna, 2004; Seok, 2007; Shelton, 2011)?
- What types of faculty preparation and training in online course delivery have reported beneficial effects on course or program quality (Friel et al., 2009; Graham & Thomas, 2011; Hartman et al., 2007; Hixon, 2008; Moore, 2005; Quality Matters, 2011; Villar & Alegre, 2006; Villar & Alegre, 2008)?
- How can an accredited program or institution address course development for specific pedagogies (Goode, 2010; Graham & Thomas, 2011; Larreamendy, Joerns & Leinhardt, 2006; Tallent-Runnels et al.)?

Delimitations

Literature source type. In initial search, journal and publications offering electronic text records are emphasized, but Inter-Library Loan (ILL), Summit, Orbis Cascade Alliance, and WorldCat materials are accessed for high incidence book references. Literature resources include peer reviewed literature from databases, indexes, and e-collections sources with high incidence of peer reviewed journals such as UO indexes, databases, and journals; *Academic Search Premier*; *EBSCO Host*; *Science Direct*; *Project Muse*; and *JSTOR*. Exceptions to this criterion include the published reports of the quality standards organizations devoted to quality assurance in online pedagogy in higher education, in particular *Sloan Consortium* reports, surveys, and studies; and *Quality Matters* reports, surveys, and studies.

Search engines. Because of the difficulty in ascertaining peer review status of some e-journals, general search engines are avoided in the search for quality assurance organization reports, other than *Google* and *Google Scholar*; the primary focus is on academic journals, indexes and databases. Indexes of open access e-journals are accessed for specific papers, topics, or authors as highlighted in academic resources.

Topic scope. Within the larger set of possible related online pedagogy topics in higher education, this annotated bibliography does not consider intellectual property concerns of faculty in online learning; licensing or copyright constraints for programmed curriculum or processes either for personnel preparation or for instruction; at-a-distance concepts related to specific culture, international, or language differences; the history of the development of distance education from correspondence courses through the present; or online pedagogy directed to elementary or secondary level instruction. This annotated bibliography focuses on the Internet as

a delivery mechanism and context for instruction in higher education, with a particular focus on literature examining faculty preparation for standards-driven quality online course development (Graham & Thomas, 2011; Lewis et al., 2011; Olson & Shershevna, 2004), or concerns reported by faculty and administrators regarding adoption of such methods (Graham & Thomas, 2011; Larreamendy Joerns & Leinhardt, 2006; Tallent-Runnels et al., 2006).

Time frame. Focus for literature selection is on identification of faculty-centered, standards-driven online course development models for use within accredited institutions of higher education. Publication dates span a broad time period of 2001 to 2011; this time frame defines the primary body of research addressing online pedagogy specific to higher education (King & Griggs, 2006; Shelton, 2010; Tallent-Runnels et al., 2006). Earlier studies deal primarily with predecessor media for e-learning, and contexts such as military or private sector task or process training (Clark & Mayer, 2003). Quality standards-governing bodies and organizations devoted to dissemination and training for higher education pedagogy online emerge as sources for published reports in early 2000s (Merisotis & Phipps, 2000; Moore, 2005; Quality Matters, 2011), and national studies of effectiveness begin to accumulate between 2003–2006 (Allen & Seaman, 2003, 2006, 2008). Additionally, because of rapidly growing availability and capacity, an emphasis on the most recent studies locates information about the effect of innovation on features unique to web based instruction online (Shelton, 2010). As numbers of accredited higher education institutions pioneer programs either fully online or hybrid in design, the nature of online instruction has not only matured, but technologies have created wider instructional possibilities (Scalise & Gifford, 2006). New tools have increased the numbers of learning actions able to be effectively modeled in e-learning objects or online processes and the ways in which outcomes may be measured (Scalise & Gifford, 2006). These

advancing features of e-learning and the online context also recommend a very recent literature selection criterion.

Publications describing closely related topics. Recent time frame criterion for literature selection also presents a complicating dimension to delimitation, as the base for this research is fairly new and still developing. The most coherent available statements of case approaches to applied standards are from synthesis (Moore, 2010), literature review, or model description, rather than the evidence-based case study literature this annotated bibliography has given first focus. Similarly, in the category of faculty development or specific pedagogical approaches in online contexts, many more formally controlled studies explore closely related topics, such as faculty acceptance of online teaching roles; competencies for faculty teaching online defined; support systems of the institution; and senior faculty motivation to participate in online teaching—yet, these aspects are outside consideration for annotation. Given the availability of case studies in the related topics, one might predict that greater efforts to collect and synthesize outcomes data from institutions utilizing a systems approach to applying standards for online program development is on the horizon (Shelton, 2010).

Publication dates outside the selection timeframe. Selected references about instructional design, e-learning design, cognitive, or metacognitive processes related to visual, aural, or multimedia instruction modes are included from the 1990s to capture seminal work that develops a focused context in e-learning instructional design, cognitive, and educational psychology (Bennett, 1993; Clark & Mayer, 2003; Reeves & Hedberg, 2003). Selected publications treating (a) faculty training and development processes in higher education or (b) empirical studies of teaching and learning best practice also largely precede the delimiting

timeframe, but are included as the research base for current literature dedicated to online pedagogy (Cook & McDonald, 2008).

Proprietary research and recency. Due to the emergence of an accelerated cycle of research and development for software applications and electronic tools that simultaneously models, tests, evaluates, and markets proprietary teaching, learning, and assessment products prior to release for publication in academic journals (Scalise, 2011), effectiveness studies for online instructional models or tools of the latest period may be unavailable to inform this bibliography (Scalise, 2011). The same cycle of acceleration for technology-driven research suggests consideration of selected e-journals and articles which may not carry the designation of peer-reviewed but meet the following selection criteria: (a) authors are affiliated faculty at accredited institutions of higher education; and (b) the article is included in a journal of professional practice related to the scope of this scholarly bibliography.

Reading and Organization Plan Preview

Screening and organization of collected literature precedes deep reading and evaluation of selected literature with a series of sorting tasks, including scanning the literature; conducting brief checks against initial quality and relevance criteria (see Evaluation Criteria); coding by type and content; and prioritizing by research question category. The sequence of screening and organizing tasks describes an iterative process to determine a ranking of selected literature by quality and relevance. This ranking determines if additional study is required prior to annotation.

Studies, papers, books, or book chapters satisfying initial selection criteria for topic key words, research questions, and publication date are printed and labeled by author and date. Hard copy of this literature is then subjected to the following screening tasks:

- Examined for substantive references (see Quality Guidelines Checklist),
- Coded by type of study,
- Coded by content and conceptual framework, and
- Grouped by research question in preparation for organization and presentation in the
Annotated Bibliography.

Definitions

In a rapidly changing field such as web-based education, definitions for commonly used terms may shift, or may accrue new connotation in a digital context. For example, *online learning* has already superseded its literal meaning, as "lineless" wireless and mobile technology has become commonplace (Parker, 2008). What endures is a context for practice in pedagogy that is based in computing and the Internet as a point of networked contact among instructors and learners. The consideration of definitions of terms describing theory from various schools of learning in light of the characteristic features of online instruction helps highlight instructional strategies, principles, and standards most appropriate for this context (Ally, 2004).

Accredited institution of higher education is defined as a post-secondary educational institution such as a university or college that has met a nationally recognized accrediting agency's criteria for quality (U.S. Department of Education, 2011). Evaluation criteria and peer evaluation are used to assess fulfillment of the quality standard, and accrediting agencies may be "private educational associations of regional or national scope" (U.S. Department of Education, 2011 website, http://www2.ed.gov/admins/finaid/accred/accreditation_pg2.html). According to the Council for Higher Education Accreditation (CHEA), accreditation provides a means for institutions to "self-regulate" academic quality through voluntary application of performance measures and standards of practice and outcomes which serve the public's interest for disclosure of educational quality (CHEA website, <http://www.chea.org>).

Asynchronous learning is defined as learning that is a result of "opportunities for learners and/or instructors to interact with each other via computer at different times" (Clark & Mayer, 2003, p. 309).

Collaborative learning is learning with others (Clark & Mayer, 2003). According to Clark and Mayer, the research of nearly half a century of teaching and learning outcomes in instruction with collaborative features establishes that in face-to-face contexts, learners who “study together often learn more” than learners who study independently (Clark & Mayer, 2003, p. 205). In e-learning contexts via the Internet, the term collaborative learning has come to represent instruction designed to (a) include opportunities for learner-colleagues to interact or communicate in group or team projects or targeted discussion “via e-mail, message boards, conferencing, or chats”, and (b) can be “used to convert solo learning into a social experience” (Clark & Mayer, 2004, pp. 195-218).

Constructivist pedagogy frames the act of instruction with a theory about knowledge and learning; it describes both “what knowing is and how one comes to know” (Fosnot, 1996, in Reeves & Hedberg, p. 12). An alternative to instructor-centered teaching that frames instruction as a transmission of standardized forms of knowledge from an expert teacher to the unknowing student (Reeves & Hedberg, p.12), constructivist pedagogy engages the learner in a process of examining “conflict between existing personal models of the world and discrepant new insight” (Fosnot, 1996, in Reeves & Hedberg, p. 12). Learners take active roles in inquiry and assume ownership of ideas, as they look for patterns in context, learn to create questions for inquiry, and self-regulate their participation in the process of discourse and reflection as a participant in a community of learners with an instructor as facilitator (Reeves & Hedberg, 2003).

“Contemporary interactive learning environments” are “designed to implement constructivist pedagogy based upon cognitive learning theories” (Wilson, 1996, in Reeves & Hedberg, p. 13), where learners “define and refine the nature of a problem they have identified, reconstruct their knowledge to solve that problem, and represent their solution in multimedia formats (Lehrer,

1993 in Reeves & Hedberg, p. 14).

Critical pedagogy approaches instruction by framing inquiry with “questions of power, control, and epistemology as social constructions with benefits to some and not to others” (Muffoletto, 1993, in Reeves & Hedberg, 2003, p. 33). Often described in juxtaposition to the paradigms of instruction based on empirical, positivist, quantitative, or analytical models, the *liberation pedagogy* of Paulo Friere (1970) and Ivan Illich (1970) influences critical design of teaching and learning that “exposes a hidden curriculum underlying instructional technology”, and considers use of technology in instruction as “not neutral nor leading inevitably to progress” (Hlynka & Yeaman, 1992, in Reeves & Hedberg, 2003, p. 33). According to Reeves and Hedberg, there is both challenge and merit in critical pedagogy which causes instructional designers to “question again and again the cultural, political, and gender assumptions underlying an instructional product or program” (Reeves & Hedberg, p. 34).

Distance education or education at-a-distance describes “any courses that are delivered to students who are not present in the same room” (Tallent-Runnels et al., 2006, p. 94). Reeves and Hedberg (2003) define distance education as “interactive, mediated learning” that utilizes asynchronous, unidirectional, or synchronous media to create communication among teachers and learners (p. 19). Such media has included correspondence courses with mailed print materials, radio and television broadcasts, videotape, audiographics, CD-ROM or computer-based software; today the web is considered the delivery system for distance learning (Reeves & Hedberg, p. 20-21; Tallent-Runnels et al., 2006, p. 94). Because of the increasing ubiquity, quality and speed of the web, while distance education was traditionally directed to serve students at-a-distance geographically from learning institutions, today distance education is not limited to remote learners (Reeves & Hedberg, p. 21).

Ecological models in pedagogy draw from numerous applications of concepts related to ecology or biospheres to the domain of teacher or instructor content knowledge (Zembylas, 2007). Pedagogy in family social services and counseling professions may reflect the ecological model of Uri Bronfenbrenner (1979, in Dodor et al., 2010), which places human development at the center of “a system composed of five socially organized subsystems that help support and guide human growth, ranging from the microsystems of immediate environment such as school and family, to the macrosystem, referring to institutional patterns of culture, such as the economy, customs, and bodies of knowledge” (Bronfenbrenner, 1998). While Zembylas (2007) fits the same Bronfenbrenner model of nested systems to “multiple aspects of emotional ecology that interact and influence teacher knowledge development” (Zembylas, p. 357), Dodor et al. (2010) suggest that the ecological model and the social network it depicts is well-aligned with online contexts for instruction and pedagogy in family human services, counseling, and community support systems teaching (Dodor et al., 2010, p. 2).

E-learning describes “any learning that is electronically mediated or facilitated by transactions software” (Zemsky & Massy, 2004 in Tallent-Runnels et al., 2006, p. 94). Clark and Mayer (2003) define e-learning as “instruction delivered on a computer by way of CD-ROM, Internet, or intranet” or other software applications, using content and instruction methods that are (a) digitized or stored in electronic form; (b) include content relevant to learning objectives; (c) use instructional methods such as examples and practice to help learning; (d) are supported by media elements such as words and pictures; or (e) build new knowledge and skills linked to learning goals (Clark & Mayer, 2003, p. 13). Larreamendy-Joerns and Linehardt (2006) describe e-learning as “receiving instruction over the public Internet, through private distance learning networks, or through an in-house intranet”, using methods including

“everything from online learning objects (i.e., digital entities that can be used to support learning) to intelligent tutoring systems (i.e., computer-based environments that provide students with adaptive guidance and feedback that resemble the personalized interaction between a tutor and a student” (Larreamendy-Joerns & Linehardt, 2006, p. 571).

Evidence-based methods for teaching and learning suggest an evaluation of practices according to study and analysis. Positivist, quantitative inquiry into effects of teaching and learning rely on definition, prediction, control, and explanation of phenomena through measurement and analysis in controlled study (Reeves & Hedberg, 2003, p. 30). This study produces *evidence* for evaluating the effectiveness of teaching and learning methods (Reeves & Hedberg, p. 30). Constructivist, qualitative evaluation also produces *evidence* from observation, particularly in collecting formative information about interactive learning, “including highly formalized observations such as usability tests” (Nielsen, 2000, in Reeves & Hedberg, p.32). The *evidence base* for a constructivist evaluation of effective practice in teaching includes multiple perspectives, and analysis considers the contributing effects of the several lenses of “culture, gender, context immersion, and other factors in the construction of ‘reality’ (Reeves & Hedberg, p.32).

Faculty training programs provide professional development for higher education faculty members who prepare and deliver online courses (Graham, 2011; Hartman et al., 2007; Villar & Alegre, 2008). Certification courses have been one model used in both private for-profit and public institutions to create accountability and quality standards “for best practice in alignment with the institution’s course delivery design” (Graham, 2011, p. 2). According to Hartman et al., “the more complete the shift from classroom to online activity, the greater will be the need for effective preparation” (Hartman et al., p. 163). Adding incentives, reward, or recognition to

faculty for engaging the persistent change and updates required of faculty skills in online pedagogy (Tallent-Runnels et al., 2006, p. 115) puts the emphasis on professional development being a task “done with faculty rather than to faculty” (Hartman et al., p. 163). Involving faculty in “a cooperative process” to deepen training objectives beyond mere computing technical skills, to include serious inquiry for reflective practitioners (Villar & Alegre, 2008, p. 171) not only transforms teaching pedagogy in the institution, it also elevates the importance of leadership in online learning as an activity central to the mission of higher education (Graham, 2011, p. 9; Hartman et al., p. 163.)

Hybrid program describes a course of study that “combines online components with traditional face-to-face components” for instruction (Tallent -Runnels et al., 2006, p. 94).

Instructional technologies include both a delivery system (media such as textbooks, projection systems and films, televised programming, or audio or visual formats in computer-mediated and digitized tools (Reeves & Hedberg, 2003, pp. 14-16) and a designed process for learning progress that “exploits the unique capabilities of the delivery” technology to create opportunities for learners to interact with the content through actions (Clark & Mayer, 2003, p. 21). Instructional technologies also facilitate cognitive processing with instructional methods that (a) use media elements such as text, graphics or sounds to convey lesson content (Clark & Mayer, 2003, p. 313); and (b) base design on the multimedia principle that “people learn more deeply from words and graphics, or a combination of sound with words and graphics than from words alone” (Clark & Mayer, 2003, p. 315).

Intellectual property relates to "intangible ubiquitous results of human creative endeavor" (Straus, 2008, p. 54), and "covers patents, copyright and related rights, trademarks, industrial designs, geographic indications, layout designs (topographies) of integrated circuits and

undisclosed information" (Straus, p. 54). The term holds meaning unique in academic research contexts following the U.S. government's Bayh–Dole Act (1980) and the Stevenson–Wydler Act (1980) which "shift[ed] the emphasis in federal policy from one permitting technology transfer to one requiring that agencies act rigorously in working with industry to commercialize federally funded research" (Straus, p. 54).

The term also invokes the tension created among competing interests relative to the research mission in higher education, which is “to generate new knowledge and to disseminate this knowledge widely in a timely manner” (Straus, p. 58), even under conditions where proprietary rights are contested for differently under varying circumstances by society; the creators, authors, or researchers; and the employer, the university (Strauss, p. 58). The term is of importance not only to primary research, but as well to educational software or courseware developers among university faculty who create potentially proprietary authored online courseware (Larreamendy-Joerns & Linehardt, 2006, p. 594). The concept work contributed by “courseware developed by faculty as a result of their personal interest in teaching and technology can become marketable products over which faculty may have, in the end, little or no control” (Larreamendy-Joerns & Linehardt, 2006, p. 592), and this can present a significant barrier for faculty participation in distributed or online course development unless institutional intervention “secure(s) real ownership...and ...pay(s) faculty commensurately for the immense amount of time it takes to produce these courses and run them” (Larreamendy-Joerns & Linehardt, 2006, p. 594).

Learner engagement is related to learner control, which allows the learner to “control the presentation of the lesson pacing, topics, and instructional elements, practice, or examples” (Clark & Mayer, 2003, p. 313). In online learning standards, *learner engagement* refers to

“active, hands-on, concrete experiences” or “learning by doing; by analogy, and assimilation, and where possible, learning outcomes should relate to real-life applications through simulation and application” (American Distance Education Consortium, 2005, in Seok, 2007, p. 396).

Online course development models describe structures for planning and managing the development of online courses, and may feature a collaborative, project management team-based approach representing an array of expertise roles required to design learning experience for the online context, such as a program director, media specialist, faculty member, and instructional designer (Hixon, 2008).

Online pedagogy is used in Internet-delivery of academic coursework using synchronous or asynchronous computer-based instruction (Tallent-Runnels et al., 2006, p. 93). As a specific pedagogy, online instruction includes teaching and learning framed with a theoretical base for interactive learning, whether instructivist or constructivist (Reeves & Hedberg, p. 12); and a research base for applied media design (Clark & Mayer, 2003, pp. 62-223; Reeves & Hedberg, p. 18).

