Educational Innovation:
Extending UW-Madison's Reach
through Quality Online
Post-Baccalaureate Programs

Executive Summary

The purpose of this document is to continue the conversation around online teaching and learning and to ground this discussion in the research findings. This document is not intended to have all the answers nor is it a prescriptive since each school and college will have varied approaches to online program and course development. However, principles to guide quality online program development are proposed for consideration. To support these principles, a brief research overview and summary of UW-Madison processes to build quality online courses and programs are provided. These summaries are organized by the internationally recognized and research-based Sloan-Consortium (Sloan-C) quality framework: (1) Learning Effectiveness, (2) Student Satisfaction, 3) Faculty Satisfaction, and (4) Access and Scale. This document also shares how units, divisions, schools, and colleges are working together to support faculty and instructional academic staff to be successful with online teaching and learning and provides a few examples and success stories.

As more post-baccalaureate students seek choice on how and where they learn and as education evolves and grows richer through new technologies, online education is changing the landscape of higher education. UW-Madison is uniquely positioned to extend its reach and reputation by offering quality online post-baccalaureate programs. We have internationally recognized faculty that are planning online courses and programs to share their expertise with graduate students around the world, and non-traditional students from around the globe and within sectors of the economy who want to further their education but are unable to be physically present on campus in the "traditional" mode. Quality online post-baccalaureate programs provide opportunities to extend our reach to new post-traditional audiences to provide educational opportunities that are not part of our usual program array. Well-designed and facilitated online education provides the opportunity to re-think teaching and learning to become even more learner-centered, collaborative, and interactive. Through Educational Innovation (EI) initiatives, collaborative efforts are taking place across the university to ensure quality through faculty development, student preparation, and research-based design and teaching strategies. In addition, systematic processes are in place or are being developed to effectively develop, deliver, and evaluate high quality, reusable, and scalable online courses and programs.

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Appendices available at: http://continuingstudies.wisc.edu/innovation/resources.html

Course Delivery Format Definitions

Distance education is defined as: "institution-based, formal education where the learning group is separated, and where interactive telecommunications systems are used to connect learners, resources, and instructors."[1] Interaction can occur at a particular time (synchronous) or on demand of the learner (asynchronous). The telecommunications systems can include the internet (online), video, web conferencing and other methods to connect an instructor with learners. This report focuses mainly, but not exclusively, on online learning.

Course delivery formats describe the way courses are delivered to students via traditional, Web-facilitated, blended/hybrid, and online formats. Table 1 defines these formats based on Sloan-C criteria.

Table 1
COMPARISON OF COURSE DELIVERY FORMATS

Proportion of Content Delivered Online (%)	Type of Course	Typical Description
0	Traditional	Course with no online technology used. Delivers content in writing or orally.
1 to 29	Web-Facilitated	Course that uses web-based technology to facilitate what is essentially a face-to-face course. Uses a course management system (CMS) or web pages to post the syllabus and assignments, for example.
30 to 79	Blended/Hybrid	Course that blends online and face-to-face delivery. Delivers a substantial proportion of the content online, typically uses online discussions, and typically has some face-to-face meetings.
80+	Online	Course that delivers most or all of the content online. Typically has no face-to-face meetings.

Source: Data from Allen and Seaman (2013).
[1] Schlosser and Simonson. *Distance Education,* 1.

I. Educational Innovation: Principles Guiding Quality Online Education

As more post-baccalaureate students seek choice on how and where they learn and as education benefits from new technologies, online education is changing the landscape of higher education. The following principles for quality online education are proposed to guide the campus community as we progress through this evolutionary time in higher education. These online principles are intended to be complementary to the Educational Innovation Program Development and Implementation Principles (Appendix A), which open with this bedrock premise:

> *The campus is committed to continuing what is best about "traditional" education, including meaningful intellectual encounters, both inside and outside the classroom, between talented, committed faculty and qualified learners. The campus is also committed to supporting educational innovations, enhancing transformative learning, investigating the use of new pedagogies, and engaging new audiences.*

In addition, the Educational Innovation (EI) principles emphasize:

> *All EI-related programs are expected to be thoroughly evaluated within the originating departments/schools/colleges, taking into consideration both the new program and its influence on existing programs and units. **All proposed programs must preserve academic rigor and institutional** integrity.*

The Higher Learning Commission developed *Guidelines for the Evaluation of Distance Education (On-line Learning)* have been developed by the Council of Regional Accrediting Commissions (C-RAC) to assist institutions in planning distance education and to provide an assessment framework for institutions already involved in distance education and for evaluation teams[2] (Appendix B). The *Guidelines* comprise nine hallmarks of quality for distance education.

