# Best Practices in Online Teaching Strategies

In the following report, The Hanover Research Council reviews the best practice teaching strategies in the field of online education.

# Introduction

In February 2002, *The Times Educational Supplement* reported that "there is growing evidence from research in [e-learning] that certain strategies…will enhance teaching and learning - just as certain tactics and strategies do work in face-to-face pedagogy."[1] The article emphasized that successful e-learning must involve "a mixture of course design issues and pedagogical issues." In order to entice students to participate, a course must offer "group activities, structure, stimuli, cajoling by tutors and peers…[and] a purpose or a reason to go online."[2]

The importance of instructional strategies to the success of the online environment has precipitated the creation of best practices guidelines for all aspects of the instructional process, including the planning and management of online instruction, online teaching techniques, and online student assessment and evaluation techniques. This report reviews the current literature on successful strategies for online teaching in the following sections:

❖ **Section One: Overview of the Principles, Guidelines, and Benchmarks for Online Education:** This section leads into a discussion of specific best practices for online teaching with a review of the variety of guidelines and principles of online education. Special emphasis is placed on current and future trends in effective online pedagogy.

❖ **Section Two: Best Practices in Online Teaching Strategies**: This section reviews proven strategies for three major components of the instructional process: the planning and management of online instruction, the actual teaching process, and student assessment and evaluation.

❖ **Section Three: An Exemplary Program and Examples of Effective Practices**: The final section provides examples of an award-winning online education program and the teaching practices of three award-winning instructors.

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[1] Vic Lally and Jerry Wallington, "Enticing E-learning," *The Times Educational Supplement*, February 8, 2002, Pg.23

[2] *Ibid.*

## Section One: Overview of the Principles, Guidelines, and Benchmarks for Online Education

Numerous educational agencies, from those that focus solely on online education, such as the Sloan Consortium,[3] to the Institute for Higher Education Policy,[4] have provided general guidelines and benchmarks for online education.  In particular, the Sloan Consortium is nationally recognized as a resource for online education through its annual Sloan-C awards for programs and instructors that have made "outstanding contributions to the field of online learning."[5]  As a beginning to our discussion of best practice online teaching strategies, we profile one of the winners of the Sloan Consortium's *Award for Excellence in Online Teaching* as a case study example of recommended teaching strategies in action.[6]

In 2003, the Consortium presented Bill Pelz, a Professor of Psychology at Herkimer County Community College, with the award. Pelz shared his three "Principles of Effective Online Pedagogy" in a 2004 report.

Pelz's first principle is to "let the students do (most of) the work."[7]   As he asserts, "the more 'quality' time students spend engaged in content, the more of that content they learn." Pelz provides specific examples of activities for which the students do the work while the professor provides support:[8]

- ❖ Student Led Discussions
- ❖ Students Find and Discuss Web Resources
- ❖ Students Help Each Other Learn (Peer Assistance)
- ❖ Students Grade Their Own Homework Assignments
- ❖ Case Study Analysis

The second principle is that "[i]nteractivity is the heart and soul of effective asynchronous learning," but Pelz stresses that interaction must stretch beyond simple student discussion:[9]

> Students can be required to interact with one another, with the professor, with the text, with the Internet, with the entire class, in small groups or teams, one-on-one with a partner, etc. In addition to discussing the course content, students can interact regarding assignments, problems to solve, case

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[3] For more information, please see: The Sloan Consortium. "Home."  See <http://www.sloan-c.org/>

[4] For more information, please see: Institute for Higher Education Policy. "Home." See <http://www.ihep.org/>

[5] The Sloan Consortium. "Home."  *Op.cit.*

[6] For more information, please see: The Sloan Consortium. "Sloan-C Awards." See <http://www.sloan-c.org/aboutus/awards.asp>

[7] Bill Pelz "(My) Three Principles Of Effective Online Pedagogy," *Journal of Asynchronous Learning Networks,* Volume 8, Issue 3: June 2004.

[8] *Ibid.*

[9] *Ibid.*

studies, lab activities, etc. Any course can be designed with required interactivity.

Pelz's final principle is to "strive for presence." According to Pelz, there are three forms of presence for which to strive in online learning environments: Social Presence, Cognitive Presence, or Teaching Presence. These ideas are described in detail in Pelz's report:[10]

❖ **Social Presence**: When participants in an online course help establish a community of learning by projecting their personal characteristics into the discussion — they present themselves as "real people." There are at least three forms of social presence:

   o *Affective.* The expression of emotion, feelings, and mood.

   o *Interactive.* Evidence of reading, attending, understanding, thinking about others' responses.

   o *Cohesive.* Responses that build and sustain a sense of 'belongingness,' group commitment, or common goals and objectives

❖ **Cognitive Presence**: The extent to which the professor and the students are able to construct and confirm meaning through sustained discourse (discussion) in a community of inquiry.

   o Cognitive presence can be demonstrated by introducing factual, conceptual, and theoretical knowledge into the discussion.

   o The value of such a response will depend upon the source, clarity, accuracy and comprehensiveness of the knowledge.