Online contexts are “completely on the Internet” (Tallent-Runnels et al., 2006, p. 94), and refer to information and graphical frameworks for communication found within a “network of files on computers all over the world known as the World Wide Web or web (Reeves & Hedberg, 2003, p. 16). Online contexts are mediated by computer and browser interfaces, or constructed with software applications distributed by those interfaces (cite). Online contexts may include all information sources distributed via the Internet or the World Wide Web; online learning contexts may limit or guide access to information or learning content and media via bounded sets such as a learning management system (LMS) or web-distributed access to courseware or media designated for synchronous or asynchronous learning (Reeves & Hedberg,

pp. 16-17).

Quality assurance organizations in the context of online higher education are regional or national, private foundation or public governmental bodies that have “adopt[ed] statements of best practice” in online learning which include guidelines, principles, or benchmarks. (Hartman, Dziuban, & Moskal, 2007, pp. 160–161). Such organizations include but are not limited to: the Western Interstate Commission for Higher Education (WICHE); the American Distance Education Consortium (ADEC); the American Council on Education (ACE); the Institute for Higher Education Policy; the Michigan Virtual University; the Sloan Consortium; and Quality Matters (Hartman et al., p. 161; Moore, 2005; Quality Matters, 2011; Seok, 2007).

Socio-cultural-historical pedagogy “acknowledges the contexts of the learner and the ways in which the learner interacts with and learns from the people and artifacts in the community” (Green et al., 2010, p. 261). To create authentic interaction in a shared environment for knowledge creation, the practitioner “values students’ previous experiences, values, understandings, beliefs and insights”, while facilitating “opportunities in the online environment for students to communicate, reflect, share, and respond to and about their sociocultural histories” (Green et al., 2010, p. 261).

Standards-driven instruction in online contexts in higher education refers to online courses developed in accordance with standards or guidelines recommended by quality assurance organizations (Souk, 2007).

Standards in online instruction are “the results of concerted efforts to improve the quality of education found in distance education” (Seok, 2007, p. 387). According to Seok, standards support consistent, high quality distance education by reducing costs of content development and maintenance (p. 388) and differences between learning experiences of different regions and

institutions through regional institution collaboration and commissions devoted to evaluation and accreditation (p. 389).

Uniform delivery refers to course development models that follow “a common format for course structure” to “provide consistency for both instructors and students” (Knowles & Kalata, 2007, p. 5). Uniform delivery is not a proxy for quality, but standards applied uniformly can maintain the quality of content while gaining efficiencies in interoperability and re-use or collaboration among institutions (Seok, 2007). While faculty might have concerns about uniformity leading to “commodification” (Larreamendy-Joerns & Leinhardt, 2006, p. 592) of higher education, or perceive reduction of academic freedoms in the production model that supports uniform delivery (Graham & Thomas, 2011, abstract), perceptions of these limitations may be based on informal comparisons with face-to-face models of instruction that have not been empirically investigated for effective learning performance outcomes as controlled with variables of freedom or commodity production (Graham & Thomas, 2011; Larreamendy-Joerns & Leinhardt, 2006, p. 592).

Value proposition is the intangible set of benefits companies “offer to customers to satisfy their needs” which is rendered in the physical by “an *offering*, which can be a combination of products, services, information, and experiences” (Kotler & Keller, 2008, p. 13). In online, for-profit education, particularly as numbers of competitors increase, distinctions among online educational programs rely on a value proposition of unique or distinct worth to a consumer (McFarlane, 2011). In higher education online or in face-to-face settings, the unique value proposition of academic degree programs is the expertise of faculty members who design and deliver instruction.

Virtual environment or virtualization in the specific context of information technology refers to a combination of software with hardware platforms to extend functional hardware by simulation (IBM, 2007). In general, virtual environment refers to a simulation of human physical experience or interaction through the use of any digitized medium such as that displayed on computers, in film, or in hypermedia. Ellis (1994) defines virtual environment as “interactive, virtual image displays enhanced by special processing and by nonvisual display modalities, such as auditory and haptic, to convince users that they are immersed in a synthetic space” (Ellis, S.R.,1994). Virtual environments have moved from exclusive use in military and mechanical operations training into gaming and educational simulations (Kluge & Riley, 2008). Zhao (2009) and others note that the virtual technology users employ with the Internet has generated a virtual world that now operates as another type of reality, with economies, financial transactions, communities, relationships and social networks, wars, crimes, marketplaces, and education (Zhao, 2009, p. 116.) Zhao suggests that Second Life™ and other massive multiplayer ongoing role-playing games (MMORG) are just two among many evolving types of virtual social activity that evidence the fact that “the virtual world is as real as the physical world, psychologically, economically, politically, and socially” (Zhao, 2009, p. 128).

Web based instruction refers to teaching and learning online. According to Tim Berners Lee, the web is "a common information space in which we communicate by sharing information" through a network of communication points which are linked via the Internet and mediated or accessed with computers, browsers, software applications, and files (Berners-Lee, 1999). Web based education “uses the Internet and communication technologies, ranging from the Internet as a research tool to taking online classes” (Tallent-Runnels et al., 2006, p. 94). According to Lam and McNaught (2006, p.200), instruction delivered via the web has unique

characteristics as a tool for pedagogy, because the environment is (a) non-linear and based upon a complex adaptive or changing system that requires learners to navigate multiple pathways to information, and (b) difficult to evaluate in terms of learning outcomes, due to deliberate use of multiple sensory channels and a variety of learning modes employed in media-enhanced, interactive designs which generate path-dependent outcomes.

Research Parameters

Problems of practice explored in research may present statements of experience or narrative as a basis for theory (Creswell, 2009). Meaningful analysis of case study within a tightly scoped focus for standards-driven course and faculty development also identifies philosophies and strategies underpinning a researcher's methods of applying technology-enabled instruction, and offers insights for further study or replication.

The method of collecting, selecting, and organizing a body of literature that examines higher education cases of standards-driven course development, faculty training, or specific application of pedagogy in an online context requires various applications of the focus. The search scope is partially identified in key words and definitions; delimitations further identify the focus by ruling out related but unconsidered concepts or conditions of study. Strategies for selecting content sources and the application of quality evaluation criteria also serve to concentrate considered concepts and topics. The reading and organization plan distills these selection parameters and guides presentation of information in the Annotated Bibliography through grouping according to research questions identified with content areas of focus, creating a framework for analysis.

Search Report

The search process to identify literature for use in this scholarly annotated bibliography focuses on the following content areas: (a) peer reviewed examples of standards-driven, evidence-based models to support online course development (Lewis et al., 2011; Moore, 2005; Olson & Shershevna, 2004; Quality Matters, 2011; Seok, 2007; Shelton, 2010); (b) peer

reviewed discussions of effectiveness of online courses when using standards-driven, faculty-centered models for course design (Hixon, 2008; Shelton, 2010); (c) faculty satisfaction with effects of uniform online delivery on academic rigor, or disciplinary epistemic criteria for curriculum (Georgina & Olson, 2007; Green et al., 2010; Tallent-Runnels et al., 2006); and (c) case examples of successful adoption of faculty training initiatives embedded within peer reviewed, standards-driven online course development models (Graham & Thomas, 2011; Lewis et al., 2011; Moore, 2005; Olson & Shershevna, 2004; Quality Matters, 2011; Villar & Alegre, 2006; Villar & Alegre, 2008). The specific selection of literature is guided by a set of research questions (see Research Questions in the Introduction section of the document).

Key words. Key words are derived from peer reviewed journals in educational psychology, teaching, learning and assessment, instructional technology, computing in education, and higher education to represent the highly differentiated nature of online learning (Lowenthal et al., 2009), and from published reports from national projects and consortia devoted to disseminating quality standards and certification for online higher education (Allen & Seaman, 2008; King and Griggs, 2006; Merisotis & Phipps, 2000; Moore, 2005; Quality Matters, 2011; Sloan Consortium 2011; Shelton, 2010).

The two primary references consulted to derive key words are: (a) the Sloan Consortium "five pillars" of quality, described in Sloan reports, website, and newsletters as well as in research literature; and (b) the *Quality Matters Rubric*, developed following a Fund for the Improvement of Postsecondary Education (FIPSE) grant as a self-supporting program to assure online program quality. Key terms include:

- *quality, online instruction*
- *standards, online instruction*
- *learning effectiveness online*
- *online course development model*
- *faculty satisfaction, online delivery*
- *student learning outcomes, online course*
- *asynchronous learning*
- *collaborative learning*
- *learner engagement*
- *course technology*
- *courseware design*
- *learner support*
- *constraints of uniform delivery*
- *online pedagogy*
- *cognitive learning*
- *faculty training, development, online*
- *faculty learning objectives*
- *faculty online teaching objectives*
- *constructivist pedagogy, online*
- *critical pedagogy, online*
- *socio-cultural pedagogy, online*
- *competitive difference, online higher education*
- *web-based higher education*

- *guidelines, online higher education*
- *higher education online academic programs*

Search process. The dominant method of search is to identify the constituent areas of the topic and then align these with pertinent sources, key words and references as they appear in the research literature. The preliminary search strategy identifies (a) key terms to narrow the problem scope, and (b) authors and titles as exemplar literature providing a pool of highly relevant key authors and studies to search. For example, each author *R. Clark* and *R. Mayer*, and *Clark & Mayer* together are cited ubiquitously in e-learning instructional design; searching these author names and their respective papers, studies, or book titles produces not only items of their authorship, but papers citing these authors in closely related topics.

Linked catalogs and collections (such as Orbis Cascade, Summit Union Catalog, and WorldCat Index) show redundant returns, as member institutions return the same resource per individual permissions or rights to an electronic text. This is also true of Academic Search Premier and EBSCO Host, along with numerous science and educational publications; these are consulted secondarily as sources for electronic text.

Search prioritizes literature by the following sources: 1) the indexes, databases, and aggregators hosted or subscribed to by the University of Oregon to identify peer-reviewed journals, studies, articles relevant to terms; 2) UO Catalog for books relevant to terms; 3) additional regional and international catalogs and indexes for identified papers, studies, and books not within UO collections or subscriptions; 4) e-journals and open access publishing in peer reviewed publications, studies, and conference papers, searched by the refined key topics, terms, and key authors as identified in initial search in UO journals and indexes; 5) e-journals and open access faculty authored articles or studies referenced in peer-reviewed literature and

directly accessed via Open Directory, Directory of Open Access Scholarly Journals in Education, Google Scholar, or Google search engines.

Documentation. Search and retrieval data are collected through UO Library user account request records in the local catalog online; Inter-Library Loan; Orbis-Cascade Summit; and saved searches in UO articles, databases, and indexes. The browser collection tool Zotero™ provides a filing mechanism for organizing electronic text accessed through library and other online searches; items are grouped according to categories of search results; cited articles; and pending, and tagged by question or keyword within the categories. Results from Zotero, library account, and search engine or e-journal direct searches are collected in text files and organized by spreadsheet for compilation and reporting.

Evaluation Criteria

Critical appraisal guidelines (Atkins & Sampson, 2002) allow systematic review of research studies according to criteria developed to satisfy: 1) relevant requirements of the research questions; 2) general quality guidelines; and 3) a contextual analysis of alignment with a conceptual framework (Atkins & Sampson, 2002).

Content relevance. Literature in the topic area is considered relevant if it addresses standards or faculty training, and if it also addresses the conceptual frame of the research. Each selected item is evaluated in relation to two content questions and related sets of sub-questions, as presented in Tables 1 and 2.

Table 1

Does the reference address a standards-driven online course development model? If yes, . . .

<p>RQ 1. Which key principles are recommended in peer reviewed literature to support effective, standards-driven online course development ?</p>
<ul style="list-style-type: none"> • Discusses steps, processes, guidelines, principles, benchmarks or quality assessment criteria for course development • States a theoretical base for interactive design • Acknowledges variance for specific pedagogies • Notes need for faculty training methods • Lists or describes expertise types or personnel required to develop courses • May describe standards-implementation process by organization* <p style="text-align: center; margin-left: 40px;">*Also satisfies third subquestion, "By frequency in literature ... which standards-driven models have highest visibility?"</p>

Table 2

Does the reference address faculty training in online course development? If yes, . . .

<p>RQ 2. Which types of faculty training in online course development have positive effect on course or program quality?</p>
<ul style="list-style-type: none"> • Describes study of faculty in professional development process • Describes goals of training with analysis of case outcomes • Acknowledges variance by specific pedagogy or situates within discipline • Utilizes grounded institution standards or applied national standards • Distinguishes tech skills training vs. concept framework of course development • Discusses administrative support roles in faculty training for course development

Conceptual framework. A conceptual framework captures contextual variables, features, or constructs described in research literature (Atkins & Sampson, 2002). Related criteria examine the relationships among pedagogy, faculty training experiences, and standards driven course development in practice (*How does an accredited institution or program address influencing factors related to specific pedagogies?*).

Adapting three of five classification elements from Bronts et al. (as cited in Atkins & Sampson, 2002), this scholarly annotated bibliography selects literature that includes detail regarding *ways of thinking*, *ways of working*, and *ways of supporting* (Atkins & Sampson, 2002). In this bibliography, *ways of thinking* describes assumptions, worldview, or pedagogical viewpoints of the researcher or the faculty involved; *ways of working* defines tasks and subtasks in terms of methodology or approach taken to the problem under study; and *ways of supporting* notes barriers addressed, or institutional supports or constraints affecting outcomes reported.

Quality guidelines. A checklist of questions provides guidelines to assess the quality of literature selected for inclusion in the Annotated Bibliography and subject to annotation. The list is adapted from Greenhalgh (1997) in Atkins and Sampson (2002) (see Table 3).

Table 3

Quality Guidelines Questions. Adapted from Nine guidelines for evaluating qualitative papers (Greenhalgh, 1997, in Atkins & Sampson, 2002).

Quality Guidelines Questions
1. Did the paper describe an important problem of practice applied to faculty training or standards-driven online course development?
2. What type of study is described: qualitative, quantitative, mixed? Self study, single, or multi-subject?
3. Is the study framed with empirical or foundational literature?
4. Do references include foundational literature from fields of learning design, interactive learning or assessment, and online pedagogy?
5. Has the researcher's perspective been taken into account?
6. Is analysis applied to case reporting?
7. Are conclusions justified?
8. Are results credible and important for practitioners?
9. Are findings transferable to other settings?

Reading and Organization Plan

Reading of the literature selected for use in this annotated bibliography begins with references that provide the context for the study. Selected literature satisfying requirements of research questions are then evaluated and coded by content pertaining to each question, represented by the four content topics: (a) key recommended principles, steps or guidelines for implementing standards-driven course development for online instruction; (b) types of faculty preparation and training; (c) named models or organizational programs describing processes for standards-driven course development and faculty training; (d) methodology described for specific pedagogies. For each content area, literature is analyzed according to a set of content questions.

Key recommended principles, steps or guidelines. Peer reviewed literature that presents a series of steps, procedures, or criteria is examined with these questions:

- How do programs select a model?
- What type of implementation planning is represented?
- How is effectiveness of the model evaluated?

Types of faculty preparation and training. Literature describing methods for preparing faculty to assist in course development and online instruction is examined with these questions:

- Does recommended training emphasize tools and skills, pedagogy, or a balance of both?
- What is the length or duration of training support for faculty? Does the recommended training immerse faculty members as students in an online course or are different methods used, such as workshops or presentations?
- What methods are used to create conditions most conducive for faculty participation?

Named models or organizations providing standards-driven programs.

- Which studies describe a type of standards-driven process by name?

Methodology described for specific pedagogies. Philosophies of technology interact with philosophies of teaching for many specific pedagogical approaches (Ally, 2004). Literature discussing online course development or faculty training for selected specific pedagogy is examined within a conceptual framework that examines three aspects: (a) *ways of thinking* about conceptual frameworks for pedagogy, content, or characteristics of a technology as they interact; (b) *ways of working*—a methodology particularly suited to course development or faculty

training for specific pedagogies; *or* (c) *ways of supporting*—characteristics of a technology that support requirements of a specific pedagogy.

Once the analysis of the literature is completed, information is organized for presentation in the Annotated Bibliography section of this paper by research question. The intent is to seek patterns linking ideas across research questions, noting in particular interrelationships present that may be highlighted in the annotations. The goal is to design the overview of faculty-centered, peer reviewed online higher education course development models in a manner that best reveals the most commonly applied principles for initiating, applying, and supporting standards-driven course development and faculty training for online instruction.

For example, initiating a standards-driven process requires a number of related steps: (a) identifying criteria for selecting a model; (b) an institutional charge—along with other visible support for the initiative; and (c) faculty buy-in (Shelton & Saltsman, 2005). Of these, faculty buy-in appears to be the most critical aspect supporting the success of online instruction (Shelton & Saltsman, 2005, p. 59.) Examining case studies detailing faculty-centered development processes reveals commonalities among higher education institutions in practices intended to garner and retain the confidence and participation of faculty in online instruction (Green et al., 2009; Stewart et al., 2010). Some common processes of applying standards systematically to the development of both faculty online instructional competencies and coursework also have begun to emerge in the literature (Aggarwal et al., 2005; Hixon, 2008; Puzziferro & Shelton 2008). A synthesis of these in-common practices may identify for audiences instructional design strategies that go far beyond outlining procedures for mere distribution of course materials online, to serve sophisticated aims such as the requirements of a specific pedagogy or methodology of instruction

(Guthrie & McCracken, 2010; Green et al. 2010). In this manner, audiences may find that a quality assurance model can be used to support a wide range of key activities shown to infuse online instruction with engaging and effective methods, including the highly prized autonomy and academic freedom of faculty participants (Puzziferro & Shelton, 2008; Shelton & Saltsman, 2005; Villar & Alegre, 2008; Villar & Alegre, 2006; Xu & Morris, 2007)

Annotated Bibliography

The following Annotated Bibliography consists of summary descriptions of 30 references that examine faculty-centered, standards-driven online course development models. References are selected to help instructional faculty and online administrators address three closely related aspects of online course development: (a) recommended key principles, guidelines and standards in course development; (b) recommended approaches to faculty training and development of competencies for standards-driven online instruction; and (c) strategies for accommodating requirements of specific pedagogies in online contexts. References are arranged according to research questions corresponding to these three content areas.

Annotations include two elements: (a) a content summary; and (b) an assessment of credibility according to a set of criteria (see Evaluation Criteria, pages 29 – 32). The summaries reflect the ideas of the reference authors or their cited sources in addressing the significance of this study. The goal is to present how each reference addresses the conceptual framework to supply the gestalt of a body of in-common practices concerning applied standards in online course development.