1. On-line learning is appropriate to the institution's mission and purposes.
2. The institution's plans for developing, sustaining and, if appropriate, expanding on-line learning offerings are integrated into its regular planning and evaluation processes.
3. On-line learning is incorporated into the institution's systems of governance and academic oversight.
4. Curricula for the institution's on-line learning offerings are coherent, cohesive, and comparable in academic rigor to programs offered in traditional instructional formats.
5. The institution evaluates the effectiveness of its on-line learning offerings, including the extent to which the on-line learning goals are achieved, and uses the results of its evaluations to enhance the attainment of the goals.
6. Faculty responsible for delivering the on-line learning curricula and evaluating the students' success in achieving the on-line learning goals are appropriately qualified and effectively supported.
7. The institution provides effective student and academic services to support students enrolled in online learning offerings.
8. The institution provides sufficient resources to support and, if appropriate, expand its on-line learning offerings.
9. The institution assures the integrity of its on-line learning offerings.[3]

Recommended Principles to Guide Online Education at UW-Madison:

- UW-Madison is committed to maintaining its core academic values, while **expanding access on a global scale** to meet the growing demand for lifelong education. UW-Madison's focus for online

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[2] Council of Regional Accrediting Commissions, "Guidelines for the Evaluation of Distance Education (On-Line Learning."

[3] Institutions are encouraged to consult "Best Practice Strategies to Promote Academic Integrity in Online Education," prepared by WCET and available at http://www.wiche.edu/pub/13441

education development at the program level is on post-baccalaureate programs (master's and graduate degree programs, and post-baccalaureate certificates). It is at these levels that top research universities have a unique and meaningful role to play in increasing access to education while maintaining quality. This role is multifaceted and includes sharing knowledge created from scholarly research and acts of discovery and innovation that contribute to society, the professions, and humanity at large. As technology helps to remove constraints of time and place, students can have **access to knowledge while working and living anywhere in the world,** as they learn new skills, and move from obsolete industries and economies to new ones.

- UW-Madison's online programs must **preserve academic rigor, integrity, and excellence**. Technology must be used to facilitate, broaden, and enhance the intellectual encounters between and among faculty and students, recognizing the difference between access to data and wisdom. School/College curriculum committees will directly assess the rigor of such programs, as they do with traditional on-campus programs.

- With **teaching and learning at the center**, the design principles for online post-baccalaureate programs will be student-centered and grounded in the research of program faculty and emerging disciplines. The most important factors in student learning are the skills of the instructor and the structuring and instructional design of the learning experience. Program and course design will have clearly identified program outcomes and learning objectives, specific to each program, and effective methods of assessment. UW-Madison is committed to provide the resources and development that faculty and students need to be successful in this new environment.

- An explicit goal of UW-Madison's online post-baccalaureate programs is to **prepare students to thrive and advance in a digitally-connected global economy**. Critical knowledge realms include evaluating and synthesizing and making meaning of vast amounts of content and data that is now available online. Post-baccalaureate students develop skills in collaboration and digital communication by creating and participating in online communities of practice. Online collaboration, when well-planned and facilitated, creates a positive and engaging learning environment that sustains student success and completion of post-baccalaureate programs.

- At this post-baccalaureate level, **technology can break down the barriers** between the academy and the economies, industries, and professions we are seeking to serve and advance. Academic curricula are strengthened by the infusion of real-life experiences and the posing of real-world problems to solve in collaboration with university and industry experts. Research is strengthened by enhancing connections to industries and professions where our world-class research is applied.

- **Online degree programs will use UW-Madison existing admissions standards**. Our goal is to ensure that those enrolling in an online degree have the requisite interest, experience, and qualifications to ensure their success. Every remote student seeking to pursue a degree program must meet standard admissions criteria.

UW-Madison has been a pioneer in distance education since the early days of public radio and TV and has a long and distinguished record in the development of high-quality post-baccalaureate distance program development.[4] This has been achieved through a long-standing commitment to holding online programs to the same standards and processes as any other UW-Madison degree.

As we look to the future, an article in the January 24, 2012 *Chronicle of Higher Education*[5] provides insight. The Chronicle editor reflected: "The whole notion of how students acquire information, toggling between devices and sources and working collaboratively, has transformed the learning process. The question now is how to build an educational system around this new information ecosystem." Aaron Brower, UW-Madison's former Vice Chancellor for Teaching and Learning, was interviewed for this article and summarized the opportunities well: "***It gives us the chance to put learning outcomes first and provides the opportunity for individual instruction.***"

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[4] For the second year in a row, the University of Wisconsin-Madison is ranked by U.S. News & World Report as one of the top ten schools offering high-quality online graduate engineering programs. See "Best Online Graduate Engineering Programs," Online Education, *US News and World Report*.

[5] Selingo, "Higher Ed's Biggest Problem: What's It For?"

II. Focus on Quality Teaching and Learning

UW-Madison is committed to ensuring that online courses and programs reflect quality teaching and learning. To understand how to best achieve this, it is useful to first look at models that work well in the traditional face-to-face learning environments.