❖ **Teaching Presence**: Teaching presence is the facilitation and direction of cognitive and social process for the realization of personally meaningful and educationally worthwhile learning outcomes. There are two ways that the professor and the students can add teaching presence to a discussion, as displayed in the following table.

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[10] *Ibid.*

### Figure 1.1: Components of Teaching Presence

| Facilitating the discussion | Direct instruction |
|---|---|
| • Identifying areas of agreement and disagreement<br>• Seeking to reach consensus / understanding<br>• Encouraging, acknowledging and reinforcing student contributions<br>• Setting a climate for learning<br>• Drawing in participants / prompting discussion<br>• Assessing the efficacy of the process | • Presenting content and questions<br>• Focusing the discussion<br>• Summarizing the discussion<br>• Confirming understanding<br>• Diagnosing misperceptions<br>• Injecting knowledge from diverse sources<br>• Responding to technical concerns |

Source: Bill Pelz "(My) Three Principles Of Effective Online Pedagogy," *Journal of Asynchronous Learning Networks,* Volume 8, Issue 3: June 2004.

Interestingly, these three principles: (1) engage student in content, (2) promote student-teacher and student-student interaction, and (3) strive for presence, are also found in literature regarding benchmarks and recommendations for successful online teaching. For instance, the Institute for Higher Education Policy's 2000 report of benchmarks for successful online education emphasizes interaction and engagement in its best practices for online teaching/learning and course development:[11]

*Online Teaching/Learning Benchmarks*

❖ Student interaction with faculty and other students is an essential characteristic and is facilitated through a variety of ways, including voice-mail and/or e-mail.

❖ Feedback to student assignments and questions is constructive and provided in a timely manner.

❖ Students are instructed in the proper methods of effective research, including assessment of the validity of resources.

*Course Development Benchmarks*

❖ Guidelines regarding minimum standards are used for course development, design, and delivery, while learning outcomes – not the availability of existing technology – determine the technology being used to deliver course content.

❖ Instructional materials are reviewed periodically to ensure they meet program standards.

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[11] Quoted verbatim from: The Institute for Higher Education Policy, "Quality on the Line: Benchmarks for Success in Internet-Based Distance Education," April 2000. Pg. 2-3. See <http://www2.nea.org/he/abouthe/images/Quality.pdf>

❖ Courses are designed to require students to engage themselves in analysis, synthesis, and evaluation as part of their course and program requirements.

Similarly, the *Online Journal of Distance Learning Administration's* "Checklist for Online Interactive Learning" (COIL), a best practice guideline for online faculty evaluation, emphasizes the importance of Pelz's principles of engagement, interaction, and presence, particularly in Categories Two and Four, as reviewed in the figure below.[12]

**Figure 1.2: Checklist for Online Interactive Learning (COIL)**

| COIL Categories |
|---|
| **Category 1: Student Behaviors Meet Criterion** |
| Demonstrate their prerequisite technology skills at beginning are adequate for hardware, software and web site use. |
| Seek opportunities to, and support for, interacting with instructor and other students. |
| Actively participate in all online activities. |
| Actively involved through writing and interaction in web-based courses (improves student writing performance). |
| Use a variety of communication techniques to enhance online learning. |
| Personalize themselves by publishing online biographies and photographs to allow other members of the class to visualize them. |
| Seek assistance in understanding and mastering different learning strategies. |
| Demonstrate prerequisites and become more proficient in technology communication skills. |
| **Category 2: Faculty-Student Interactions** |
| Provide clear and adequate guidance. |
| Use action research regularly to evaluate the success/failure of the course and meet student concerns. |
| Personalize communications by/with student-student and student-teacher. |
| Use variety of communication techniques to provide for greater empathy and personal approach than e-mail and web site alone. |
| Plan for increased time for student interactions as compared to traditional courses. |
| Clearly delineate institutional policy on cheating and plagiarism at start of course. |
| Maintain separate e-mail account for web courses. |
| Forward responses to frequently asked questions to all students to avoid duplication. |
| Give faculty reduced load and increased support to develop course materials. |
| Provide students with continuous, frequent support, feedback. |
| Scaffold virtual discourse construction. |
| Emphasize importance of good study skills throughout course |
| Closely monitor each student's progress. |
| Create opportunities to coach and facilitate student construction of knowledge. |
| Give negative comments to students privately, preferably by phone. |
| Clearly delineate course requirements. |