When approaching the topic of online course development, there is a tendency for practitioners to disregard a substantive body of foundational educational and instructional design theory simply on the basis of favoring direct implementation with recent web-based tools such as learning management systems as a method to distribute instruction (Shelton & Saltsman, 2005). As a result, practitioners may overlook important learning design precepts. In contrast, by consulting standards guidelines for online course development, practitioners may be able to capture the foundational instructional design methodology that is necessary for successful online

learning in higher education. Accessing the research base supporting standards guidelines improves understanding of uses of the medium; reduces error for practitioners; and introduces foundational precepts of educational theory and learning design that shape and advance instructional practice (Kanuka, 2008; Shelton & Saltsman, 2005).

Which key principles are recommended in peer-reviewed literature to support effective, standards-driven online course development?

Aggarwal, A. K., Adlakha, V., & Mersha, T. (2005). Continuous improvement process in web based education at a public university. *e-Service Journal*, 4(2), 3-26. Retrieved from <http://muse.jhu.edu/journals/esj/summary/v004/4.2aggarwal.html>

Summary. University of Baltimore (UB) faculty authors Aggarwal et al.(2005) trace the influence of Total Quality Management (TQM) in case study of an online business program at an accredited school of business in a public university. Authors report a continuous improvement “Plan-Do-Study-Act (PDSA) cycle” is reflected in web based education at UB. The UB plan phase addresses first critical steps for high academic quality in an online program: (a) a customer orientation (assessing student ease of access, satisfaction); (b) senior management leadership and commitment (demonstrated with a business plan; marketing strategy; long term commitment to growth with phased investment; outsourced course management system [CMS]; and cultivation of faculty participation with incentives); (c) employee participation (teams of faculty and staff develop the product offering); (d) internal capability assessment, infrastructure development (outsourced CMS, peer review of course development and online pedagogy; information and communications technology baseline investments plus minimum student

requirements for hardware, bandwidth, and skills to participate; faculty readiness assessment and ongoing training on virtual group learning, course development and delivery, and ICT competency [outsourced]; (e) selecting the right product (WebMBA is 2 years, 16 courses, 4 10-week terms); and (f) identifying faculty champions (formal contracts developed with faculty include cash incentives for course development and royalties for re-use).

Do, Study, and Act phases describe continuous improvement activities guided by periodic self or student assessments to improve and standardize admissions, assessments, course delivery, and evaluation of new tools in teaching technology. Authors stress the importance of comprehensive planning prior to startup, with ongoing faculty training. UB results support a team-based approach that 1) includes professional staff with faculty to develop the long term product plan with administrators, and 2) maintains the team throughout phases to refine new implementations or maintain improvements in course development and delivery. Faculty is asked to accommodate enrollment growth to improve profitability over term; faculty members are able to address this increase in workload with contract incentives and team resource to distribute communication, assessment, and technical support loads.

Credibility. Published by Indiana University Press in an electronic journal presenting peer-reviewed research on the design, delivery, and impact of electronic services, the study presents a quality model for online course management that focuses on improving the student customer experience. Satisfying all quality and most evaluation criteria, the study presents a robust set of references on service design, production efficiency, and management aspects of online programs in a TQM framework, but lacks theoretical information design research. It is included as a business-focused approach to online delivery which compares well with many

process aspects of pedagogically-focused quality models; a weakness in premise is inherent in generalizing customer behavior to learning, but the study is useful for identifying processes that administrators frequently apply to learning outcomes as well as satisfaction and enrollment data.

Chao, I. T., Saj, T., & Hamilton, D. (2010). Using collaborative course development to achieve online course quality standards. *International Review of Research in Open and Distance Learning, 11*(3), 106-126. Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/912/1645>

Summary. Chao et al. (2010) present four cases of collaborative course development at a Canadian university to explore the relationships and roles of instructional designers with faculty in creating online coursework adhering to quality standards. Royal Roads University (RRU) is a growing international for-profit university with high number of online courses being developed or revised annually (n=600). Courses are developed through a centralized instructional technology center providing faculty subject matter experts with instructional design assistance to distribute workload and help ensure standards are applied. A checklist summarizing these institutional standards for quality is derived from RRU's university-wide standards for instructional design and framed with Sloan-C principles for quality. The faculty-instructional designer collaborative use of the checklist was monitored with pre-and post testing surveys and semi-structured interviews with faculty instructors and instructional designers.

Significant for this bibliography, the literature review framing the study locates the national reports most often cited as foundation for quality guidelines (Institute for Higher Education Policy's seven quality measures; Canadian Recommended E-learning Guidelines; Sloan Consortium's Five Pillars). Collaborative course development is identified as a Sloan-C pillar of quality (Moore, 2002). Outcomes focus on establishing rapport and communication between faculty and instructional designers, with acknowledgement of the labor intensive nature of early work in developing new courses. Satisfaction with guidelines as quality monitors varied

according to the experience level of the faculty member. New faculty members find them useful in the development process, while experienced instructors prefer to use them as a checklist as work stages are completed. Faculty satisfaction with collaborative team approaches is correlated with the early establishment of clear roles, facilitated in part by the guidelines which locate certain responsibilities with design or web team components. Guidelines allow a neutral point of focus for first discussion of roles and responsibilities. In cost-benefit analysis of elaborate collaboration, authors point out that “new courses may benefit from a highly collaborative process, more so than courses requiring less extensive development or redevelopment” (p. 118).

Credibility. Published in a refereed international e-journal review of research in online learning, the study is co-authored by the instructional design and faculty support team at Royal Roads University. The team consists of a faculty member and former associate dean and director of two online master’s programs at RRU. The study includes three survey instruments, and interprets subjective aspects of quality through review of faculty and design team perceptions of processes undertaken in four cases. Detailed description and supporting research cited satisfy all but one of the evaluation criteria for course development models, including unique discussion of the evolution of the role of the instructional designer but without noting the considerable research base for digital instructional design itself.

Hixon, E. (2008). Team-based online course development: A case study of collaboration models. *Online Journal of Distance Learning Administration*, 9(4). University of West Georgia: Distance Education Center. Retrieved from <http://www.westga.edu/~distance/ojdla/winter114/hixon114.html>

Summary. Hixon (2008) presents an analysis of a collaborative course development model through the lens of faculty training in an intensive 10-week cycle of building online course modules. Participating faculty apply to the “Jump Start” program to qualify for administrative and media support to develop a single course for online delivery in 67 days. Participating faculty receives \$5,000 for completing development of their online course in the program, using a cohort format that supports faculty and course development simultaneously through staff support for faculty from assessment and instructional designers, digital media and software or programming engineers, and librarians.

Hixon offers two administrative designs, one with segmented teams doing parallel development according to niche responsibility on the team; the second interdisciplinary design features more frequent whole-team meetings and input across the development cycle among all supporting the development, coordinated by the project manager/instructional designer. The “Jump Start” program study features three faculty examples of different team structures; examples reveal varying degrees of success with tasks and communications during a 67-day course development.

A chief obstacle in concurrent faculty-course development is management of faculty expectations prior to the onset of course development. In the study, one faculty thinks the four day “jump start” of intensive first module development is technology focused skills training;

with no concept of working with others to articulate a course design, she chooses to ignore the support team. Another participating faculty is exceedingly demanding of technical asset creation support, but wants full control of all pedagogical aspects, and thus bypasses instructional design staff to access the digital media experts without benefit of the knowledge and expertise of those who regularly pace courses for effective management of learning objectives online.

A second chief obstacle is maintaining effective communication among team members, particularly in instances where independent faculty see no benefit to declaring their process if they are not used to explicitly shared course models.

Recommendations include 1) early and refreshed clarification of roles and responsibilities, including the cohort development of a course in comparison with faculty-led development; 2) a designated project manager; 3) faculty prominently positioned in the development model with control of all instructional decisions; 4) frequent and inclusive communications.

Credibility. Hixon is a faculty member in educational psychology in the department of Teacher Preparation at Purdue University. Hixon's study is published in a peer reviewed university publication, the *Online Journal of Distance Learning Administration*. The study satisfies all but one of nine quality screening criteria and all six evaluation criteria for inclusion in this bibliography. The single weakness of the study is the lack of detail associated with the roles described for instructional designer-project managers as they are distinct from other media or information specialists, including specifically how they might interact with the subject matter expert or faculty instructor. The study highlights how faculty members, unfamiliar with course

development that is not solely their responsibility, can be confused with the nature of the instructional designer role, even in a highly scripted program such as “Jump Start”.

Lewis, K., Baker, R., & Britigan, D. (2011). Current practices and needs assessment of instructors in an online masters degree in education healthcare professionals: A first step to the development of quality standards. *Journal of Interactive Online Learning, 10* (1), 49-63. Retrieved from <http://www.ncolr.org/jiol/issues/>

Summary. Lewis et al. (2011) use quantitative and qualitative methods to examine instructional practices and student learning experiences in a fully online master's degree program serving medical professionals offered by the University of Cincinnati. The goal of the study is to explore a process of developing institutional standards for online teaching to support both instructor and student performance. The study considers: (a) the current course materials and pedagogy of faculty in the online program; (b) the benefits and drawbacks in utilizing Blackboard™ as an instructional tool; and (c) other aspects of instruction and quality assurance. Background for the study considers quality frameworks in the context of continuing education for medical professionals, including Quality Matters rubric; Sloan Consortium's five pillars of quality; and Chickering and Ehrmann's seven principles of effective education in technology based education (Chickering & Ehrmann, 1996, in Lewis et al., p. 50).

The study considers course syllabi, course materials, and roughly six months of data captured during 2007 through online surveys and semi-structured interviews with 29 students and ten instructors. Course management tools were rated as highly satisfactory for both instructors and students in spite of limitations in visual design and a lack of podcasting or voice communication for chat integration (the study was completed prior to the introduction of Elluminate Live in Blackboard). Text based materials including PowerPoint™ are the most highly used method of transmitting content in the program. Student feedback indicates a strong

desire to have more audio components added to these, via narration or video conferencing. Only 30 percent of instructors report clearing instructional materials for copyright.

Recommended next-steps include: (a) pursuing Quality Matters peer review and certification of course quality; (b) creating a template course that faculty can build upon; (c) providing an assessment tool derived from several sets of standards for self, peer, or supervisor assessment; (d) providing faculty development orientation and providing financial support for online teaching credentialing; and (e) cultivating a community of practice to encourage faculty to mentor quality assessments rather than dictate them.

Credibility. Authors are health education faculty members at two university-affiliated institutions: Lewis is Field Service Associate Professor of Pediatrics at the University of Cincinnati College of Medicine. Baker is currently Associate Director and Education Section Head of the Division of General and Community Pediatrics and project director of the Pediatric Primary Care Training program, Cincinnati College of Medicine. Britigan, a certified health education specialist, is faculty at Walden University, College of Health Sciences, Minneapolis. Published in a refereed journal of interdisciplinary research on online learning outcomes, the study satisfies all quality and all but two evaluation criteria for creating standards-driven course development. Limitations of the study include small sample size; lack of diverse course technology tools; no consideration of how the specific pedagogy shapes instructor expectations or the learning needs of students; and no discussion of other personnel required in design or development of courses.

Olson, C., & Shershneva, M. (2004). Setting quality for web-based continuing medical education. *Journal of Continuing Education in the Health Professions*, 24, 100-111.
doi: 10.1002/chp.1340240207

Summary. Olson and Shershneva (2004) apply five sets of standards described in distance education literature to web-based continuing medical education (CME). Sources for standards considered are: American Federation of Teachers; Distance Education and Training Council; Institute for Higher Education Policy; Alfred P. Sloan Foundation Consortium; and Western Cooperative for Educational Telecommunications. Authors observe that published standards are limited in that they represent outcomes of consensus processes rather than evidence-based research, and “none of the standards is based solely on educational research findings”... and they represent “a combination of established educational values, research findings, and practical knowledge and experience” (p. 103).

As noted by Olson and Shershneva, the standards as described note peer review processes, site-visit studies, and in one case, a three-year US Department of Education project consortium to develop accreditation online. Each of these methods potentially produces or considers criteria, evidence, and research findings, and in two of five cases, details were noted as “not provided” (Table 2, p. 104-105) regarding the process of synthesizing the set of standards, which does not obviate a research-based process. Thus, criticism of the five sets of standards as outcomes of consensus process is somewhat paradoxical—particularly in higher education, funded research, or accreditation proceedings, all of which regard evidence for methodology and outcomes reporting as foundational. A greater sample size of such institutions would suggest a rich study or product in analysis more than it suggests “compromise” (p. 106).

The authors present the following points (not widely represented in online education literature): (a) five of the most commonly applied standards are analyzed to draw out unique features of each for comparison, which provides helpful reference point for practitioners evaluating a course development standard to pursue; (b) authors recognize that combining the guidelines is an effective method of creating a methodology for specific pedagogy, as the individual standards are not comprehensive; (c) quality guidelines are not a cookbook or procedural recipe as they define no quantification for amounts or forms of intervention or pedagogy satisfying recommended guidelines, and therefore, are not a guarantee of quality; (d) CME providers should select standards aligned with CME purposes, such as “disseminating information or changing clinical practice” (p. 107); (e) in medical education as in other science-based curriculum, high quality, recent, evidence-based-information is the chief ingredient supporting the overall effectiveness in preparing continuing professional education, and authors found this aspect unaddressed in standards; and (f) the medical educator is the arbiter of the actual quality of educational delivery regardless of format, and institutions must apply similar oversight for course-to-curriculum fit and information currency as would be applied in campus-based coursework to assure information quality.

Credibility. Published in a peer-reviewed journal for health professionals, the authors are one head of research and development in an office of continuing medical education in a state public university and one research associate. Written in 2004, Olson and Shershneva’s article predates significant research of post intervention analyses, given that study of standards in supporting quality educational outcomes online settings has only begun to mature since the publication of this summary. The authors also do not cite the research base for instructional design that informs the standards and much of accepted educational “best practices”; for

disciplines outside educational psychology, assessment, or cognitive learning theory, this research base may not be easily apprehended in frameworks for quality guidelines (Shelton, 2010). The limitations of the paper in recency and theoretical interactive design research base notwithstanding, it satisfies four out of six evaluation criteria and eight of nine quality criteria, and is included as a strongly coherent statement of definition for five widely adopted sets of national standards for online education; it also balances critical appraisal with assessment criteria in favor of applying the standards for quality in a specific pedagogy.

Puzziferro, M., & Shelton, K. (2008). A model for developing high-quality online courses:

Integrating a systems approach with learning theory. *Journal of Asynchronous Learning Networks*, 12(3-4), 119-136. Retrieved from:
http://sloanconsortium.org/publications/jaln_main

Summary. Puzziferro and Shelton (2008) describe a systems and team-based online course development model implemented at Colorado State University–Global Campus. The Colorado State model is presented as a 14-week detailed work flow with recommended deadlines and project steps for four phases of course development and an ongoing course maintenance plan; roles and responsibilities in design and fabrication of course elements; and descriptions of team membership skill sets. Coherence, both for curriculum, and for the student, is an important aspect of standardized approaches to online delivery within the higher education context of sequencing and continuous student movement among program and degree requirements. Authors speculate that student engagement and retention online depends more heavily than in campus-based courses on familiar learning sequences experienced by repeat-users of course elements. Curricular integrity in high volume enrollment sections may also be more easily maintained in standardized online courses developed according to specifications, particularly in highly distributed courses (i.e., those taught by multiple adjunct instructors).

Pedagogy in the Colorado State online quality framework is keyed to “peer collaboration, synthesis, evaluation, and new knowledge construction” in formats of “simulation, student-created media, inquiry-based learning and peer-based evaluation” to encourage resilient retention and program completion as well as mastery skills in topic areas (p. 123). Creativity and academic freedom for faculty members is realized through their subject matter expertise. Faculty oversee pedagogical aspects in the model, with direction of all instructional decisions. In

addition, the “vision for quality” (p. 122) guides team members to support the subject matter by creating well organized learning units with explicit goals and objectives, and materials that foster engagement and interaction “with content, other students, and the instructor” (p. 122). Key for this bibliography is the observation that student content mastery does not necessarily positively correlate with student engagement over term (Kazu et al., 2005 in Puzziferro & Shelton, 2008).

Credibility. Puzziferro is currently president and provost of Rocky Mountain College of Art & Design. At the time of publication, she led online learning at Colorado State University Global Campus, and had previously served as associate director of IT at New York University. Shelton is the dean of online education at Dallas Baptist University, which offers 54 full programs online. Both have extensive administrative experience in higher education and significant number of publications and studies of online program administration. Published in the refereed *Asynchronous Journal of Learning Networks* published by Sloan Consortium, the model presented is framed with the Sloan-C Quality Matters program components augmented with Active Learning Mastery constructivist techniques in pedagogy.

Shattuck, K. (2007). Quality Matters™: Collaborative program planning at a state level. *Online Journal of Distance Learning Administration*, 10(3). Retrieved from <http://www.westga.edu/~distance/ojdla/fall103/shattuck103.htm>

Summary. Shattuck (2007) outlines the collaboration history among 19 community colleges and four-year institutions in Maryland and emergence of the Quality Matters™ Program. The program is framed as four developmental stages of collaborative relationship (Donaldson & Kozoll, 1999, in Shattuck), and provides a continuous improvement model for faculty development in online teaching described as a solution to “facilitate inter-institution cooperation and training for peer review of online courses” (p. 3). Shattuck presents the composition of project management teams and their contributions as well as the development of the rubric itself and its implementation progress from pilot project through FIPSE funding, dissemination, post-evaluation and evolution to a non-profit subscription service in 2006.

Originally presented as a “stand alone” compilation of best practices (p. 3), the standards for the development of faculty for online teaching matured to include a formative component with a continuous improvement frame of its own, to address the improvement of the review process as well as the improvement of course and faculty development. Important for this bibliography, this feature of embedded improvement to the process model is not typically visible in analyses of quality standards as though standards have been crafted independently from the process of pedagogy and simply disseminated. This may be true of some literature describing best practices, but is an inadequate description of the Quality Matters review standards. While the eight essential, necessary, or important standards for peer evaluation of courses were first distilled from eleven national standards by committees of practitioners; the refinement through

peer review in controlled applications must not be overlooked. “By the end of FIPSE funding, 103 courses had been reviewed and 709 peer reviewers had been trained in 158 institutions in 28 states” (p. 4). The post-implementation research phase is focused on validation of the essential standards related to student outcomes and effectiveness of team management of course development.

Credibility. Shattuck is director of research for Quality Matters™, and is associate adjunct faculty with Penn State World Campus Faculty Development Program. Shattuck is one of the founding MarylandOnline distance educators awarded a USDE Fund for the Development of Secondary Education (FIPSE) grant to create Quality Matters.

Published in the refereed *Journal of Distance Learning Administration*, the article satisfies most evaluation and all quality criteria addressing literature considering standards-driven online course development, with the caveat that this article is not a traditional self study but rather a recounting of process steps with detail for rubric and review elements. As presented, the widely shared need for collaborative program planning at one state level suggests it could be replicable at other campus levels, and subsequent growth and adoption of the QM rubric nationally has suggested this potential as well.