There are a multitude of models for effective teaching and learning. One good model for effective learning environments is *How People Learn* from the National Research Council's Commission on Behavioral and Social Sciences and Education.[6] Effective learning environments are **learner centered, knowledge centered, assessment centered** (Figure 1 inner circles)**, and community centered** (Figure 1 outer circle). Overlaid on that premise are practices which increase student satisfaction and learning: Chickering and Gamson's "Seven Principles for Good Practice in Undergraduate Education."[7]
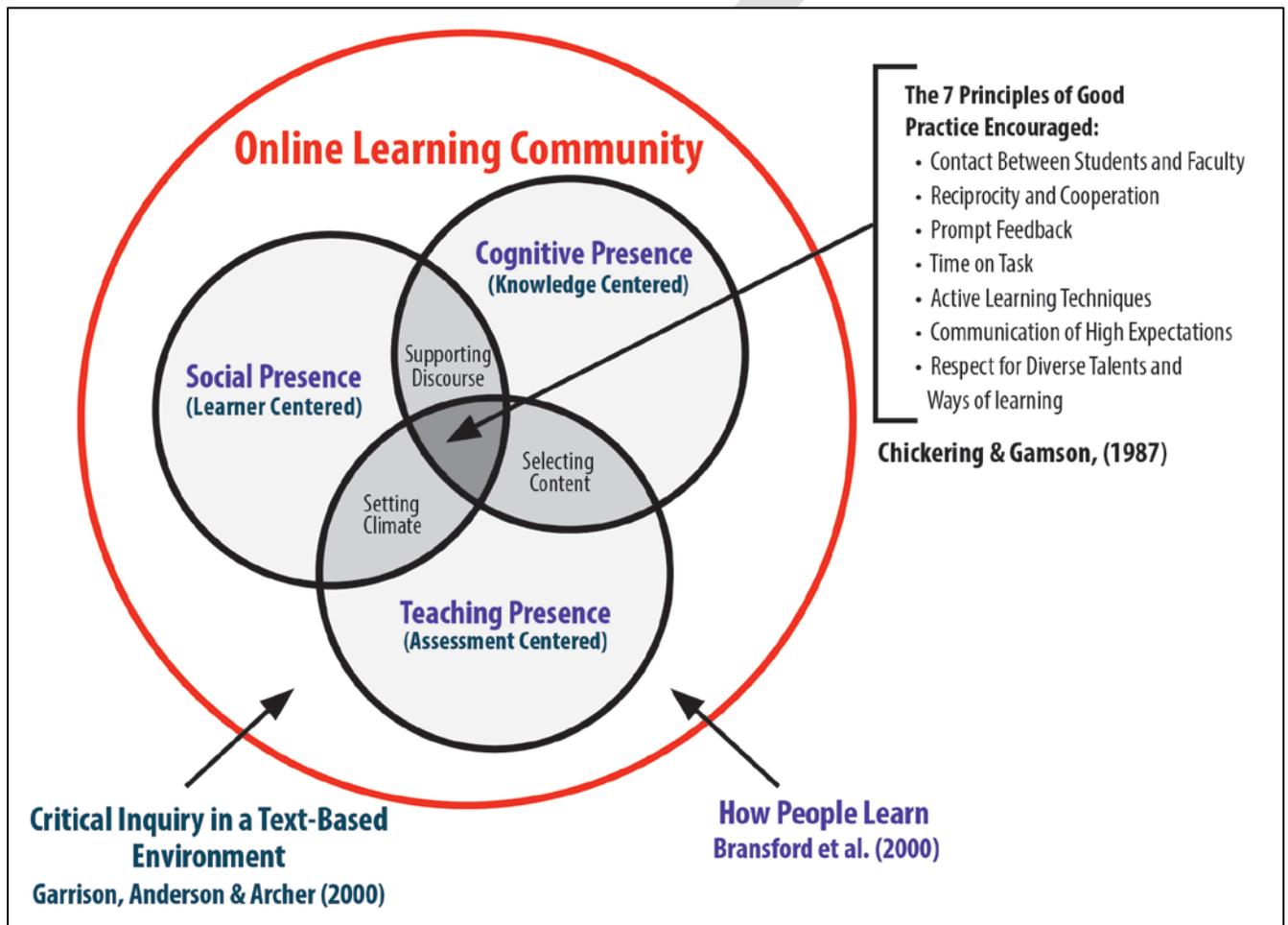
Online Learning Community

Cognitive Presence
(Knowledge Centered)

Social Presence
(Learner Centered)

Supporting Discourse

Selecting Content

Setting Climate

Teaching Presence
(Assessment Centered)

The 7 Principles of Good Practice Encouraged:
- Contact Between Students and Faculty
- Reciprocity and Cooperation
- Prompt Feedback
- Time on Task
- Active Learning Techniques
- Communication of High Expectations
- Respect for Diverse Talents and Ways of learning

Chickering & Gamson, (1987)

Critical Inquiry in a Text-Based Environment
Garrison, Anderson & Archer (2000)

How People Learn
Bransford et al. (2000)

Figure 1: Framework for quality online learning environments. Modified from Shea, Pickett, & Pelz (2003, p.78).