Shelton, K. (2010). A quality scorecard for the administration of online education programs: A delphi study. *Journal of Asynchronous Learning Networks*, 14(4), 36-62.

Summary. Shelton (2010)'s six round Delphi study examines the Institute for Higher Education Policy (IHEP) indicators of quality for online instruction (2000). The original 24 indicators are subjected to review by a panel of industry experts for currency, relevance, and comprehensiveness following a decade of advancement in technology and online pedagogy. The purpose of the study is to determine a value weighting or scorecard of indicators of quality for online program administrators. The study validates the original indicators of online best practices, updates language, and offers two new categories for indicators for a total of nine categories: "Institutional support, technology support, faculty support, course structure, course development and instructional design, teaching and learning, student support, social and student engagement, and evaluation and assessment" (p. 58).

Shelton observes that rubrics are now widely available for the measure of course material quality and course development processes. But quality indicators for entire programs are few (p. 37). Customer information, inter-institutional agreements, and strategic planning are among the justifications for a system of shared program indicators in online higher education. Therefore, Shelton's focus on the IHEP indicators is particularly insightful; these indicators are not only foundational for the early research of online pedagogy, they are widely regarded as a baseline of quality. A scorecard for program administration based on an updated form of nationally accepted set of indicators offers administrators, faculty, and support staff a reliable set of guidelines for guiding course and faculty development.

The results of the study indicate that the IHEP indicators are largely still relevant, and the expert panel retains all but one indicator, with some language revisions. The analysis of the revision process offers insights for administrators as well, as it indicates the focus of changes. As an implementation model, Sloan Consortium has published the interactive scorecard resulting from the study at http://sloanconsortium.org/quality_scoreboard_online_program

Credibility. Shelton is dean of online education at Dallas Baptist University and is a veteran online educator, administrator, consultant, and author of studies, reports, curriculum, and handbooks addressing the development of quality online courses and administration. Published in a refereed journal of asynchronous learning research, the study satisfies quality and evaluation criteria for literature examining supporting effective, standards-driven online course development.

Xu, H., & Morris, L. (2007). Collaborative course development for online courses. *Innovative Higher Education*, 32(1), 35-47. doi: 10.1007/s10755-006-9033-5

Summary. Xu and Morris (2007) explore use of a collaborative approach in the course development process for online instruction through study of one large university system's development of undergraduate courses. The course development team included four faculty members, one project coordinator, and one web instructional designer. Data sources include semi-structured interviews with participants, observations of planning meetings, and an online course development site.

In developing the frame for the study, a review of literature associated with collaborative processes for online course development suggests important faces of a team approach, stressing that this is a new model for most faculty. In addition to the central role of pedagogy, which is “conceptualized as a process of transformation rather than translation of lecture content” (p. 36), and the need in online contexts to “orchestrate flow of instruction to ensure interaction and feedback” (p. 37), research summarized by Xu and Morris highlights the “delicate and negotiated role” of the instructional designer, who must have “high level interpersonal skills” as well as design knowledge (p. 37). Differences in discourse among academic disciplines heighten the need for good communication practices among development team members. Explicitly identified responsibilities, opportunity to create understanding around shared values and expectations, and mutual respect for respective areas of expertise were identified as key preparation for quality course development with effective collaborative teams.

Xu and Morris use a theoretical framework for team member roles based on Berge's (1995) categories of online facilitation: *pedagogical (curricular)*, *social*, *managerial*, and *technological*. Stark and Lattuca's (1997) academic plan framework also presents a description of course development as a deliberate planning process, which creates a structure for standardization and for focusing interactions among the team during development.

The study provides detailed descriptions of faculty and instructional designer interactions, and reflects findings in other literature on collaborative course development: Faculty find value in the peer-review aspects of teaming with colleagues, but note the increased workload of collaboration; faculty are less satisfied with consistent structures of course management software that necessitate instructional designer input in content that they feel is dictated by their own subject matter expertise rather than the delivery mechanisms. This type of overlap in curricular decision making has the potential to create conflict; independence and creativity in course development is valued by faculty as part of the historical academic culture. The study recommendations include familiarizing faculty ahead of course development with the characteristics of the online environment to illustrate the interactivity of a course structure in that context and identifying the importance of sequencing and consistency for instruction in online media.

Credibility. Authors are one doctoral candidate with one faculty director of a research institute within the University of Georgia whose expertise includes evaluation and assessment. Published in a refereed journal of practices relevant to higher education, the study satisfies evaluation criteria for presenting course development with one weakness: the theoretical framework utilizes a planning model for academic curriculum rather than an instructional design

base for pedagogy. This strategy is identified clearly in the outline of the purpose and design of the study as a method to elevate attention to team-based processes that address “major elements rather than narrowly to advocate inclusion of specific content or use of particular instructional strategies” (p.38). In this manner, the study emphasizes a core value of faculty-centered teams by locating the direction of instructional strategies with faculty and in offering a flexible, pedagogically-sensitive method of designing processes that support rather than dictate the division of labor in course development.

What types of faculty or personnel preparation and training in online course delivery have promising effects on course or program quality?

Georgina, D. & Olson, M. (2007). Integration of technology in higher education: A review of faculty self-perceptions. *Internet and Higher Education, 11*(2008), 1-8.

doi: 10.1016/j.iheduc.2007.11.002

Summary. Georgina and Olson (2007) examine how faculty technology literacy and training impact pedagogy in 15 public colleges of education at state universities. Prior to implementing faculty training in online course development, authors recommend an assessment of faculty perceptions of their technology literacy as it relates to their readiness to integrate technology into pedagogy. Authors conclude that instructors prefer technology training that successfully integrates their pedagogy over technology training that simply reveals how the instructional technology tools work.

Study outcomes suggest faculty technology literacy is strongly correlated with integrating pedagogy in design and delivery. Faculty training may be “maximized for the integration of pedagogy by using small group faculty forums with a trainer” (p. 1). Sixteen specific recommendations are given for increasing university support of faculty literacy; four additional recommendations define successful workshop formats, and authors recommend an assessment of IT trainings for pedagogically sound methods that lower threshold participation skills and present a developmental curriculum.

Just over half of faculty in the sample (52.1 %) believes it is the university’s sole responsibility to train faculty in ways that enhance teaching. Though 94.9% of institutions in the study offer faculty training, responses indicate the training offered may be insufficient. For

colleges of education considered in the study, it is significant that faculty ranked themselves lowest in SMART Board™ proficiency, as it is a tool increasingly found in educational settings. Only 16.5% of faculty felt proficient in creating learning-based website pages, and 19.9% felt proficient in the creation of content management software-rendered websites/pages. Using web spaces to teach ranked even lower at 71.2% not proficient.

Two of five strategies for training show clear relationships to technology literacy: (a) small group faculty forums with trainer; and (b) independent, asynchronously offered online tutorials. “Asking colleagues” is rated highly preferred, though only 35% report having shared training with peers, and 63% report that their most important criterion for training is trainer quality. Individualized training linked to specific faculty goals and departmental forums and workshops that capitalize on peer-to-peer training opportunities are recommended.

Credibility: University of North Dakota faculty Georgina and Olson publish their study in the peer-reviewed *Internet and Higher Education*. While the study does not describe training in a specific course development case, it describes a recommended process of grounding faculty training with a pre-assessment of technology literacy related to pedagogy prior to course development, and describes a study of 15 higher education institutions’ faculty with a large sample size (n=1115). The study satisfies all quality guidelines and five out of six evaluation criteria. The study distinguishes technology training from pedagogy; acknowledges that disciplinary differences may influence adoption of technology in pedagogy; and presents a trainer-to-faculty peer group model positioning training in a manner which captures faculty preference for peer-to-peer discussion of pedagogical applications along with trainer expertise to guide technology solutions.

Graham, L. & Thomas, L. (2011). Certification in distance learning for online instructors:

exploration of the creation of an organic model for a research-based state institution.

Online Journal of Distance Learning Administration, 4(1). University of

West Georgia: Distance Education Center. Retrieved from:

http://www.westga.edu/~distance/ojdla/spring141/graham_thomas141.html

Summary. Graham and Thomas (2011) provide a detailed self study of an organically developed certification course for developing the abilities of online instructional faculty serving a non-profit, public university-affiliated research institute. The model departs from a more commonly described centralized distance learning model due to the fact that the study site has few online programs and faculty time commitments to scholarly work preclude some of the collaborative strategies detailed in online course development literature. The instructional designer describes institutional needs through an informal needs assessment and meetings with faculty. One school in the institution with previously-experienced online educators is engaged as a way to collect data to establish a common course structure and format to which nursing faculty and the instructional designer subsequently adapted all coursework. Using a similar format, the designer created a three-week online certificate course for faculty designed to address: (a) intellectual property and copyright issues and clearance, (b) applying the Quality Matters rubric and other criteria frameworks for quality to their current course designs, (c) creating shared resources via a course wiki, and (d) contributing to course modeling exercises. The activities of the certification course has strengthened course proposals overall in the institution, as the structure of quality guidelines and inter-relationships with existing curriculum became explicit and shared.

Graham and Thomas suggest that the challenges of presenting a research faculty with production model formats for generating online instruction required reformulating some features of designed faculty development. Recommendations include: (a) assessing the current course models to distill core valued processes and pedagogy designs; (b) providing additional frequent opportunities for showcasing faculty online pedagogy; (c) encouraging faculty to share applications of quality course rubrics; and (d) championing inclusion of online excellence in promotion and tenure review.

Credibility. The article is published in a refereed journal for online distance learning administration. Lead author Graham is an instructional design specialist who directs faculty development for online teaching for the University of Missouri at Kansas City. Satisfying all evaluation criteria, and most quality criteria, the study is slightly weak in the areas of identifying a research base for instructional design related to faculty development; the acknowledgement of the importance of sound pedagogy with cognitive science orientation to instruction and learning is present but usefulness of the study to the faculty member seeking more information is limited without guidance for the detail of justifying the role of an instructional design specialist apart from labor sharing in launching numerous courses or programs simultaneously in a department. More data representing faculty perceptions of outcomes is desirable; of 80 enrollees, only 50 faculty members completed the certification course.

Lee, D., Paulus, T.M., Loboda, I., Phipps, G., Wyatt, T.H., Myers, C.R., & Mixer, S.J.

(2010). A faculty development program for nurse educators learning to teach online.

TechTrends, 54(6), 20-28. Retrieved from

<http://www.springerlink.com/content/8384276j63727563/>

Summary. Lee et al. (2010) present faculty development modeled through Community of Inquiry (Garrison et al, 2000) for nursing faculty at a large public university. The seven authors of the self study comprise a design team with expertise as long-time online instructors, and include faculty in educational psychology, nursing education, health services and public policy, along with one IT fellow and a doctoral student in instructional technology. The profile outlines the processes of moving two nursing programs (one RN to BSN and one PhD program) online. Five synchronous workshops, three asynchronous discussion forums, and numerous classes over a three month period provide initial faculty development.

An ADDIE model (analyze, design, develop, implement, and evaluate, cited in Centamo & Kalk, 2005 and Molenda, 2003) is described, with formative evaluation throughout and final summative evaluation for ongoing implementation. The Community of Inquiry model guides workshops with teaching presence, cognitive presence, and social presence emphases to create a strong community comparable with residential programs.

Needs assessment reveals disparate skills levels and readiness and differences among undergraduate large lecture and graduate smaller discussion-based pedagogical approaches. The design team collected data throughout; reflections from faculty suggest that the greatest area for improvement is release time to synthesize and apply skills learned to courses they will deliver,

concurrent with training to benefit deeper acquisition and transfer of skills. Institutional support in release time or other funding incentive helps faculty prioritize the necessary time commitment.

Key for this analysis is the team's focus on drawing out the expertise of the faculty as a way to identify important skills. The community of practice sustains itself if the community engages in ways that support the values it conceives. Designers model for faculty the use of the online tools and activities students would eventually use, and support learning with IT supplemental skills classes for faculty who require extra mentoring. In follow-up assessments, faculty and design team call for additional training for pedagogical concerns, as faculty did not take advantage of practice opportunities to facilitate or design materials. Additionally, without some form of incentive driving the objective of thinking through online applications for pedagogy, designers observe that voluntary training does not penetrate deeper instructional design learning unless faculty are engaged in solving a current instructional approach for imminent teaching.

Credibility. Authors include one doctoral candidate in instructional technology with eight years of online instructional course development experience and six faculty members from various departments with extensive experience in online programs at the University of Tennessee. Published in a refereed journal recommending best practices for the integration of technology in learning environments, the study is framed with multiple conceptual frameworks directed toward both instructional design and faculty evaluation processes, and satisfies all evaluation and quality criteria.

Marek, K. (2009). Learning to teach online: Creating a culture of support for faculty. *Journal of Education for Library and Information Science*, 50(4), 275 -292. Retrieved from <http://jelis.org/featured/learning-to-teach-online-creating-a-culture-of-support-for-faculty-by-kate-marek/>

Summary. Marek (2009) presents results from a 16-item survey of faculty teaching American Library Association accredited master's online programs. Respondents (n=296) indicated that 69% (n=196) teach online. (Of ALA programs, 89% offer online graduate programs with 23% being fully online). The study indicates that 63% of faculty receives no support for new course development; 24% receives financial support, and 13% obtains course release time. In introductory training experiences, 44% experiences formal university support, with 20% occurring within the parent LIS program "as part of training for online course design and delivery" (p. 281). For informal or ongoing training, 63% relies on peers for help integrating new approaches.

A key finding reports "when formal support for instructional design is made available by the institution, 63% of professors report being confident to highly confident in their online teaching" (p.284). When discipline-specific support for instructional design is offered by a program, this confidence rating is 76%. Marek's findings indicate LIS faculty wants discipline-specific, "customized services and support closer to home" that reflect higher technical skill levels in Web 2.0 technologies. LIS faculty finds they "are ahead even of IT support staff" at the institutional level, and often end up providing IT support to students themselves, which creates disincentive to introduce technologies in teaching even among those most confident in use of the tools (p.286).

Marek synthesizes themes of the study results and literature review to suggest a three-tier model of shared responsibility for ongoing faculty professional development in online teaching. At the program level, the model locates course release time, peer support and mentoring, and content specific assistance, plus skilled student or staff assistants as critical to successful online program delivery. At the institutional level, faculty wants to see more generalized instructional design support and training in online pedagogy; IT workshops in university systems or technical training; one-on-one help desk, incentives; policy development; and infrastructure investments as the chief support for success. Conferences, courses, or outside training are options to be supported but the model places most emphasis on program and institutional supports.

Credibility. Published in a refereed journal for library and information science (LIS) and authored by an LIS graduate school faculty member, the study satisfies all evaluation and quality criteria and offers a well supported case for faculty training supports that extends across the institution while locating greater course development at both program and institution levels. The study presents the model through the lens of requirements of a specific pedagogy, and offers a generalizable schema for graduate programs that suggests a need for creating more program-level content specificity to course development models.

McKenzie, B., Ozkan, B. & Layton, K. (2006). Distance learning faculty development via mentoring. In C. Crawford et al. (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2006* (1282-1287). Chesapeake, VA: AACE. Retrieved from: <http://www.editlib.org/p/22237>

Summary. McKenzie et al. (2006) present a review of literature related to faculty development activities and analyze a single case of a college of education seeking to introduce online instruction to increase graduate student enrollment. The study emphasizes mentoring over workshops, seminars, or one-on-one consulting. During one academic year of focus, the subject college completed a plan that included eleven comprehensive components:

1. Distance teaching needs assessment (7-question survey probing course type and Mentors self-identified (n=18)
2. Survey results (n=20)
3. Mentors assigned to faculties with departmental approval
4. Incentives provided to distance mentors (\$500 cash per course or mentee up to two) and mentees (\$400 per course initiated online)
5. Recommended structure for mentorship, and guides to effective pedagogy online
6. Assessment instrument – formative and summative
7. Administrative support for mentorship consisted of structural guidelines (items 8-11):
8. Suggested agendas and support references
9. Initial schedules for implementation activities pegged to course dates
10. A recommended pattern for ongoing meetings including review of mentee work assigned; feedback; discussion of difficulties or successes; revisions needed; plan for next class activity; set meeting and agenda for next completed goals
11. A newsletter to capture and distribute questions surfacing among faculty and to present effective pedagogy

Nine new undergraduate classes and 22 graduate classes were initiated online as an outcome. The mentoring model was rated as effective; all respondents expressed need for earlier and sustained mentoring work, and mentors requested more specific pedagogy-linked training opportunities.

Authors are faculty members of a campus known for adoption of online instruction, which may explain enthusiastic reception in other areas of campus; the absence of problems overcome or technology limitations in the report suggests an unusual setting with technology rich context. As a quick-start implementation, the mentor program elevates a cultural expectation for the activities. In contrast with best practices, authors advocate startup without long term planning structures or support for ongoing pedagogy advancement, aspects mentor-faculty clearly ask for; in alignment with best practices, the training method utilizes the culture of the academy to link growth mentoring with senior faculty, and the program offers incentives to both mentors and mentees for pioneering course leadership. Sustained incentive, continuous improvement, or quality monitoring are not addressed.

Credibility. This article is presented in a refereed conference for international IT and teaching and published in the conference proceedings. The authors are University of West Georgia faculty members (at time of publication): one professor and department chair of media and instructional technology; the dean of the College of Education, with one assistant professor of instructional design. The emphasis on the administrative directive for initiating the process is most likely tied to the fact that one author is the dean of the institution discussed in the study; this aspect raises questions as to the objectivity of the faculty responses. The study is included as a model of caution for administrators searching for quick online implementations without

consideration of the research base for instructional design or planning for maintenance or continuous improvement through peer review.

Orr, R., Williams, M.R., & Pennington, K. (2009). Institutional efforts to support faculty in online teaching. *Innovative Higher Education*, 34, 257–268.
doi 10.1007/s10755-009-9111-6

Summary. University faculty authors Orr et al. (2009) iteratively sample ten faculty members and two administrators of two regional comprehensive universities with comparable missions, enrollments, cultures, and strong starts in implementing online learning opportunities for students. The article captures factors fundamental to success in online teaching from the faculty viewpoint, and faculty's perceptions of institutional responses to barriers to that success. Sample size is deemed less important in this study than depth of subjects' experience in online teaching.