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[6] Bransford, Brown, and Cocking, eds., *How People Learn: Brain, Mind, Experience and School.*
[7] Chickering and Gamson, "Seven Principles for Good Practice in Undergraduate Education."

Yet there are differences when the learning environment is online. Faculty find they need to focus less on lectures and more on collaborative and student-centered learning. Garrison, Anderson, and Archer created a model of research-based indicators of quality education at a distance to explain how to facilitate higher-order learning in computer-mediated environments.

This model (shown in Figure 1) includes **cognitive presence**, **teaching presence,** and **social presence**.[8]
- **Cognitive presence** is the extent students are able to construct and confirm meaning from the course content through sustained discourse.
- **Teaching presence** is the design, facilitation, and direction of cognitive and social processes to help students achieve educationally worthwhile learning outcomes. Teaching presence involves effective instructional design and organization, facilitating discourse, and direct instruction using appropriate pedagogies and technologies. Figure 1 presents a modified framework showing how all the models connect to create effective online learning environments. [9]
- **Social presence** is the ability for students to project their personality into a community of inquiry, often through discussions and group activities.

Faculty members, in most cases, do not receive pedagogical training or best practices for teaching, even in a "traditional" face-to-face environment. Online teaching presents additional challenges, as it often requires strategies and technologies that differ from the more familiar (to many) face-to-face instructional delivery. With well-researched resources and information, faculty can be supported to use pedagogical strategies and technology effectively to teach online.

The following research review will provide an overview of the challenges and opportunities of effective online teaching and learning strategies.

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[8] Garrison, Anderson, and Archer, "Critical Inquiry in a Text-Based Environment," 87-105.
[9] Shea, Pickett, and Pelz, "A follow-up investigation of 'teaching presence' in the SUNY Learning Network," 61-80.

III. Brief Research Overview and Implications based on Sloan-C Framework

The internationally recognized and research-based Sloan-Consortium (Sloan-C) quality framework[10] identifies five pillars of quality online education. This framework provides a useful way to organize the key research that also guides UW-Madison online course and program development. Section IV of this report will provide ways UW-Madison supports quality online education, organized using the Sloan-C framework. This framework for evaluating quality online courses and programs includes:

Figure 2: Sloan-C Quality Pillars

➢ **Learning Effectiveness:** The quality of learning online is comparable to the quality of its traditional programs.

➢ **Faculty Satisfaction**: Faculty achieves success with teaching online, citing appreciation and happiness.

➢ **Student Satisfaction:** Students are successful in learning online and are typically pleased with their experience.

➢ **Scale:** Institutions continuously improve services while reducing costs.

➢ **Access:** All who wish to learn online have the opportunity and can achieve success.

For each quality pillar, the Sloan-C framework offers best practices and progress indices. The Sloan-C framework forms the basis of the approach that online and EI development teams are using to develop new online post-baccalaureate courses and programs.

1. Learning Effectiveness

The Sloan-C Learning Effectiveness Pillar examines whether online learning outcomes meet or exceed institutional standards, and whether academic integrity and control reside with the faculty in the same way as traditional programs. This pillar seeks evidence that the quality of online learning is comparable to the quality of traditional programs. This includes using educational strategies that are recognized for quality online course design and teaching.[11] What is the evidence that online learning is effective?

➢ The majority of research found that there is no significant difference between face-to-face and online learning. Comparing the two modalities is also very difficult due to variables of course design, student populations, and teaching effectiveness.[12]

➢ A 2009 study[13] of 10,720 faculty from 69 public universities found that instructors who had not taught online were skeptical or assumed that online education was not as good as face-to-face instruction; however, once they had taught online, they realized that learning outcomes in an online course were "as good as or better than face-to-face instruction."

➢ A 2009 Department of Education meta-analysis[14] of 50 study effects found that students who took all or part of their class online performed better, on average, than those taking the same course through traditional face-to-face instruction.[15] Effect sizes were larger for studies in which the

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[10] "The 5 Pillars," Sloan-C. The Sloan Consortium; Moore, "A Synthesis of Sloan-C Effective Practices," 91-115.

[11] Ibid.

[12] Bowen and Lack, "Current Status of Research on Online Learning in Postsecondary Education."

[13] Seaman, "Online Learning as a Strategic Asset," 29.

[14] Means et al., "Evaluation of evidence-based practices in online learning."