Orr et al. open an unexpected facet in respect to their research design. By addressing veteran online faculty, they point to maturation of faculty development as necessarily shifting emphasis away from technical concerns toward deepening faculty investigations in pedagogical improvement. Once a faculty has become comfortable with technology, Orr et al. ask how to best advance the pedagogical applications of media to capture the highest instructional benefit from online instruction. Veteran online instructors report the need for: (a) standardized methods to evaluate and continuously improve online teaching, through peer evaluation systems; (b) opportunities to share successful methodologies across disciplines; and (c) access to staff for assistance in conceptual design or to distribute workload in course development. Factors questioned by some as constraints on faculty academic freedom or production-model threats to

rigorous engagement for both faculty and students are raised by veteran online instructors as essential supports for quality instruction. Subjects express less urgent concerns with compensation outside of time required for course development; a focus on high quality student learning and commitment to effective practice in teaching is highlighted above all. Veteran faculty wants to (a) capture the complete instructional potential of online contexts and (b) see evidence of an explicit institutional strategy for online education purposes. Incentives such as release time or compensation for course development are valued, but not to the exclusion of core faculty values for effective teaching and commitment to the mission of higher education.

Credibility. Authors are education faculty at three different universities; the lead author is the vice chancellor for information resources and CIO at the University of North Carolina. Published in a refereed journal of higher education administration and teaching, the study identifies chief concerns and barriers for faculty in obtaining technical support, training, and compensation or course development time for work in online program development. Satisfying quality guidelines and all but two evaluation criteria, the study does not discuss a set of standards, but locates the responsibility for quality with the institution. Literature is cited in organizational change and faculty academic review process, suggesting that much deeper cultural shifts are necessary in the academy to incorporate online development contributions of faculty in a manner that supports quality. The study is included as a strong presentation of faculty perceptions of needs for pedagogy collaboration and team-design for online course development.

Schrum, L., Burbank, M., Engle, J., Chambers, J., & Glassett, K. (2005). Post-secondary educators' professional development: Investigation of an online approach to enhancing teaching and learning. *Internet and Higher Education*, 8(2005) 279-290.
doi:10.1016/j.iheduc.2005.08.001

Summary. Schrum et al. (2005) describe outcomes of a semester-long online program of study for community college faculty with lessons, readings, projects, and support resources framed within a course management system. Participating faculty (n=22) from eight institutions across the U.S. completed the program. Faculty survey and open-ended questions assess: (a) the degree to which the course developed faculty interest in the technologies in pedagogical approaches; (b) whether or not the course changed student learning, their teaching outcomes, or approaches to implementing courses; and (c) the feasibility of conducting faculty development instruction online.

Authors note that though the retention rate is high (70%) for online learning, and the projects are of high quality, the professors-as-students have great difficulty in completing mandatory posting requirements during the semester on time due to instructional and other academic duties. Indeed, the largest challenge reported in several responses over multiple questions related to the unexpected amount of time required to engage online assignments fully. For some faculty in the study, "online" equates with "easily dispatched", until contextual or instructional barriers to transferring their course content are encountered. Requirements such as regular threaded discussion contribution—a feature unique to online formats—can cause high levels of frustration through unclearly scoped pedagogy. Participants are unable to identify the value of the activity in terms of engagement or content without a methodology with which to

capture learning, topics, or colleague contributions to discussions. As a feature to build a community of practice, the authors of the study rate this aspect and introductory activities the least successful: "The data show that these assignments require careful scaffolding and effort to assure that the assignments are clearly explained...most felt they did not adequately stimulate the development of an online community" (p. 287). Author recommendations for improvement include: (a) mandatory online orientation and tutorial to familiarize students with the courseware and the pedagogical justifications for assignment types using the tools given in advance; (b) careful distribution of the workload to avoid end-of-semester overload—something to anticipate in assignments to their own future online students; (c) FAQ for recapitulating important threaded discussion facts and responses; (d) refined threaded discussion process and content to "stimulate more...reflective responses" (p. 287); and (e) required broadband connection to add synchronous discussions to create better sense of community.

Credibility. Four of the authors were faculty at the University of Utah (UU) at time of publication. (Schrum is professor and director of Teacher Education at George Mason University. At publication, she was chair of the Department of Teaching and Learning at UU. Burbank is associate clinical professor and director of secondary education at UU.) Published in a refereed journal for higher education online learning, teaching, and administration, the study satisfies all but two evaluation and all quality criteria. The study does not discuss quality standards as guiding the development instruction, and does not discuss online methods to address specific pedagogy, but rather, a specific intent is stressed: the use of "development of a virtual learning community, in order to move the experience beyond that of a collection of web based activities" (p. 282). The study is useful in clarifying how straightforward faculty development

instruction in a course management system must be explicitly linked to goals for outcomes, even for pedagogues as students.

Shattuck, J., Dubins, B., & Zilberman, D. (2011). MarylandOnline's inter-institutional project to train higher education adjunct faculty to teach online. *International Review of Research in Open and Distance Learning*, 12(2), 40-61 Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/933/1669>

Summary. Shattuck et al. (2011) evaluate a pilot state-wide online certificate training course for higher education adjunct faculty preparing to teach an initial online course. Mixed methods provide data from participant student, instructor, and designer surveys and journal reflections. Problem addressed: In addition to increasing the numbers of qualified instructors to meet demand, common in-state online certification for online teaching reduces redundant or inconsistent training offerings among varied institutions sharing instructors virtually.

Background for the study includes detail from two dissertations considering adjunct development for online instruction, indicating that adjuncts prefer the access provided by online development and appreciate the perspective and reflection afforded by being a student in the medium they will use to deliver instruction (Blodgett, 2008 in Shattuck et al., p. 42). Pre-study needs assessment indicates that lack of staff and lack of time impacted training at all institutions, and 81% of respondents were personally interested in online teaching certification.

Authors describe ten months of pre-launch, offering, and post evaluation activities, including forming an advisory board of experienced online instructors, instructional designers, and distance learning administrators. A course development team was recruited; project

timelines and course development standards determined. Instructional design planning is framed with the criteria recommended by Morrison, Ross, and Kent (2007, in Shattuck et al., p. 47): “learner characteristics, task analysis, instructional objectives, content sequencing, instructional strategies, designing the message, developing instructions, and evaluation instruments” (Morrison Ross, & Kent, 2007, p. 12 in Shattuck et al., p. 47).

The study describes a nine-week, asynchronous, 4-module course for experienced adjunct college instructors who were new to teaching online. The course is based on Quality Matters standards and addresses eight competencies: “(a) orienting students to online learning; (b) technology skills; (c) learning management skills; (d) basic instructional design principles; (e) pedagogy and andragogy; (f) social process and presence; (g) managing assessment, and (h) legal and institution-specific policies and procedures” (COAT Project, 2010, in Shattuck et al., p. 48). Course materials and activities modeled after typical online instruction in higher education settings include texts, articles, web based readings; video; reflective written and interactive exercises, quizzes and self-checks, and discussion boards.

Evaluation presents features of the course within “a social constructivist epistemology as defined by Koro-Ljungberg, Yendol-Hoppey, Smith, and Hayes (2009)” (p. 51 in Shattuck et al., p. 51). Findings from respondent surveys indicate that the course is highly successful in increasing adjunct confidence and preparedness for online instruction and participants would recommend the course to a colleague. The most liked aspect is the opportunity for instructors to have the student experience; the least appreciated is the demand of threaded discussion participation and workload overall. For the instructor, an outcome is a newly articulated sense of the instructor role, with the “most important roles [being]...to set out the tone for communicating online and to serve as a guide” (p. 57). Recommendations include providing optional

synchronous conferencing opportunities; reducing workload in one or more of the modules; and changing the grade weighting of several assignments to optional or un-graded (p. 58).

Credibility. Authors are Maryland community college faculty from different institutions. Published in an international journal of research in open and distance learning, the study considers a collaborative inter-institutional effort to develop training for adjunct higher education faculty by MarylandOnline, a 12-year veteran online pioneer organization in distilling and disseminating course quality assurance methodology. The study provides a comprehensive outline for a pilot faculty development program.

Sutton, M., White, L., Mbizo, J., & Stewart, G. (2010). Assessment in online programs: Use in strategic planning for faculty/adjunct development and course instruction to improve faculty and student engagement. *International Journal on E-Learning*, 9(1), 129-145.

Summary. Sutton et al. (2010) describe an organizational assessment-driven continuous improvement model to manage quality in new online programs in health and life sciences at the University of West Florida. Faculty and student engagement is the target characteristic for continuous improvement of quality. Engagement is a driver for improved faculty development through higher rates of participation and deeper adoption of tools and strategies (leading to improved instructional outcomes). Engagement is also established in online learning research as the driver for student learning. The study considers the School of Allied Health and Life Sciences (SAHLS)'s online program faculty performance, interventions, and post-intervention outcomes following a 360-degree or multi-source assessment to establish baseline performance on four criteria: (a) *quality enhancement* (measured by faculty and student engagement); (b) *accountability* (measured by feedback from learner survey, accreditation review activities, and faculty participation in peer-review directed to online instruction; a fourth measure captured how often and to what degree faculty implemented changes in instruction to accommodate these sources of feedback); (c) *marketability* (based on faculty and student feedback and willingness to promote courses to others; and (d) *productivity* (measured effectiveness in attracting new students, demonstrated student learning outcomes, and efficient, scalable faculty development).

SAHLS' previous training for faculty development in online instruction consisted of voluntary workshops with electronic materials and manuals available for the nearly 80 percent of faculty who did not or could not take advantage of training. The outcomes of this method demonstrate very low faculty engagement precipitating low performance on the other quality measures (low quality content, low accountability scores, unmarketable reputation for courses, and low productivity). SAHLS applied a published instrument from the client-centered care model, and from these results determined to improve faculty development through policies directed at efficient training with a set of interventions including new bi-weekly roundtable peer-driven meetings ("e-Jams", p. 133) addressing items identified in needs assessment, and including test protocols for new instruction strategies, requiring lead peer faculty to model and follow-up with peer training. A complaint tracking system, peer review, and one-on-one tutoring are also recommended.

SAHLS protocols for intervention include periodic sequenced trainings; administrative support for mid-course student feedback evaluations during the first two times the course is delivered; and "avenues for voluntary and confidential peer-based interventions" in cases of courses with "sub-optimal" ratings by feedback assessments (p. 134-5). Tracking the four criteria for outcomes measures is also detailed. The study recommends: (a) multiple training strategies; (b) intervention protocols and quality policies; (c) lead faculty beta testing of innovative instructional tools; (d) ongoing periodic organization assessment and faculty-peer course review; and (e) shifting to team based development of course formatting and technical delivery utilizing technical staff for training and support throughout delivery. A robust case example of one module developed in Second Life as one strategy for increasing student

engagement is described and analyzed using the protocol and measures for engagement improvement.

Credibility. Authors are faculty at University of West Florida. Published in an international refereed journal dedicated to e-learning and teaching in corporate, government, healthcare, and higher education. The study satisfies all evaluation and quality criteria and is a high-quality model for online program improvement.

Villar, L. & Alegre, O. (2006). Online faculty development and assessment system (OFDAS).

International Review of Research in Open and Distance

Learning, 7(3), 1-19. Retrieved from

<http://www.irrodl.org/index.php/irrodl/article/view/367/734>

Summary. Villar and Alegre (2006) describe development and assessment of the Online Faculty Development and Evaluation System (OFDAS) created at the Canary Islands. A voluntary program offered to 24 experienced faculty of scholarly merit in a scientific field, the development program covers an 11-week time frame following an initial face-to-face four hour workshop. The study describes faculty completing a total of 1,587 online learning activities during the first offering of OFDAS. The program also includes a 10-item professional skills rating scale used throughout the course to track improvements in essential skills of professional practice; in addition, sample items from a 20-item faculty self-assessment to capture faculty attitudes toward the learning they perceive to experience in the course are included, along with a 22-item instrument for student evaluation of university teaching activities and learning environment online. The results of student assessment (n=480 in the case example) are provided as feedback to faculty within the program as a part of reflection activities of the course. Additional features of the program include sequenced, structured lessons.

Central to the development activity are three foundational principles that OFDAS

administrators ask faculty to consider: “(a) academics and students are different, thus curriculum and implementation of classroom methods must be designed to respect student diversity and identity” (p. 2); (b) peer reflection and feedback are primary means of recognition and achievement in the academy; in the development course, this same collegiality is an important tool for improvement; and (c) “online development increases one’s own decision-making processes and learning” (p. 2).

Outcomes of the study suggest that faculty find the online method effective, relevant, useful, positively impacting, and the provision of current student feedback on effective learning climate during a course designed to improve faculty impact on learning climate provides additional reflective opportunity (though it was not statistically significant in the study, p. 15). Specific pedagogy with activities keyed to various science instruction methods is key for faculty of sciences to engage meaningfully. Workload is cited as a barrier for the final two weeks’ activities which experience lower completion and value scores on the learning assessment scales.

Credibility. Authors are professors of education at two different universities in Spain. Published in a refereed journal of theory, research, and best practice in open and distance learning, the study is an effective model of dual purposes in online faculty development: (a) training, support and professional skills building guided by grounded institutional standards and (b) continuous improvement through the development course inclusion of and reflection on student feedback on the learning environment. The study satisfies all quality and all but one of evaluation criteria for faculty development in online instruction. Administrative support roles in faculty training are not clearly enumerated or referred to other than mention of “coaching and scaffolding provided by two OFDAS leaders” who “diagnosed the strengths and weaknesses of each participant and tailored any support needed” (p. 9). Authors acknowledge that assistance

was “often needed” (p. 9), but it is unclear what structures that support. Authors also suggest that because faculty participants were not random, the study results should not be generalized to other universities (p. 15); however, the study offers a detailed assessment-to-practice outline for approaching the task of designing online development for accomplished instructional faculty.

Villar, L., & Alegre, O. (2006). An innovative junior faculty online development programme. *E-Learning*, 3(4), 599-612. doi: 10.2304/elea.2006.3.4.599

Summary. Villar and Alegre (2006b) recommend components of online faculty development key to improving overall pedagogy for junior faculty and providing quality assurance in greater European higher education. Authors establish the need for personnel preparation within online contexts to improve pedagogy and delivery. The study examines whether two online faculty training courses have positive effects on attitudes to learning and curriculum and teaching capacities (CTC) in junior faculty. The study recommends: “presentation of real, truthful content”; “self directed learning experiences and activities applied” to the faculty members’ actual context for teaching; “dialogues among participants... and “with e-developers as colleagues”; “assessing learning and providing feedback” while allowing participating faculty to “ask questions in supportive environment”; and “using telecommunications technology to provide the scaffold in learning to teach” (pp. 601-2). Among assumptions noted with relevance for faculty personnel development in online pedagogy is the notion that “online collegial interaction (chat, email, threaded discussion) is imperative for faculty development” and “faculty is interested in adapting their teaching style and subject design to meet the expectations of today’s diverse students” (p. 602). Key resources for faculty engagement in training include relevant subject matter materials; asynchronous discussion forum; one-on-one interactions with teaching mentors or other participant instructors; exams integrated into the learning activity for formative assessment of concepts to support a sense of

progress; an assessment of faculty satisfaction post-course; real time chat with an experienced professor-mentor to discuss progress and motivate development.

Villar and Alegre suggest that developing successful faculty training requires apprehending the pre-existing concepts they hold regarding the professoriate; new and experienced teachers alike hold “particular beliefs on approaches to teaching specific subject matters to students; formal lecturing; small group teaching or tutorials; large-group teaching or laboratory work” (p. 600). Faculty attitudes toward types of pedagogy influence receptiveness to new or online forms. Accessing and elevating these perceptions for reflection are productive steps in moving faculty forward in capturing new strategies to expand or fulfill these commonly held perceptions.

Credibility. Authors are faculty in two different universities in Spain. Published in the refereed *e-Learning* journal, the study fully satisfies all but one of the evaluation and quality criteria for studies of faculty training for online course development. The discussion of specific pedagogical concerns of junior instructional faculty is broad and not limited to developing course content online; authors discuss the developmental stages of junior faculty growth and locate the pedagogical concerns with earlier development acquired through all teaching experiences, not simply those of online instruction. The study notes criteria for establishing institutionally-grounded quality assurance for online faculty development, and suggests that quality in general for instruction in all types of delivery, online, hybrid, or face-to-face, is improved with the development process for online teaching due to the reflection on quality and the means for incorporating peer review of courses.

Villar, L., & Alegre, O. M. (2008). Measuring faculty learning in curriculum and teaching competence online courses. *Interactive Learning Environments, 16*(2), 169-181.
doi:10.1080/10494820701365937

Summary. This multi-case study of online faculty development in five Spanish university settings explores faculty development as engagement in self directed improvement in teaching and learning competencies (CTCs) through the lens of staff development theory. Four research questions structure the study: (a) what are the differences in curriculum teaching competency (CTC) needs among participants of five Spanish universities; (b) how can online CTC training positively affect faculty members' attitudes and abilities; (c) how well do faculty members respond to various kinds of CTC online learning activities; and (d) how different are faculty members from old and new Spanish universities in CTC performance tests? Pilot studies of the online model for each CTC informed the instructional sequence. The sequential learning model of a CTC (p. 173) depicts stages of curriculum and teaching competence fully applicable in online formats across all subject matter. Research on adult learning grounds the conceptual framework applied to support, motivate, and develop faculty-as-students. The study summarizes 8,245 activities of volunteer faculty member participants (n=162) enrolled in five separate 11 week faculty CTC development courses covering ten core competencies. The online course represents 784 narrated stories collected as faculty "filter their personal experiences through their practical knowledge" (p. 177).

Instruments for the study include needs assessments of faculty curriculum and teaching; faculty assessments of the CTCs; assessments of faculty understanding of the theoretical base

underlying CTC activities; and CTC learning performance tests. Findings indicate that “learning is transformational, i.e., the online CTC organization operates proactively in the classroom learning environment involving a process of deconstruction and reconstruction” (p. 177). Frequent feedback, discussion forums, and high engagement with faculty questions are factors authors find critical to faculty learning; they also suggest that the learning materials must be “carefully planned and structured” to reflect substantive pedagogical exercises for an adept and reflective audience highly motivated to improve practices. Themes of excessive task workload for faculty, variable merit or overtime incentives among institutions, and the discomfort of revealing one’s learning performance in a collegial social context are presented by participants as potential drawbacks to the intensified method of development (p. 178).

Credibility. Published in a refereed journal for research in interactive learning and courseware production, the multi-case study satisfies all quality criteria and evaluation criteria for both faculty professional development and course development models based in standards for quality (in this case, the quality standard is based on the European Association for Quality Assurance in Higher Education). Online quality demonstrated through faculty CTC development also satisfies demands placed on institutions by the European Credit Transfer and Accumulation System (p. 178), which calls for greater inter-institutional demonstration of accountability for student learning outcomes. The ten curriculum and teaching competencies (CTCs) frame the focus for faculty development studies. The detailed sequence model of a CTC provides a generalize-able structure for online standardization. Important for this bibliography, the study provides a systemic perspective with emphasis on inter-institutional benefits of collaboration in establishing standards or baseline competency requirements, training, and incentives; it is also

included as longitudinal viewpoint of two earlier studies included in the bibliography conducted by the authors during pilot testing and evaluation of the first CTC faculty development courses.

How can an accredited program or institution address course development for specific pedagogies?

Derntl, M., & Motschnig-Pitrik, R. (2005). The role of structure, patterns, and people in blended learning. *Internet and Higher Education*, 8(2005), 111-130.

doi: 10.1016/j.iheduc.2005.03.002

Summary. Derntl and Motschnig-Pitrik (2005) apply constructivist principles to one blended web engineering course to describe generalized models of patterning for instruction in a situated use of learning technology. Course design is constructed to support “deep, persistent learning” (p. 2) with a socio-psychological model based on Rogerian person-centered teaching (Rogers, 1983, in Derntl and Motschnig-Pitrik, p.116). The course scenario in the study is illustrated in narrative and in a visual framework of layers suggesting flow or sequence of learning modules for user-centered Web-based instruction. Derntl and Motschnig-Pitrik suggest that visual modeling of blended learning scenarios can be mined for the sequencing and pedagogic patterns which may apply to diverse pedagogies which have in common a person-centered core climate for instruction, regardless of the instructional setting—be it face to face, blended, or fully online. Instructor-student and student-student interactions are shown to be the most learning-critical dependent variables which respond to modifications in the pedagogic pattern designed to support a core climate. Authors cite Hiltz and Turoff (2002) as to the “enormous personal impact of the personal skills and attitudes of the instructor” (p. 126).

According to the authors, who cite Rogers (1961) regarding three core attitudes of effective instructors, if the online facilitator or instructor demonstrates attitudes of *congruence*, *acceptance*, and *empathic understanding*, students experience better learning outcomes (p. 117).

Authors offer project based learning patterns as implemented in web engineering, and present a theoretical base for pattern-based methodology in online learning, advocating the segmenting of project milestones based on desired learning outcomes; grouping of content or learning activities around those milestones, and pre-and post-phases of evaluation and assessment. Outcomes of the study's large technical course (n=355) include finding that "the application of that pattern for that many participants demonstrates that online support is capable of enabling innovative project-based scenarios that could hardly be followed for more than a few students without appropriate computer support" (p. 125). Pre-and post-surveys and questionnaires, and course grade performance tracking showed "initial support for the hypothesis saying that a flexible, facilitative teaching style and personal resources are required to make blended learning and teaching scenarios superior to traditional ones" (p.126).

Credibility. At publication, authors were faculty in the computer science department at the University of Vienna, Austria; currently Derntl is a research associate in Information Systems and Databases, RWTH Aachen University. Motschnig-Pitrik is a professor in the department of Computer Science and Business Informatics University of Vienna. Published in a refereed journal of learning, teaching, and administration on the Internet in post-secondary settings, the study satisfies all quality guidelines and evaluation criteria for presenting conceptual framework analysis in the application of specific pedagogies in online learning. Important for this bibliography, the study bridges deeply technical content and highly structured pattern theory with socio-cultural worldviews based in the fields of interpersonal and educational psychology.

As these philosophies of instructional design are not typically discussed simultaneously in literature considering online pedagogy, the study opens consideration of innumerable interpretations for specific pedagogies. Authors assert that pattern approaches are unequivocally not neutral pedagogically (Goodyear et al., 2004, in Derntl & Motschnig-Pitrik, p. 128); the authors offer one type of conceptual framework guiding learning design, and suggest the model could be “extensible, and thus...adaptable to specific needs” (p. 128).

Eib, B.J., & Miller, P. (2006). Faculty development as community building: An approach to professional development that supports communities of practice for online teaching. *International Review of Research in Open and Distance Learning*, 7(2), 1-15. Retrieved from <http://www.irrodl.org/index.php/irrodl/issue/view/24>

Summary. Eib and Miller (2006) present an example of a community of practice approach to faculty development for online delivery of social work academic courses as a culture-building activity. Authors note that online learning may effectively develop connections and engagement within cohorts for students but can have an unintended effect of isolating the instructional faculty in a program. Further, authors cite Palmer (1999) on the conserving effects of the “privatization of teaching” where colleagues have little supportive dialogue to undertake problem-solving or risk taking but operate as private practitioners; this truncates growth and limits creativity. To address this problem, instructional designers create a virtual institute approach.

“Academics can and should learn about teaching as they do in their discipline...as personal scientists” (Zuber-Skeritt, 1999, in Eib & Miller, p. 2). In a Vygotskian social constructivist framework, according to Eib and Miller, a social context is the requirement for inquiry into socially constructed activities such as knowledge creation and learning. To facilitate this social context, faculty of social work programs were asked to bring authentic problems of practice to mutually help improve effective teaching through faculty-wide approach to integrating technology, rather than “training” individuals in technologies (p. 5).

Prior preparation for a two-day kickoff event included individual meetings with faculty members on proposed development projects to assess both levels of technical support required of the Institute and skills baseline of the faculty member; an Institute site in Blackboard™ was populated with relevant readings; dialogue was facilitated to seed the sharing of pedagogical approaches to individual teaching plans. The institute itself was framed as a mini conference with break out teaching and learning and targeted technology sessions, plenary and discussion, as well as online self-reference resources at “e-Stations” (p. 7). Follow-up consisted of workshops and individual consults on projects. A closing session a year and a half later provided opportunity for faculty to present project outcomes. Projects included challenging teaching concepts such as therapeutic interviewing as taught online, utilizing website development as student project work.

To collect a project completion stipend, post-evaluations were required. While highly successful in launching several online degree programs now completely offered online, the authors identify that the goal of creating a “community of practice” was not sustained. Authors apply the self-study to other online delivery modes; the discussion of community of practice in online formats is useful not only for faculty development but for instructional faculty approaches to pedagogies of co-inquiry such as social services, teaching, or counseling.

Credibility. Authors are one faculty development and e-learning consultant for educational institutions and organizations in Canada and the United States, and one director and instructional faculty of e-learning and distance education at the University of Calgary. Published in a refereed international research journal for online learning, the study satisfies quality criteria

and evaluation criteria for selection as a model of faculty development for online teaching within a specific pedagogy.

Friel, T., Britten, J., Compton, B., Peak, A., Schoch, K., & VanTyle, W.K. (2009). Using pedagogical dialogue as a vehicle to encourage faculty technology use. *Computers in Education*, 53 (2009), 300-307. doi: 10.1016/j.compedu.2009.02.002

Summary. Friel et al. (2009) describe a case of faculty development in the use of technology through multidisciplinary pedagogical dialogue with technology team support. Following a large capital improvement project to integrate new technologies in physical facilities, the 83 members of the faculty of the college of business administration at Butler University fully completed pre-training activities, study and homework designing 10 minute mini-class demos of disciplinary content, plus two hands-on training workshops. Technologies for the focused trainings were interactive whiteboards, lecture console, visual presenter tools, Symposium™, Copycam™, and GoogleDocs™.

Background study for the project considered *millennial student learning preferences* (p. 301), processes to *develop shared vision among faculty and administration* (p. 301) for campus-wide goals for faculty development; and faculty discussions of appropriate technology training design and conditions (p. 302). Prior to training, identified faculty trainers and technology staff created a pre-and post-survey for comparison with outcomes; this survey established that two thirds of faculty had familiarity with constructivist pedagogy, which encouraged this conceptual framework for faculty development.

Implementation trainers were pre-developed from identified lead faculty interdisciplinary groups by administrative and IT staff team; during faculty training, the lead faculty used

pedagogy to demonstrate technology with the support from technical staff as necessary. This technique mirrors research recommending that faculty prefer peer-mentored training with pedagogical relevance; it also addresses faculty reluctance to “expose themselves to failure in front of peers” (p. 302), as well as the scalability of cultivating numbers of potential leaders at once by scaffolding their developing skills with a technical backup to increase confidence.

Conclusions recommend: (a) pre-developing learning outcomes with a faculty training implementation team to shape training requirements rather than recommending one-size-fits-all standards for teaching plans or strategies; (b) allowing trainers to “use their own individual strengths, strategies, and teaching methods” which resulted in trainer confidence and better instruction (p. 306); (c) including a trainee sample teaching demonstration requirement to verify learning outcomes which reinforces the implementation of the pedagogy with the training faculty member as well as increases trainee confidence; (d) using a pedagogical context for training with the support of IT staff not only improves faculty technology use, it improves IT staff familiarity with instructional design and IT support needs for specific activities in a deeper way, and fosters relationships with faculty that allow staff to engage as co-problem-solvers rather than services-suppliers.

Credibility. Lead author Friel is currently dean of the Walter E. Heller College of Business Administration at Roosevelt University, Chicago. Britten is an Assistant Professor of technology for learning, teacher preparation, and instructional leadership at Butler University in Indianapolis, Indiana. The study is published in a technically-based, interdisciplinary refereed journal considering computing in education. It satisfies all quality criteria and both faculty training model and conceptual framework evaluation criteria for inclusion in this bibliography. While not confining the faculty development model to online course delivery, the methodology

for faculty development applies to technology-enhanced instruction within a pedagogical context, and therefore is included as a model of supported faculty development in tools not limited to but including online learning spaces.

Green, N., Edwards, H., Wolodko, B., Stewart, C., Brooks, M., & Littlelyke, R. (2010).

Reconceptualizing higher education pedagogy in online learning.

Distance Education, 31(3), 257–273. Charles Stuart University, New South Wales

Australia: Routledge. doi: 10.1080/01587919.2010.513951

Summary. Green et al. (2010) describe an action research case example of the reformulation of 16 subjects in two early childhood education degree programs at Australia’s University of New England with a constructivist framework that positions “online pedagogy as knowledge creation” (p. 265). Subject matter in the courses covers early childhood (birth to eight), “and include(s) opportunities to study philosophy, leadership, exceptional development, play, multi-literacies, mathematics, relationships with families and communities, creative arts and science” (p. 258), all within the scope of learning and teaching young children.

Authors note that the focus for the inquiry was “re-conceptualizing online pedagogy (strategies and tasks), not on the delivery mechanism” (p. 258). Three conceptual frameworks were used to construct the online pedagogy: “(a) socio-cultural-historical theory; (b) teaching through assessment; and (c) learning as knowledge creation” (p. 263). The impetus for the redesign was new, mandated national early childhood education curricula which faculty program directors felt did not provide contextual engagement with communities of practice in ways that supported the complexity of tasks associated with curriculum decision making for children. “Educators are expected to be decision-makers who draw upon a range of theories, approaches

and perspectives to organize the context and depth of learning” (p. 259), and this often involves utilizing “creativity, intuition, and imagination in working with families and children” (p. 259) in a range of learning contexts. Faculty sought to reframe the new curriculum to develop skills of critical engagement and shared ownership with the community.

Delivery at a distance with CD-ROM software supplemented by discussion threads in Blackboard™ was the instructional technology in place at the time of the curriculum revision, with only limited success in a predominantly paper-based curriculum that was “focused on transmission and reproduction strategies” (p. 260). Online delivery is suited to the demographic as students in the programs work in early childhood day centers “in diverse roles in rural, regional and urban contexts” (p. 268) and require flexible schedules that asynchronous learning affords. Expanded use of online tools facilitates more “authentic, purposeful social interactions” and learning scenarios to “emphasize a full range of higher order learning outcomes, such as advocacy, advancing community knowledge”, and adaptability (p. 261). Use of a learning management system (LMS) assists access to joint projects, documents, other forms of presentation based in students’ diverse contexts, and as shared practice that continues to evolve, represents greater representation of authentic and meaningful learning for educators (p. 268).

Detailed examples are described for learning strategies that contrast pre-post interventions according to each conceptual framework. A learning design framework built on transformative process through assessment techniques that generate data for decision making within a context further empowers students to address the context-dependent variable of teaching and learning with progressive problem solving (pp. 265-266).

Credibility. Authors are faculty and research fellows at the University of New England, Australia. The study, published in a refereed journal of distance education satisfies all quality

and evaluation criteria for considering online learning strategies satisfying the requirements of specific pedagogies.

Guthrie, K., & McCracken, H. (2010). Teaching and learning social justice through online service-learning courses. *International Review of Research in Open and Distance Learning, 11*(3), 78-94. Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/894/1629>

Summary. Guthrie and McCracken (2010) present a case study of online service learning as a base for critical inquiry and social justice pedagogy. Leveraging technology extends the possibilities for instructional impact of one service learning course requiring 60 hours of community service, reflection journals, structured discussion, reflective essays, and culminating projects (p. 84). Distributed geographical locations of students in an online learning space help to enrich collaborative learning through the potential diversity of participant experience, ethnicity, or community cultures as brought to bear on discussions of social equity.

While authors reiterate the cautions of researchers who point out that, in spite of enhanced diversity of online instruction, “it is not safe to ignore issues of race, ethnicity, and power, or assume they are in the ‘off’ mode” (Sujo de Montes, Oran & Willis, 2002, in Guthrie & McCracken, p. 89) because the difference may not be being shared visually, there are other researchers who value the online learning space as an open platform. Greater potential exists in virtual learning communities as compared with face-to-face discourse for sensitive discussion and empowering, open disclosure of difference without triggering reactions, as online discussions are undertaken through a shielded sense of anonymity online (Merryfield, 2003, in Guthrie & McCracken, p. 79).

On-site service experiences contribute community engagement, in a social action framework; in combination with the virtual classroom as a context for reflection and analysis,

together offer “unique combination of learning activities constructed to be individually and collectively relevant” while being “focused on real-world problems” (p. 79). These experiences create the context for experiential learning about social justice; the online classroom creates the mechanisms for reflection, critical inquiry, and meaning making—even including weighing issues of “digital divide”, equity of access, and power dynamics of technology. Further, the efficiency of accessing service learning site team supervision, reflection, and teaching is enhanced through online connections which permit reporting, coaching, and performance evaluation to occur in a variety of real time or asynchronous formats.

The community of inquiry model presented in the study (Garrison, Anderson, & Archer, 2000 in Guthrie & McCracken, 2010) fosters reflective discourse and collaborative strategies for critical inquiry using both synchronous and asynchronous activities; technologies “were selected based on their capacities to facilitate interaction, communication, and collaboration in order to generate shared learning goals and to solve common problems” (p. 82). Learning management courseware, discussion boards, blogs, email, chat, telephone, video conferencing, and social media were employed, based on a combination of progressive, humanist, and radical attributes of learning theory mapped to the various learning activities enabled with the tools (Kanuka, 2008, in Guthrie & McCracken, p. 82).

Data from the study reflect survey responses from a three-semester sample of students from a small public Midwestern four-year institution. Response rates for the survey include a 67% initial response with 36% completing the study.

Credibility. Authors are faculty at two different universities. Published in an international refereed journal of research in open and distance learning, the study meets all

criteria for considering conceptual frameworks for specific pedagogy in online course development; it also meets quality criteria for selection. One weakness of the presentation is absence of explicit detail of the learning activities as they employ the technologies described for instructional design models. A strength of the study is the theoretical base cited for contextualized social justice curriculum situated in service learning experiences with online technology linkages to foster community of inquiry.

Lam, P., & McNaught, C. (2006). Design and evaluation of online courses containing media enhanced learning materials. *Educational Media International*, 43(3), 199–218.

doi: 10.1080/09523980600641403

Lam and McNaught (2006) evaluate three cases of use of online media enriched materials in course design with constructivist assessment methods using rich description based on data from teacher-student survey and interview, and course site access and use analytics. Case one examines simulations in online instruction of computing principles; case two considers audio clips for instruction in English communication; and case three considers student-designed multimedia projects in public health (p. 204).

As background for the case evaluations, online learning via media-enhanced websites is also discussed in terms of teaching architectures (Shank & Cleary, 1995, and Reeves & Hedberg, 2003), as three are used in the case evaluations: “simulation-based learning by doing; learning by reflection; and case-based teaching” (p.200). Uses of media enhanced web sites and the nonlinear nature of web use in general and instructional websites in specific are also discussed.

The study is structured with a revised Bloom’s taxonomy as a conceptual frame for learning design evaluation (Anderson & Krathwohl, 2001 in Lam & McNaught, p. 202), and considers media-enhanced instruction in three web sites in terms of their relative placements along a matrix synthesizing cognitive processes and knowledge in conceptual, procedural, and metacognitive modes. The evaluations also consider student behaviors, both those planned with regard to learning objectives and outcomes, and the actual observed student behaviors with regard to motives and demonstrated results. Authors cite the cognitive interaction model of Kennedy (2004) as they “distinguish between what students do and what students know” (p. 205)

to account for the “continuous dynamic relationship between instructional events and students’ cognitive processes that [are] mediated by their behavioral processes” (Kennedy, 2004, p. 58 in Lam & McNaught, p. 205).

Part of a much larger research project (e3Learning Project, Hong Kong, at <http://e3learning.ede.polyu.edu.hk/>) devoted to review of effective learning aspects of 70 online learning sites with 457 separate evaluation questions, this case study of three uses of media works across four themes for evaluation: (a) a pre-development needs analysis; (b) the web site as a learning environment as it performs under usability aspects; (c) teaching and learning processes including patterns of use of web resources and activities, meaningful communication, course management, workload, enjoyment; and (d) learning outcomes including motivation and affect; learning styles; thinking skills required; course content understanding; reflective learning; relationship, community, and inter-cultural awareness.

Both the taxonomic and the thematic analyses are useful ways of thinking and ways of working for the instructor as well as the evaluator; segmenting the design of learning tasks according to the themes and the taxonomy of cognitive processes is not only helpful for the assessment of target outcomes, it serves as a check on logical instructional progress through learning goals and a means of content organization.

The three cases are very different in pedagogical approach and content, yet all three in some fashion demonstrate that “human-human online interactions”...even those mediated by a website, other communications interface, or time continuum (synchronous or asynchronous) ...“seem to facilitate more genuine and in-depth discussion on difficult topics than human-computer feedback” (p. 215). Authors note that both students and instructors alike have a different expectation, that of demanding higher quality media, but the cases demonstrated that

the greater the resource and production time devoted to creating such media, the greater the inflexibility in content type, or fewer the degrees of freedom of application or post-correction possibilities in the case of student projects. In other words, highly contextualized, rich media is not as instructionally flexible in terms of ways in which it might be applied, and does not offer as much opportunity for student cognitive interactivity and engagement. This is a provocative finding, contrary to the commonly held idea that to be instructionally effective, rich visual media is qualitatively better than other forms of online instruction (p. 215).

Credibility. Authors are both professors and educational researchers at the Chinese University of Hong Kong; each has experience in instructional evaluation. The study is published in an international refereed journal of educational media, and satisfies all quality criteria and all evaluation criteria for consideration of literature detailing cases of online instruction using a conceptual framework. The detail in thematic, conceptual, pedagogic, and cognitive behavior analysis of three very disparate modes of media used in instruction contains potentially useful implications and modeling for online course instructors and designers.