[15] Ibid, xiv.

online instruction was collaborative or instructor-facilitated than in those studies where online learners worked independently. Significantly, the meta-analysis found that online learning can be enhanced by giving learners control of their interactions and prompting learner reflection. "The meta-analysis findings do not support simply putting an existing course online," noted the Department of Education report authors, "but they do support redesigning instruction to incorporate additional learning opportunities online."[16]

These studies found that it is not the medium that makes online learning courses any better but instead the efforts of the instructor and the time and thought invested in the pedagogy and intentional instructional design decisions. Well-designed, online courses offer rich opportunities for interactive, collaborative, and reflective teaching and learning.

2. Faculty Satisfaction

Quality online education requires that faculty are prepared for the challenges and satisfied with the process. The Faculty Satisfaction Pillar highlights the importance for the university to commit to building and sustaining environments that are personally rewarding and professionally beneficial.[17] Developing and teaching online courses creates unique challenges for faculty training and support.

➢ Faculty members have high levels of satisfaction when they feel that their teaching strategies have positively impacted students such as reaching students with limited access to education.[18]

➢ After teaching online, research has found that many faculty members are pleased to discover new teaching and learning strategies and innovative ways to use technology. Common faculty-mentioned benefits of teaching online include higher-quality interaction with students, increased student-teacher communication, access to unlimited online resources, course organization and management strategies, variety of informal and formal assessments, time for in-depth analysis, and collaborative and interactive learning activities that foster reflection and critical thinking.[19]

➢ Faculty members are more satisfied with their online teaching experiences if they are provided instructional support, preparation time, institutional support, and training. Regardless of experience, faculty development studies have found that most faculty benefited from learning new pedagogical and technological approaches to improve teaching and learning.[20]

While the faculty members are excited about the possibilities of teaching online, they are also concerned about whether they would be supported by the institution and learn how to design courses and use technology properly to enhance learning. Therefore it is important to provide these resources, especially pedagogical and technological support and training.

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[16] Ibid, 51.

[17] Moore, "A Synthesis of Sloan-C Effective Practices."

[18] Seaman, "Online Learning as a Strategic Asset."

[19] Skibba, "Adult Learning Influence on Faculty Learning Cycle," 263-291; Conceição, "Faculty Lived Experiences in the Online Environment," 26-45; Theroux and Kilbane, "The Real-Time Case Method," 31-40; Dziuban et al., "Three ALN Modalities: An Institutional Perspective," 127-148; Thompson, "Faculty Satisfaction in the Online Teaching-Learning Environment," 189-212; Smith, Ferguson, and Caris, "Teaching College Courses Online vs Face-to-Face"; Thompson, "Faculty Satisfaction in Penn State's World Campus," 129-144.

[20] Dziuban et al., "Three ALN Modalities"; Shea, Pickett, and Pelz, "A follow-up investigation"; Thompson, "Faculty Satisfaction in the Online Teaching-Learning Environment"; Skibba, "Adult Learning Influence"; Biro, "How to support faculty as they prepare to teach online"; King, "Technology Catalyzing Change in How Faculty Teach and Learn," 26-37.

3. Student Satisfaction

The Sloan-C Student Satisfaction pillar looks at the entire student experience from preparing for the online environment, the course experience, and services provided throughout the entire program.[21]

- ➢ The State University of New York has one of the largest ongoing studies of college-level student attitudes with over 8,000 students surveyed over a five-year period.[22] Variables significantly correlated with high levels of satisfaction and perceived learning included the quantity and quality of interactions with the instructor and classmates, prompt and constructive instructor feedback, and clear course expectations and assignment instructions.
- ➢ Other contributors to student satisfaction included an organized course structure, relevant resources, orientation resources, technical support, and tailored review/help sessions, and availability of student support from the instructor and university.[23] A supportive learning community with the instructor and other students is critical to student learning and satisfaction. Peer support can occur through discussions, group projects, feedback, and study groups.[24]
- ➢ Not all students are ready to learn online. A recent study of Washington State **community and technical college students** found that some students, particularly those with lower levels of academic preparation, experienced stronger negative coefficients for online learning compared with their counterparts, in terms of both course persistence and course grade. However, students with "stronger academic capacity" tended to be more successful in online courses. The same study found that "older students' superior adaptability to online learning lends them a slight advantage in online courses in comparison with their younger counterparts."[25] Authors of this study recommend ensuring students are academically prepared, provide early counseling to help students who are not performing well, and "focus on improving the quality of all online courses taught at the college, to ensure that their learning outcomes are equal to those of face-to-face courses, regardless of the composition of the students enrolled. Such an improvement strategy would require substantial new investments in course design, faculty professional development, learner and instructor support, and systematic course evaluations."[26]