Sidler, M. (2008). Rhetoricians, facilitators, models: Interviews with technology trainers.

Pedagogy, 8(3), 467-480. Durham, North Carolina: Duke University Press.

doi: 10.1215/15314200-2008-00

Summary. Sidler (2008) considers methods for humanities faculty preparation to teach online with an interview study of twelve experienced technology trainers. The study captures six tenure-track professors, three tenured professors, two non-tenure track faculty members, and one PhD-level teaching assistant. Interviewees were asked a series of questions regarding school demographics and faculty technology training, including: (a) the types of institutions and departments within which they work; (b) the amount of technological access at their institutions; (c) the types of training they have coordinated; (d) the types of discussions which follow training; (e) levels of faculty enthusiasm and resistance; (f) institutional attitudes about technology and their impact on faculty training; (g) the level of recognition interviewees received for their training work; and (h) advice for new technology trainers.

The humanities concerns itself with ways in which technology shapes culture; a conflict may arise for the critical pedagogue who may not wish to reify computing technology by using online course delivery while conducting curricula designed to specifically call into question the limitations or assumptions imposed by technology. Technology trainers in the humanities recognize that faculty resistance to technology can prevent adoption of training methods which are, paradoxically, designed to open computing technology access to all students. Interviewees advocate assisting faculty to approach technology through their own core disciplinary values. When training demonstrates equity-creation for students—and contrasts this with the absence of facilitating students' technology competence as interference with the freedom of rhetorical

agency of the student that has far reaching impacts on their ability to participate in many settings of occupation, education, or cultural production—trainers find faculty are willing to adopt pedagogy to include technology. Trainers find use of open source software supports this inclusion by minimizing corporate influences in the classroom.

A key finding for this bibliography is that trainers suggest use of instructional technology by some faculty in humanities must be allowed to emerge, and only then can be effectively supported and facilitated. Recommended ways of working include:

*Using one course or learning management software to influence consistent integration with simplicity (Hoffman & Scheidenhelm, 2000).

*Capitalizing on “technology native” undergraduates to create a community of trainer assistants who support help desk functions (p. 473).

*Consistent modeling of learning-driven technology; pedagogy first.

*Utilizing rhetorical ethos to elevate audience (faculty) needs and dispositions.

*Assessing institutional supports prior to implementing technology.

*Employing “pedagogically useful and course appropriate applications”.

*Incorporating “Plan B” thinking for failures that embrace failure as learning.

*Utilizing pilot formats to introduce new approaches incrementally until mastered.

Credibility. The study is published by Duke University in a refereed journal for English pedagogy. Author Sidler is director of writing studies at Auburn University and a researcher on computer-mediated composition. The study fulfills conceptual framework considerations for specific pedagogies, in particular the assumptions, worldview, and pedagogical viewpoints of

faculty members who may be conducting instruction in the humanities; it also satisfies most evaluation and all quality criteria for inclusion. The study lacks a description of quality standards. Hints of grounded institutional standards appear in subject comments related to faculty training in technology-rich institutions supporting large faculties in online instruction (At one such institution, $n=1,200$). Such support systems to distribute instructional and design assistance “across multiple humanities disciplines” (p. 473) are necessarily systematized via course software, and standardized in the institution for consistency (p. 472). One interpretation of the fact that these methods are not presented as standardization may be an intent to focus on the trainer-faculty relationship as one which frees faculty to accomplish important pedagogical goals rather than to constrain to formats, and yet the discussion implies the imperative of a standard applied to create enhanced service systems for faculty.

Teemant, A. (2005). Evaluating socio-cultural pedagogy in a distance teacher education program. *Teacher Education Quarterly*, 32(3), 49-62. Retrieved from:
<http://www.csupomona.edu/~dolce/resources.shtml>

Teemant (2005) notes the challenge inherent in providing relevant context for socio-cultural teacher preparation, given that “most practicing teachers have little systematic education or experience with socio-cultural theory or pedagogy” (p. 49). In this regard, relying on the practicum or student teaching to infuse social justice concepts is not adequate preparation to cultivate diversity-sensitive, effective practitioners. Her research considers how an online delivery system might remediate this conflict.

A longitudinal, layered program evaluation of BYU’s bilingual//English as a second language endorsement program online documents “the quality and impact of the program’s socio-cultural design on participants’ thinking and practice” (p. 50). To address features sometimes critiqued in online settings such as “student isolation, transmission of content through lecture, and limited student-teacher interaction” (p. 51), BYU program features include “social interaction, assistance, and situated performance” (p. 51). One instructional year of qualitative and quantitative data from 206 pre-service and 508 in-service participants is evaluated, along with data from 15 in-service facilitators. Data sources include course evaluation data; focus-group facilitator feedback from same courses; pre-post learning surveys from one large course; portfolio self-assessments; and a follow-up investigation of one cohort (n=26) of completers.

Participants report understanding theory in practice, note the effective developmental sequencing of courses in skills- and concepts-building, and note group work and peer assistance as beneficial. Assignments, materials, and course delivery system all receive positive evaluation

in student satisfaction surveys; in the pilot sequence, course management was not yet fine-tuned, with reports of heavy workload, not enough lead time in posting assignments for effective time management. Vocabulary overload and content confusions due to non-linear organization on CD-ROM materials are also critiqued in pilot cohort surveys.

Portfolio reflections include (listed by most to least frequency) reports of “(a) using assessment to improve instruction; (b) knowing students as individuals; (c) pre-planning learning goals and assessments; (d) becoming student advocates; (e) using research-based practices; (f) creating opportunities to collaborate; (g) creating safe learning environments; (h) raising expectations and standards for learning; (i) focusing on cognitively challenging curriculum; (j) understanding educational policy; and (k) reflecting on or improving teaching practice” (p. 56). Raised expectations for student learning and increased instances of seeking out collaboration and communication with other building teachers who share the ESL students in other contexts are among the highly productive outcomes of student learning.

Recommendations include simplification or revision of program manuals and CD-ROM case studies. A key finding affirms partnerships teaming university professors with school district facilitators to effectively situate the learning context for assignments and materials in course design (p. 59). The BYU-ESL online program “demonstrated that when teachers in a single cohort from the same schools engaged in ESL teacher preparation, they developed shared goals for student learning and for their school communities” (p. 61).

Credibility. At time of publication, the author was assistant professor of teacher education at Brigham Young University. Published in a refereed journal for teacher education, the study satisfies all quality criteria and all criteria for evaluation of pedagogically specific

approaches to online course development and evaluation. The study descriptions are rich in detail of instructional activities as grounded in the conceptual framework of social justice pedagogy. For instructors unfamiliar with online tools, more detail of course processes would improve this description as a model.

Ward, M., Peters, G., & Shelley, K. (2010). Student and faculty perceptions of the quality of online learning experiences. *International Review of Research in Open and Distance Learning, 11*(3), 58-77. Retrieved from <http://www.irrodl.org/index.php/irrodl/article/view/867/1611>

Summary. Ward et al. (2010) present an evaluation of synchronous interactive online instruction (SIOI) through two assessments: (a) a qualitative sample of faculty perceptions of the quality of instruction after implementing SIOI; and (b) a quantitative survey of student perceptions regarding quality of SIOI.

The authors present a theoretical research base for the pedagogical requirements of high quality, sufficiently engaging interactions, both those among students and with faculty as they engage in the substantive dialogic process of meaning making. Authors also acknowledge the challenge in creating learning activities that produce discourse that satisfies a constructivist paradigm; they point out that “only certain dimensions of interaction are significantly related to higher achievement” (p. 61); interactions linked to insight, analysis, or deepened commitment to instructional activity are of value, while sharing mere observations are not. To explore the value of synchronous online instruction, researchers evaluate faculty and student perceptions of the effectiveness of the tools in comparison with asynchronous or face-to-face instruction.

There is some irony in that the study’s authors quote Heidegger’s (1962) interpretation (p. 63) of Kantian philosophy (“Das Ding an sich”, the thing in itself) in describing a phenomenological approach to methodology, for the study is itself an example of the difficulty the case posits as a reason for the study. Interaction within a complex pedagogy is very difficult to parse and to evaluate, particularly that of studies in professional practice in a “complex

learning situation integrating content across multiple disciplines” (p. 59). The theoretical framework of constructivism affords several designs for measure to capture some of the complexity, as authors note (p. 59-61). Yet both instruments of the study examine perceptions that are not anchored to those qualities of complexity represented in the framework, which possibly relegates the responses to that of personal observation or preference—something the foregoing discussion of requirements of high quality interactivity deem insufficient.

The data are important quality information for addressing concerns of faculty or students related to issues such as the ease of participating, or reliability of technical support. However, instructors exploring synchronous interactive online instruction (SIOI) for its potential to support the pedagogical framework requirement for substantive and empowering engagement will not find the evidence in the study, which reports the evocative possibilities raised by one program’s preferences for synchronous communications. Authors critique asynchronous methods as lacking sufficient relevant engagement or meaningful interactivity (p. 60) without exploring a controlled comparison on like activities; synchronous online pedagogy is also compared with face-to-face instruction without identifying the situated learning indicators for the face-to-face assessments.

Credibility. Ward is an associate professor of educational leadership at the University of Southern Mississippi and former State Superintendent of the Public Schools of North Carolina, as well as past president of the Council of Chief State School Officers. He is a member of the National Assessment Governing Board, which oversees the administration of the National Assessment of Education Progress. Both Peters and Shelley are professors and educational researchers at the University of Southern Mississippi. The study, published in an international refereed journal on research in open and distance learning, satisfies quality guidelines and

evaluation criteria for literature examining online course development or quality within a conceptual framework. Though the data do not completely support the conceptual framework and are instead anchored to Chickering and Gamson's (1987) seven principles for good practice in undergraduate education, it is included on the merit of a discussion of the need to attend to the subtleties of interaction when designing online activities in specific pedagogies.

Conclusions

This scholarly bibliography presents and summarizes 30 peer-reviewed studies representing an overview of faculty-centered online higher education course development models that demonstrate or support standards for quality. Patterns among the recommended procedures and processes of these studies reveal a body of common practices concerning applied standards in online course development. While many of these recommended practices can be found in literature of the leading models for quality assurance policy (see Discussion of named standards below), the objective of this annotated bibliography is to examine case studies conducted within academic institutions to determine in application if, and how, quality standards for online course development address faculty concerns regarding successful pedagogy and professional development for online teaching. Specifically, the goal is to identify literature that examines online course development models that incorporate at least one of the following three key aspects: (a) standards-driven faculty development for online instruction; (b) faculty perception of the fit of the standards-driven online course model; and (c) effects of uniform online delivery on quality.

Faculty engagement is shown to be the single most important arbiter of quality assurance in online instruction as reflected in the literature of this 30-study bibliography. Faculty engagement drives a conceptual framework to be implemented in online instruction; faculty engagement adopts and socially rewards the process of professional development; and faculty engagement structures the selection and enculturation of a set of quality standards and processes for online course development and peer review that is both durable and compatible with the curricular priorities of the institution and department.

The function of standards for course development in relationship to faculty engagement is one of opportunity; the discourse and deliberation required to accomplish any of the steps of selection, implementation, development, or institutional valuing provide a means for meaningful reflection on and improvement in one's own professional practices. Through a process of self-directed appraisal, faculty can examine the potential fit between a standards-driven online course model for instruction and the pedagogy or curriculum they utilize by asking themselves a set of questions (see Table 4). In this regard, standards for online course development offer a neutral point of discussion for transforming pedagogy (Chao, 2010; Villar & Alegre, 2006). The potential for self-directed appraisal in developing instruction to align to a set of best practice guidelines supports notions of academic freedom, inquiry, and constructivist, dynamic, authentic, learner-centered pedagogy as benchmark features of high quality instruction recommended across all named standards in the studies (Moore, 2005; Puziferro & Shelton, 2008; Seok, 2007; Shelton, 2010; Shelton 2011).

Table 4

Self-directed Online Pedagogy Appraisal

Question	Sample Response
<i>How do I provide prompt feedback?</i>	Assignment feedback schedule is posted in the syllabus; I respond with group feedback on general discussion performance within X days, team assignment feedback within X days, and individual assignments within X days.
<i>How have I given adequately detailed expectation for performance or rubric for assessments?</i>	A scaled assessment rubric is provided for written assignments, and individual grading includes this rubric.
<i>How have I reflected millennial student</i>	I encourage use and critique of social media as a cultural experience as well as conveyance of

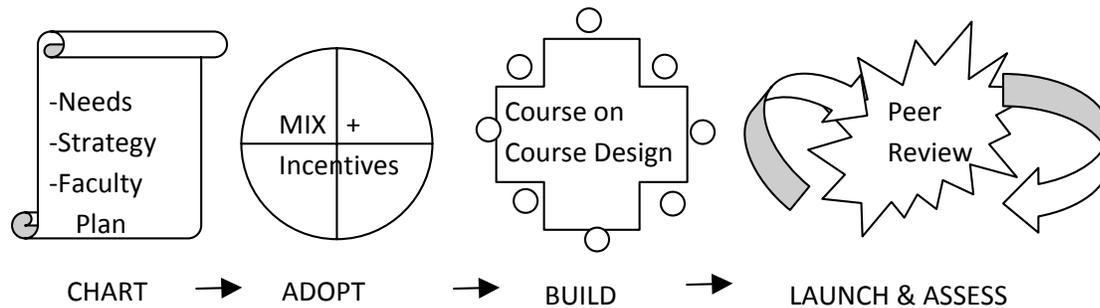
<i>learning preferences?</i>	communication; I work with current media and offer examples of its use in cultural, social, political, scientific discourse; I provide at least one assignment that encourages an applied fabrication of course content with students' own preferred media of expression.
<i>How do my instructional activities show value for all diverse learners' needs or requirements?</i>	I have tested software and web based activities for W3C compliance for accessibility, but I declare a responsibility to provide accommodation; I post my policies for providing alternative format assignments. I state the required participation rules of my class spaces which do not allow racist, sexist, homophobic, or ageist labels. I include discussion of digital divide issues. I ask for student feedback about socio-cultural assumptions in the coursework; I include opportunities for students to declare their context and cultural experiences. I provide assistance or direction to supports for second language students.
<i>How do I serve the disciplinary requirements with skills-and evidence-based activities to demonstrate student learning?</i>	I create assignments with demonstration or field-based "action" components that require applied practice and synthesis evaluation of their own learning in addition to competencies or knowledge based assessments. I consult models such as Bennett (1993); Scalise & Gifford (2006); Koehler & Mishra (2009); or Ally (2004) to assess my teaching, learning, and assessment activities against constructs for pertinence, validity, value, or constraint in online formats.
<i>How are my teaching practices person-centered in the uses of technology?</i>	I address and respond to individuals within general discussion by name, and indicate relevant contributions by individuals and teams; I provide personal introduction and personal perspectives; these identify my worldview, and I offer qualification for this worldview in the orientation of the course; I create opportunities for moderated dialog, exchange, and cross-talk.
<i>How have I pursued professional development</i>	I participated in course development boot

<i>in technologies and effective instructional design and assessment?</i>	camp; I have completed two workshops on building assessment tools.
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In addition to the personal inquiry involved in transforming one's pedagogy for online delivery, faculty engagement is necessary to create and carry out a relevant campus or departmental process. According to case studies in the bibliography, faculty engagement is dependent upon a perceived value that the institution designates for all the activities necessary to support interrelated features that scaffold quality in online instruction. This value is realized in support for planning and includes the features of accountability, budget support, and realistic time phasing in the context of faculty's current responsibilities. Thus, academic departments considering standards-driven online program or coursework development should design a four-phase plan. These four phases frame a set of best online practices of the last decade as they apply to faculty and course development in the more than 60 higher education institutions, two state systems of higher education, and one national accreditation body represented in the literature for this annotated bibliography.

Phase one: Chart involves an institutional needs assessment and explicitly shared institutional-level strategy for online competition, infrastructure to support delivery, and the planned support of faculty's instructional design needs. *Phase two: Adopt* involves department level review of the mix of potentially competitive course offerings. Phase two also includes identification of specific institutional incentives for faculty development, course design, and delivery. *Phase three: Build* involves building faculty skills and course fabrication through concurrent faculty and course development according to standards for instructional design. *Phase four: Launch & Assess* involves periodic quality assessment and peer review.

Figure 1. Four Phases of Institutional Implementation for Online Instruction



1. Chart: Resource and needs assessment, and long term, explicit strategic investment institutional plan for online infrastructure and faculty development
2. Adopt: Collegial process selects competitive online mix of course offerings, integrates with department curriculum and gains institutional approvals; department seeks institutional incentives for faculty course development and delivery
3. Build: Team-based faculty development concurrent with course development, supported by instructional design and technology team. Requires course online with homework.
4. Launch and Assess: Plan, develop instruments and process, and apply periodic departmental assessment for program quality, student satisfaction and learning, and peer review of courses.

The four-phase process is a generalized pattern derived from studies included the bibliography, and reflects a typical academic course adoption sequence with the exceptions of incentives in phase two which may vary to some degree by institution. In phase three, the faculty development course on course design includes a comprehensive assignment load over of no less than 4 weeks, and up to 14 weeks, which must be clarified as an expectation for participation. Peer review in phase four is also recommended in online instruction; review can be undertaken with national quality assessment systems or conducted in-house.

The four phases of implementation also reflect best practices identified in leading models for evaluating quality of online programs (Shelton, 2011). The following sections offer detail for

these specific standards or models; and the particular steps, guidelines, and features of online course development that assure quality; faculty development approaches; and approaches to consider for specific pedagogies as included in the annotated case studies.

In summary, the main question under consideration in this annotated bibliography is: *Why should an accredited institution of higher education apply a standards-driven model to online course development?* The recommendations of case studies and synthesis of principles and process patterns suggest that standards-driven online course development and instruction is of pre-eminent value because it represents (a) the research evidence-base as applied to instructional practices, which is a unique value proposition of higher education institutions; (b) an opportunity for individual faculty to exercise academic autonomy and self-reflective practice as they apply standards to their pedagogy; (c) a competitive business tactic for communicating program quality and currency to accrediting bodies and student consumers; and (d) an explicit method of valuing the singular worth of faculty expertise through investment in the process of standards-driven instructional design and faculty development. As numerous sources for training and instruction become increasingly available in the private sector, ensuring the engagement of faculty in standards-driven course development, and contributing planned, phased, communicated, and supported processes for both course and faculty development will secure higher education institutions' competitive position in the global marketplace of online instruction.

Discussion of Named Standards

Shelton (2011) identifies and summarizes the leading models for evaluating quality of online education programs (see Table 5); the models included are in some cases standards,

benchmarks, or models of application; others noted are researcher-synthesis of best practices or analysis of model standards. According to Shelton (2011), themes of institutional support and commitment are common to 10 of these models (Shelton, 2011, p. 10). Concern specific to pedagogy is second most emphasized in leading models, with faculty support third in emphasis.

Table 5

Summary of Leading Models For Standards in Online Instruction (adapted from Shelton, 2011, p. 3).

Author and Year	Title of the Model	Key Elements
Institute for Higher Education Policy (IHEP), authors Merisotis, J., & Phipps, R., 2000	Benchmarks for Success in Internet Based Education	Twenty-four benchmarks or attributes of quality in seven themes: institutional support; course development; teaching and learning; course structure; student support; faculty support, and evaluation and assessment
Bates, 2000	ACTIONS Model of Quality	ACTIONS = Access and flexibility; Costs; Teaching and learning; Interactivity and user friendliness; Organizational issues; Novelty, and Speed
Western Cooperative for Educational Telecommunications (WCET), 2001	Best Practices for Electronically Offered Degree and Certificate Programs	Five categories for quality evaluation used by accreditation bodies: curriculum and instruction; institutional context and commitment; faculty support; student support; and evaluation and assessment
		Dimensions used for evaluating

Khan, B., 2001	Eight Dimensions of e-Learning Framework	quality: <i>institutional</i> (administrative and student academic services); <i>management</i> (maintenance and distribution); <i>technological</i> (infrastructure planning hardware and software); <i>pedagogical</i> (instructional design); <i>ethical</i> (socio-cultural and political context, diversity, access); <i>interface design</i> (look and feel, usability); <i>resource support</i> (online support and resources); <i>evaluation</i> (assessment of learners, evaluation of instruction; evaluation of learning environment)
Frydenberg, J., 2002	Quality Standards in e-Learning	Nine themes of published quality standards in the U.S.: institutional and executive commitment; technological infrastructure; student services; instructional design and course development; instruction and instructors; program delivery; financial health; legal and regulatory compliance; and program evaluation
Sloan Consortium, 2002	Five Pillars of Quality	Learning effectiveness; student satisfaction; faculty satisfaction; scale; and access
Lee, J., & Dziuban, C., 2002	Quality Assurance Strategy	Five components to evaluate: administrative leadership and support; ongoing program concerns; web course development; student concerns; and faculty support

Lockhart, M., & Lacy, L., 2002	Assessment Model	Seven components to evaluate: institutional readiness and administration (budgets, priority and management); faculty services; instructional design/course usability; student readiness; student services; learning outcomes; and retention
Council for Higher Education Accreditation (CHEA), 2002	Accreditation and Quality Assurance Study	Survey questions in seven areas: institutional mission alignment with distance learning; organizational structure suitability to deliver; financial base to support; appropriate curricula and design support; faculty support and engagement; student support; student learning outcomes
Osika, E.R., 2004	Concentric Support Model	Seven themes: faculty support; student support; content support; course management system support; technology support; program support; and community support
Moore, M.G., & Kearsley, G., 2005	Assessment Recommendations	Administrative assessment of: number and quality of applications and enrollments; student achievement; student satisfaction; faculty satisfaction; program or institutional reputation; course materials
Haroff, P.A., & Valentine, T., 2006	Six-Factor Solution	Six dimensions identified in administrator surveys: quality of instruction; quality of

		administrative recognition; quality of advisement; quality of technical support; quality of advance information; and quality of course evaluation
Chaney et al., 2009	Quality Indicators	Teaching and learning effectiveness; student support; technology; course development/instructional design; faculty support; evaluation and assessment; and organizational /institutional impact

Comparison of Named Standards with Case Study Patterns

The research method designed for this bibliography incorporates an inductive approach (Creswell, 2009). To prepare the annotations, studies are examined for reference to named standards as well as common processes, principles, procedures, or recommended practices for standards-driven course development. The synthesis of patterns presented in the four phases of implementation above (see Figure 1), and the factors supporting faculty engagement (see Figure 2) are also compared with the high frequency themes in leading models described by Shelton (2011) (see Table 5).

Frequency of citations. The most frequently cited reference for online quality standards in literature included in this bibliography is IHEP's 24 benchmarks for success in Internet-based distance education. WCET (2001) is also a high-frequency reference for best practices in this bibliography, as is CHEA's Accreditation and Quality Assurance study (2002). (These titles, their authors, and references are not included in search terms.) Sloan Consortium's five Pillars of

Quality, and Quality Matters™ (QM) are key terms in the literature search for this bibliography related to quality assurance in online course or program development. Publications distributed by these entities or authored by their chief officers influenced selection and evaluation criteria for indicators to examine in literature recommending processes for designing standards-driven course development. Therefore, QM and Sloan Consortium are also highly represented in this bibliography as named and examined standards for guiding online programs in higher education. Frydenberg (2002) and Lee and Dziuban (2002) appear with frequency, and Chaney et al. (2009) is noted in literature after 2010.

Of the 30 case studies, only Shelton (2010) refers to each of the models listed above (Table 5, Shelton, 2011) but does not include them in case discussion. Similarly, Moore and Kearsley (2005) are mentioned in two studies without discussion. Five of the models are not discussed in literature in this bibliography.

Similarity of principles among case studies and named standards. Most of the models examined in this bibliography cite precedence in the same few named standards: IHEP, CHEA, or Sloan-C. This research finds great interest in the set of similar elements provided by Shelton (2011) (see Table 5).

While analysis in this annotated bibliography finds *faculty engagement* the chief principle in quality online, it is noteworthy that such engagement cannot be obtained without institutional support and commitment, relevant pedagogy, and means for faculty support or development (see Figure 2). These are the key principles identified in models analyzed by Shelton (2011).

Synthesis of Case Study Principles for Standards-driven Course Development

Discussion of standards-driven course development in the selected literature is generally associated with either a named standard (as in Table 5), or a grounded institutional standard as a considered criterion of selection for inclusion in the bibliography. Institutionally grounded standards are found in international studies (Chao, 2010; Lam & McNaught, 2006; Derntl & Motschnig-Pitrik, 2005; Eib & Miller, 2006; Green et al., 2010; Villar & Alegre, 2006 and 2008) and may represent government guidelines or benchmarks. Institutionally grounded standards also appear in the application of Total Quality Management (Aggerwahl et al., 2005) or other organizational learning or continuous improvement processes applied in higher education such as faculty-or department-led curriculum improvement initiatives; or institutional efforts to extend training and supports for quality instruction.

Key recommended process for quality, standards-driven course development.

Literature in the bibliography recommends *working from within academic processes* to select, approve, or adapt a set or combination of standards as a way to fit the tasks of implementation to goals and objectives within resources of an institution, rather than applying a model “out of the box” (Lewis et al., 2011; Xu & Morris, 2007). This is typically initiated with a needs assessment, which may take the form of a survey of faculty skills or objectives in learning online pedagogy or technologies.

Key recommended approach to quality, standards-driven course development.

Collegial faculty engagement signals the value of the activity. Lead faculty identification (either voluntary or appointed) or an advisory council for integration of online instruction is necessary if the impetus for online development does not originate within a department’s recruitment,

accreditation, or pedagogical strategy. Pilot study to prepare for funded personnel preparation or other research may add cultural value and enhance faculty participation (Villar & Alegre, 2008).

Key characteristics of quality, standards-driven course development. As described in studies included in the bibliography, key characteristics reflect:

- targeted faculty development in the use of teams to build and administer courses online
- standardization focused on learning patterns with detailed assessment rubrics
- faculty-driven pedagogy
- encouraged student engagement through alignment with millennial preferences for social media and action-oriented projects
- prompt and individualized feedback
- soft skills of teamwork with substantive dialog emphasized in student project discourse
- peer review and assessment

Synthesis of Processes for Faculty Development in Online Instruction

Faculty takes the leading role in team-based course development. A feature of studies devoted to standards-driven course development is the prominence of the role of faculty in implementing a standard in two aspects: (a) faculty leads pedagogical decision making in instructional design teams and (b) they can effectively communicate this structure to IT, design, and support staff through outlining a conceptual framework or the requirements of their specific pedagogy or discipline. In effect, the standards may ask for student teamwork to be demonstrated through joint projects; the faculty designates instructional objectives best suited to project work, and a process is discussed for pattern-mapping the disciplinary focus for pedagogy

to the quality standards and the sequencing of tasks and timelines for a course, giving preference to the worldviews and values inherent in the conceptual framework.

This centrality of faculty lead in the implementation of a standard has not been a feature of early discussion of quality assurance processes, but rather, the first focus has been on barriers to faculty participation at a more general level, particularly with regard to baseline technology skills and workload (Larreamendy-Joerns & Leinhardt, 2006; Stewart et al., 2010; Tallent-Runnels et al., 2006). With increasing numbers of studies moving away from barriers to adoption and retention in online instruction (Green et al., 2009), those addressing faculty development processes suggest that faculty requests institutions focus development in the use of tools to serve targeted instructional outcomes rather than abstract instruction in technologies (Georgina & Olson, 2007; Graham & Thomas, 2011; Marek, 2009; Orr et al., 2009). Further, while faculty development creates familiarity with the required tools, teams, and standards, it is insufficient to plan development processes without considering factors supporting the adoption of development (see Figure 2).

Course development modeled in a sequenced, online course. Methods most chosen by represented institutions implementing a faculty development process apply an identical online student experience, typically through a course of four to ten weeks in sequence. Weekly learning tasks are linked to the product development of a course faculty will be or currently are teaching. Based on the premise that development is most durable if faculty are able to apply a scientific inquiry related to their discipline or specific pedagogy, faculty development via concurrent modeling of course development is also considered most efficient, particularly if supported by a team of instructional designers and technology staff who assist and support the interpretation of the learning patterns with the technology tools.

Additional methods include (a) modular workshops; (b) development via continuous assessment of program quality; (c) development aligned to accreditation goals; and (d) peer-mentor projects tied to incentives. Variable implementations reflect varied contexts of culture, governance, and structures for delivery among higher education institutions. Given this variation, many models exist for adaptation and subsequent study. In schools and colleges of education, human development, social services, and community based health care, linking pilot study to co-development of school district personnel or community agency interfaces may provide an avenue to fund the improvement of teacher preparation or human services personnel for online communities of practice.

Three Aspects of the Conceptual Framework: Ways of Thinking, Ways of Working, Ways of Supporting Specific Pedagogies in Online Course Development

Online course development research addresses a broad range of disciplines. Literature in all three categories of study in this bibliography considers needs and approaches to pedagogy for

specific disciplines and subject matters, including: the humanities, sciences, mathematics, socio-critical pedagogies, continuing clinical and health professionals, teacher education, administrator licensure, engineering, computer science, business administration, social work, English speakers of other languages (ESOL), and educational leadership, and library science. The following aspects of online learning to be considered in course development satisfy the conceptual framework for the bibliography, as each indicates a *way of thinking* about the characteristics of a technology as they interact with pedagogy and content; *a way of working* that respects, preserves, or connotes the values and worldview of a specific pedagogy; or a *way of supporting* the requirements of specific pedagogies through uses of technology in online learning.

Online learning is socially mediated and person-centered. Through communications tools and the discourse of students with faculty and students with students, relational exchange is heightened in some aspects of online pedagogy over that of face-to-face formats. This quality *supports* requirements of many specific pedagogies, particularly as features of person-centered, individualized experience are realized through the personal mediums of screen technologies as compared with mass lecture experiences; asynchronous delivery in combination with real time modes also affords personal choice and engagement (Anderson & Dron, 2011; Derntl & Motschnig-Pitrik, 2005). Threaded discussion, chat, video-conferencing, audio or AV enhanced slides and streaming media prepared by either faculty or students satisfy unscripted interactivity requirements of most pedagogies (Iiyoshi et al., 2005; Schneider, 2010). In some cases, online methods exceed the reach of face to face methods in providing empowerment for under-represented student view points to achieve representation in formats with required “airtime” for participation points; in other cases, the online distribution reaches and benefits from diversity

through extending to multiple communities or asynchronously to nontraditional students or those who are place-bound, working, parenting, or military service personnel.

Of note, service learning and teacher preparation pedagogies demonstrate that there is no inherent loss of person-centered, human-human communication mediated by computing; distributed instruction and communication allows site-based experiential learning to occur in real time and in face-to-face settings, and in wider reach. Online communications facilitates the supervision, review, and evaluation of site or field activities. The measures of effective learning and accountability are further strengthened by the ability to “loop in” site supervisors within the communications media, projects, or community of practice shared knowledge. With intentional framing to situated learning context, online delivery can thus exceed face-to-face formats for practitioner and community of learner experiences appropriate for pre-service educators (Guthrie & McCracken, 2010; Teemant, 2005).

Specific pedagogy does not preclude team based division of labor in course development. While patterned approaches are not pedagogically neutral (Derntl & Motschnig-Pitrik, 2005; Schneider, 2010), collaborative course development can also be an effective *way of working* to preserve and communicate the content areas where the specific pedagogy is in conflict with assumptions of analysis and patterning that take place in team development of online coursework. To achieve this, the conceptual framework is made explicit, first to the course development team, and then to students. For example, if early childhood intervention services professionals benefit most from instructional objectives which ask them to model a community-based parent education system for dissemination and services outreach, and the faculty determines that the key evaluation criteria will be sustainability, cost to provider, or

accessibility, instructional design staff can recommend tools to fabricate an experience-based assignment that models and measures those features. In this case, the process of deliberation and choosing the design for learning and assessment can also be shared as a part of the assignment, with student critique of the usefulness of the task or the tools provided included in required responses or products, to identify contextual, critical awareness of the functions, assumptions, or systems at work in social learning aspects of the assignment.

In another example, if counseling clinical skills are best developed with modeled examples in demonstrated client-clinician sessions, and video of the modeled examples is available, instructional design staff may recommend a simplified video process for replicating a video simulation created by students, led by the faculty's identification of the objectives to be achieved. Again, building in features of explicit sharing of the team process involved in the design and selection of materials and tools helps students build contextualized, modeled process knowledge. Articulating questions, such as *Why would course designers recommend an open-source video editing tool for this assignment?* or asking for student reflection on why this would be possibly a concern for a human-centered paradigm such as counseling; or, asking for student critique of a video model versus a live staged demonstration from point of view of the liberation pedagogy of Paulo Friere—these help provide awareness that, even in a way of working that supports a production activity like videography, collaborative approaches include discourse, dialog, and choice that weighs the values behind various uses for tools of technology.

Strategies and tasks of online pedagogy are distinct from the delivery mechanisms.

It is possible to over-generalize uses of e-learning media in web-based formats, and in generating standardized processes for building courseware, instructors must not overlook learning patterns

that “support deep, persistent learning” (Derntl & Motschnig-Pitrik, 2005). Attention must be given to the cognitive and behavioral processes engaged in the use of complex instruments in non-linear environments (Koehler & Mishra, 2009; Lam & McNaught, 2006). Considering the instructional activity as it satisfies a conceptual framework for learning designs assists in preventing over-generalized assignments which flatten the pedagogical impact (Lam & McNaught, 2006); similarly, taking care not to confuse the learning activity with the tool is paramount. For example, Koehler and Mishra (2009) discuss the manner in which technologies become “fixed” in our assumptions about their use, and present the whiteboard (prior to the development of SMART Board™ technology) as an example of a tool which has a typically fixed position in a classroom; and yet in advertising contexts, in programming, design, and in other forms of engineering, the placements and uses of a whiteboard diverge. “Teachers need to reject functional fixedness (Duncker, 1945 in Koehler & Mishra) and develop skills to look beyond most common uses for technologies, reconfiguring them for customized pedagogical purposes” (Koehler & Mishra, 2009). In similar fashion, online instructors tend to maintain a perspective that business software is designed for productive business uses; social media is entertainment-based; instruction utilizing these media must assess them critically for their affects on “teaching architecture” (Schank & Cleary, 1995, in Lam & McNaught, 2006).

This *way of thinking* about technology as it represents both conduit and staging mechanism for pedagogy is most easily observed in comparison across the studies specifying a specific pedagogical approach to a program's disciplinary objectives. Though some general principles of online learning apply regarding differences of synchronicity or asynchronous gains and losses, nevertheless, disparate tools such as a learning management system (Blackboard™, WebCT™, etc.), or a web site displaying video clips, or a social media interface might be employed to affect similar learning objectives; or, in contrast, one base level tool, such as a website, might frame disparate learning activities addressing varying knowledge and cognitive process dimensions. This is demonstrated in the case studies of Lam & McNaught (2006) using one web-delivery interface to serve multimedia supporting three completely different learning objectives functioning in different spectra of metacognition and behavior including: (a) simulations in computing principles; (b) audio cases for English language modeling; and (c) student developed video in public health outreach. This example from the larger e3Learning Project (<http://e3learning.edc.polyu.edu.hk/description.htm>) is just one comparison of uses of a media tool that is employed differently across a learning taxonomy (Bloom, 1956, in Lam & McNaught, 2006). The variety in the project research extends to evaluation of more than 70 online course websites in three Chinese universities, including disciplines in business, law, engineering, health professional education, humanities, art, Deaf culture, writing, phonetics,

phonology, social sciences, molecular biology, behavior, materials science, physiology, microbiology, chemistry, and experimental biology.

Koehler and Mishra (2009) maintain that instructional design online for each of these disciplines requires a “dynamic equilibrium” which “inverts the conventional perspective that pedagogical goals and technologies are derived from content area curricula” (p. 7), but persistently evaluates technology in relationship to core pedagogical issues (Koehler & Mishra, 2009, p. 7). Thus, Koehler and Mishra elaborate a technology, pedagogy, and content knowledge framework to assist with the multiple dimensions involved in evaluating a technology use in pedagogy. They state:

There is no single technological solution that applies for every teacher, every course, or every view of teaching. Rather, solutions lie in the ability of a teacher to flexibly navigate the spaces defined by the three elements of content, pedagogy, and technology and the complex interactions among these elements in specific contexts. (Koehler & Mishra, 2009, p. 7)

The bibliography focuses on faculty-centered standards-driven course development, recognizing the interdependence of faculty engagement with all phases of implementation in quality online programs. There is also a similar balance in tension required among: (a) creating an institutional process for evaluating the strategic value, mix, and cost for support of online offerings; (b) selecting a standard or generating an institutional standard for quality online; and (c) preparing faculty for course development and peer review of online courses. Just as no one philosophy of learning is used exclusively to design online learning materials (Ally, 2004), there are additional institutional factors that interact with the processes and principles supporting

quality online course development as recommended in the studies in this bibliography.

Assessing relationships of the online curriculum activities with the larger institutional mission and delivery system (Elloumi, 2004, p. 78) may help to demonstrate the case for engagement in a standards-driven course development model.

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