Effective learning and student satisfaction takes place when students are prepared for the online environment, including receiving technology help in addition to instructor and peer support through frequent communication. Quality course design is instrumental to making this happen. A nationally recognized and research-based peer review process, called Quality Matters (QM),[27] emphasizes that it is important to employ a deliberate design process to purposefully select instructional methods, content, activities, and assessments that will help learners acquire skills and knowledge. Then it is important to organize instruction to
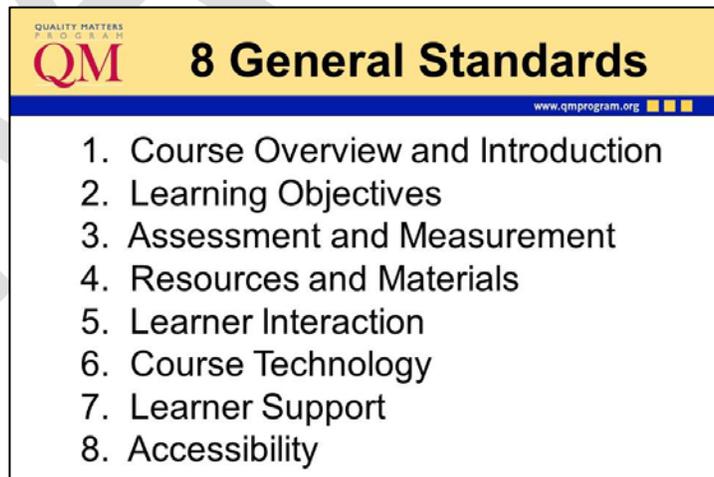
Figure 3: QM Rubric consists of eight general and 41 specific standards that positively impact student learning based on research and instructional design.

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[21] Moore, "A Synthesis of Sloan-C Effective Practices."

[22] Shea et al., "Student Satisfaction and Reported Learning in the SUNY Learning Network," 145-156.

[23] Lee et al., "Examining the Relationship among Student Perception of Support, Course Satisfaction, and Learning Outcomes in Online Learning," 158-163.

[24] Muilenburg and Berge, "Student barriers to online learning: A factor analytic study," 29-48.

[25] Xu and Smith Jaggers, "Adaptability to Online Learning: Differences Across Types of Students and Academic Subject Areas," 18.

[26] Ibid, 26.

[27] Quality Matters.

develop coherent learning units that can easily be understood by the learner. A 2011 study of more than 3,000 online students from 31 institutions in 22 states found that students believed all the standards were important and led to increased learning and satisfaction. [28]

4. Scale & Access

The Sloan-C Access Pillar focuses on providing a quality online education to anyone who is qualified and motivated. This means providing options that make it possible for students who may have time, family, work, or geographic challenges while pursuing their degree of choice. Complementing these goals, the Scale Pillar balances the importance of offering the best educational value to learners and also benefiting the university by gaining or increasing enrollments that may not be possible otherwise, and to do so in ways that are affordable for providers and learners.[29]

> - Many higher education institutions have moved from offering individual online courses to providing complete online programs (62.4% in 2012 as compared to 34.5% in 2002). The proportion of all students taking at least one online course is at a record high of 32%. The number of students taking at least one online course increased by over 570,000 to 6.7 million.[30]
> - 69% of chief academic leaders from 2,800 colleges and universities said online learning is critical to their long-term strategy (the highest it has been for this ten-year period).[31]
> - Greater—and smarter—use of technology in teaching has been shown to be a promising way of controlling costs while also reducing achievement gaps and improving access.[32]
> - Initial start-up costs tend to decrease over time. A U.S. Department of Education report[33] recommends automating routine tasks to maximize instructor time to focus on high-value activities and develop learning resources, such as quizzes, videos, cases studies, that may be used in multiple courses.
> - From 1999 to 2004, the National Center for Academic Transformation (NCAT) worked with 30 diverse two- and four-year colleges (50,000 students annually) to prove that it is possible to improve quality and reduce cost in higher education. Course redesign using technology is key to achieving both outcomes. The results of the NCAT Program in Course Redesign were exceptional. Most dramatically, all 30 institutions reduced their costs by 37% on average, ranging from 20% to 77%, and produced a collective annual savings of about $3 million. Twenty-five of 30 course redesign projects showed significant increases in student learning; the other five showed learning equivalent to traditional formats. Of the 24 projects that measured retention, 18 reported a noticeable decrease in drop-failure-withdrawal rates, ranging from 10 to 20%, as well as higher course-completion rates. Other positive outcomes included better student attitudes toward the subject matter and increased student and faculty satisfaction with the new mode of instruction.[34]

Online learning is an important strategy in postsecondary education since it improves flexibility for students and faculty while expanding educational opportunities among students who could not obtain their degree of choice from their college of choice otherwise. With careful planning, online programs can be efficient and scalable.

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[28] Ralston-Berg, "Online course quality: The student perspective."

[29] Moore, "A Synthesis of Sloan-C Effective Practices."; Seaman, "Online Learning as a Strategic Asset."

[30] Ibid.

[31] Allen and Seaman, "Changing Course: Ten Years of Tracking Online Education in the United States."

[32] Bowen et al., "Interactive Learning Online at Public Universities," 7.

[33] Bakia et al., "Understanding the Implications of Online Learning for Educational Productivity," 1-76.

[34] See "Project Descriptions Sorted by Degree of Success" for exemplars:
http://www.thencat.org/PCR/Proj_Success_all.html

IV. UW-Madison Processes to Build Quality Online Courses and Programs

UW-Madison has a long history as a leader in distance education. Much of that expertise has been located in disciplines specific to the various schools and colleges because of the decentralized nature of the campus. Flexible and discipline-specific pedagogy is an important ideal of UW-Madison that will continue to be critical to our success. There will continue to be varied models for online courses and programs and for support across the schools and colleges.

That said, as distance education on the UW-Madison campus has grown and matured, so too has the need to align that expertise to be more widely available to the faculty and instructors interested in engaging in online teaching and learning. Through Educational Innovations, partnerships (as shown in Figure 4) are being formed with schools and colleges, the Division of Continuing Studies, and the Division of Information Technology (DoIT) Academic Technology (AT) to share best practices and efficiencies to move the entire campus forward to develop quality online courses and programs.
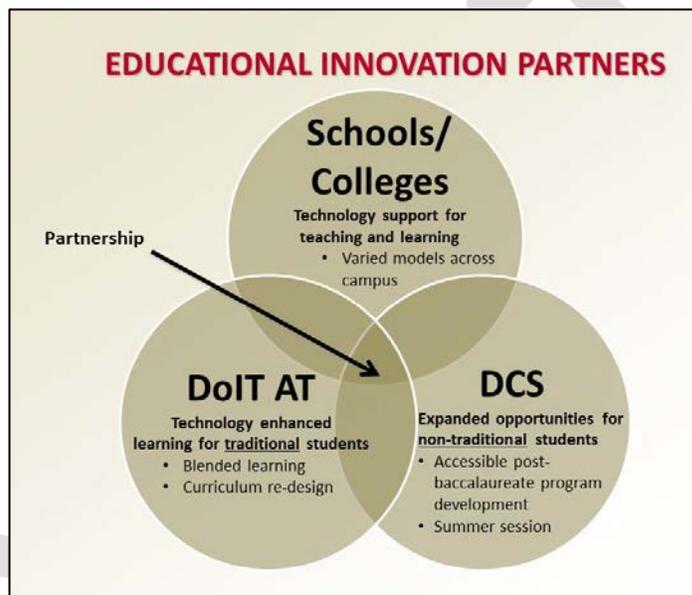

Figure 4: This diagram shows how online course and program development is taking place in partnership with schools/colleges, DoIT AT, and DCS. It does not depict all provided services.

Following are some of the ways UW-Madison supports quality online educations, organized using the Sloan-C pillars of quality framework.

Learning Effectiveness: UW-Madison has internationally recognized faculty who provide quality curricula. Partnering with these knowledge leaders are course development teams across the university, which include experienced and research-guided instructional designers/technologists, who can aid faculty in transforming their vision and expertise online while taking into account the pedagogical differences and technology requirements.[35] In addition, online degree programs will use standard UW-Madison admission standards; therefore, post baccalaureate students are selected based on rigorous standards and are highly-qualified.

Evaluation of student success is important yet UW-Madison's academic programs have a wide array of educational objectives; therefore, a "one-plan-fits-all" approach does not work. However, as explained in

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[35] Brigance, "Leadership in Online Learning in Higher Education," 43-48.

the University assessment plan,[36] each program-specific assessment plan will include some common elements: identification of learning goals for academic programs and service courses; a timetable for periodic assessment of students' attainment of these learning goals; description of methods, which make use of existing academic milestones, processes, and resources as loci of assessment because such events and processes are embedded in the curricular experience and are valued and understood by faculty, staff, and students; and an explicit assignment of responsibility for assessment activities to an individual or a faculty committee that considers academic and curricular decisions.

Faculty Satisfaction: EI leadership, the Vice-Provost for Teaching and Learning, DoIT AT, College of Engineering, College of Letters & Science Learning Support Services (LSS), Division of Continuing Studies (DCS), School of Education, and many other campus support units are working collaboratively to provide pedagogical and technological training and support. Examples include: DoIT AT's Blended Learning (Blended@UW) programs and workshops; the College of Engineering's Blended Learning seminar series; LSS Teaching with Technology series, and a DCS "Teaching Online" workshop that provided strategies and technologies to effectively manage and facilitate an online course. In addition, DCS Distance Education Professional Development offers online courses, certificate programs, and an internationally-recognized Annual Conference on Distance Teaching and Learning. There are many other campus workshops and learning communities in other schools/colleges in addition to. technologies available from Learn@UW, technologies and consulting services available from DoIT AT, and a variety of other services, and resources available, many listed here: https://www.cio.wisc.edu/Teaching.aspx. In addition, a planning committee is currently meeting to discuss how to leverage current UW-Madison resources to offer campus-wide professional development for online instruction.

Figure 5: Diagram shows some key goals of EI course and program development.

Student Satisfaction: Student readiness for online learning is critical to their success. Therefore, it is recommended to include resources and tutorials within online courses to prepare and help students achieve success when learning online, including how to use the technology and suggestions for how to be successful learning online. Student readiness training for online learning is also being explored. In addition, since course design is critical to student satisfaction, instructional designers and technologists across campus are informally using Quality Matters, a faculty-centered, peer review process, to help faculty design courses to increase student satisfaction. See Appendix C for the Quality Matters standards that are recommended to embed in online course design.

Scale and Access: The UW-Madison Education Innovation initiative includes goals to develop post-baccalaureate degrees and certificates that attract new post-traditional audiences to educational opportunities that are not part of the usual program array. Reaching new audiences through quality online courses and programs is an important (but not exclusive) part of these goals. EI efforts are creating cross-campus collaborations to design and develop a systematic approach to delivering high quality, reusable, and scalable online courses and programs. For an example of program and course development processes utilized internally by the Division of Continuing Studies Educational Innovations Program Development team, see Appendix D for program development and Appendix E for course development planning. These programs must go through the standard governance process for approvals for an online course set by each department/school/college, the Graduate School Faculty Executive Committee (GFEC), and the University Academic Planning council (UAPC).

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[36] "Assessment of Academic Programs and Student Outcomes."

V. Selected Success Stories

There has been successful experimentation at the University of Wisconsin-Madison with online, blended, and web-facilitated courses that have showed positive results.

Master of Engineering in Professional Practice (MEPP) Program

There are several long-standing online professional masters programs that have consistently had excellent student and faculty evaluations. For example, the Master of Engineering in Professional Practice (MEPP) program has been recognized by Sloan-C as a great example of the Learning Effectiveness Pillar. This program has a system of planned evaluations that support a process of continuous improvement for an online degree program. Key elements include: an evaluation of each course by students and faculty; an evaluation of the overall program at graduation; and a follow-up survey of alumni, their co-workers, and their family members to measure the impact of the program upon professional and personal development of alumni. This set of coordinated evaluation tools has been employed in the MEPP program since 1999. An important emphasis with each evaluation is to seriously study results and use input to improve course design and instructional methods. The impact on student ratings has been overwhelming positive.[37] More details available at: http://sloanconsortium.org/effective_practices/integrated-assessment-system-courses-overall-program-and-post-program-career-imp.

Engineering Problem Solving with Computers Course

There has also been successful experimentation with blended and computer-enhanced courses that have showed positive results. For example, Professor Greg Moses found in his Engineering Problem Solving with Computers course that small individual lessons paired with frequent online quizzing reduces the number of questions in computer lab sessions and has dramatically influenced exam scores.[38]
More details available at: https://tle.wisc.edu/tleblogs/gamoses.

Wisconsin Collaboratory for Enhanced Learning (WisCEL)

Another success is the Wisconsin Collaboratory for Enhanced Learning (WisCEL).[39] WisCEL instructors consistently use computerized learning software to allow students to work at their own pace, get immediate individualized feedback, hold students accountable to a specific level of learning mastery on homework assignments, reduce instructor grading, and provide instructors with current information on student performance. Students in WisCEL sections consistently achieve grade outcomes of A, AB, and B and fewer grade outcomes of D and F than in non-WisCEL sections of the same course.[40] More evaluation results are available at: http://www.wiscel.wisc.edu/about_program.htm

Engage

Engage, a program managed by DoIT Academic Technology, has many successes helping UW-Madison address teaching and learning challenges using technology. Engage's mission is to transform teaching and learning at the University of Wisconsin-Madison and beyond. This is accomplished by fostering partnerships to explore and evaluate solutions and tools, and disseminate innovations that improve teaching at UW-Madison and beyond. Details at http://engage.wisc.edu/

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[37] See results at Pferdehirt, "Integrated Assessment System for Courses."

[38] Moses, "Lessons Learned in the Classroom circa Fall 2011."

[39] "WisCEL Program Overview," University of Wisconsin-Madison WisCEL.

[40] "Program Evaluation," University of Wisconsin-Madison WisCEL.

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VI. Appendices

Appendices available at: http://continuingstudies.wisc.edu/innovation/resources.html

Appendix A: Educational Innovation program Development and Implementation

Appendix B: Higher Learning Commission Report on Guidelines for the Evaluation of Distance Education (On-line Learning)

Appendix C: Quality Matters Design Standards

Appendix D: Program Development Planning

Appendix E: Course Development Planning