[12] Thomas J. Tobin, "Best Practices for Administrative Evaluation of Online Faculty," *Online Journal of Distance Learning Administration*. Volume 7, No 2., Summer 2004. See <http://www.westga.edu/~distance/ojdla/summer72/tobin72.html>

| COIL Categories |
| :---: |
| **Category 3: Technology Support** |
| Insure a low level of technological difficulties in accessing web site and communication. |
| Provide adequate, friendly, easy, continuous technical support. |
| **Category 4: Learning Environment** |
| Use structured activities to provide an effective framework for online learning. |
| Mandate smaller class sizes for online courses to give faculty appropriate time to deliver quality instruction board. |
| Use flexible deadlines to motivate students, maintain communication, and allow for technical problems. |
| Create social interaction through group collaboration to facilitate high achievement. |
| Use streaming audio for reading online |
| Present course content in a manner that hierarchically structures the sequence of information. |
| Organize web site to enable student to interact with the content, other students, and instructor. |
| Create welcoming, safe, nurturing online environment. |
| Present problem-solving situations in a realistic context. |
| Provide opportunities for students to question instructor to insure accuracy of understanding. |
| Create opportunities for students to communicate with each other to share understanding of course content. |
| Provide opportunities to collaboratively construct knowledge based on multiple perspectives, discussion and reflection. |
| Provide opportunities for students to articulate and revise their thinking to insure accuracy of knowledge construction. |
| Ensure equitable environment exists for gender differences in learning styles, reduction of barriers to participation, and communication. |
| Include cooperative and collaborative learning to distribute workload through group and support female students' preferred method of connected learning. |
| Promote gender equality by encouraging females to post messages while asking males to subside if a pattern of male domination is noticed. |
| Insure an equitable learning environment exists for all. |
| Allow time for reflection at end of course. |
| Include "warm-up" period with light-hearted exercises aimed to help student get to know one another. |
| Start online course with all students together at the same time. |
| Provide equal access to the shared conversation in the course. |
| Provide opportunities for students to control online learning and structure it for themselves. |
| Provide discussion forums encouraging open and honest dialogue. |
| Conduct a teleconference during and at the end of the course to discuss successes and problems. |
| Use computer conferencing to develop overall critical thinking skills. |

Source: Thomas J. Tobin, "Best Practices for Administrative Evaluation of Online Faculty." *Online Journal of Distance Learning Administration.* Volume 7, No 2. Summer 2004. *Op.cit.*

Finally, Pelz's principles for online teaching are complimented by recommendations for the key characteristics used in effective online teaching, encapsulated in the acronym VOCAL (Visible, Organized, Compassionate, Analytical, and Leader-by-example).[13]   Based on ten years of teaching experience in web-enhanced, blended

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[13] John R. Savery. "Be VOCAL: Characteristics of Success Online Instructors." *Journal of Interactive Online Learning.* 4:2, Fall 2005. Pg. 141. See <http://www.ncolr.org/jiol/issues/PDF/4.2.6.pdf>

learning, and entirely online classrooms, VOCAL integrates the existing foundation of best practices with the design of learning environments that foster student ownership.[14]   The five components of VOCAL are discussed in greater detail below:[15]

❖ **Visible**: The online classroom differs from the traditional classroom in that text largely replaces in-person, face-to-face, verbal communication.  This different dynamic makes it easier for students to feel as if the instructor is not participating in learning, thus making it more likely that students take a passive role as well.  A lack of visibility may lead to students' critical attitudes of the instructor's effectiveness and lower levels of affective learning.

Visibility can be demonstrated through public and private communication channels, such as:

o A section of the course website with personal and professional information about the instructor.

o Timely return of assignments and feedback.

o Regular course website updates and postings, and well as regular updates to a shared assignment calendar.

o Mass and personal email communications with all students.

❖ **Organized**:  Because online learners generally choose to take an online course because they assume it will provide more flexibility for their busy schedules, they also need to know what is expected of them so that they can organize their time to meet course requirements.  This increased time management responsibility of the learner also means that there is an increased organization responsibility on the instructor.  In order to meet the needs of students, it is suggested that online instructors:

o Require students to take an online self-assessment and report what they think are the characteristics of a successful online student.

o Prepare syllabus and assignment due dates carefully and well in advance so that students know what to expect and when.

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[14] *Ibid.*
[15] *Ibid.* Pg. 142-149.

o Prepare a documents of "Do's and Don'ts" for the course, including the rules of web etiquette, posting comments in discussion forums, and communicating concerns to the instructor.

o Anticipate the need for a non-instructional venue for online discussions.

o Use different formats for online resources and label each clearly so that students can select a format that is most useful to them (i.e. pdf, html, doc, ppt).

o Fully use the capabilities of the available educational technology to enhance student learning.

❖ **Compassionate**:   Online environments can be surprisingly intimate, especially since email provides a combination of privacy and distance that does not exist in traditional classrooms.  This intimacy increases the need for instructors to be compassionate of students' feelings and needs.  This can be accomplished through:

o Permission for students to communicate directly with the instructor.

o Discussion forums in which students introduce themselves and provide personal information, or use "ice-breaker" techniques to get students to share personal information with each other.

o Reminding, if necessary, student of the class expectations of conduct, participation, and the instructor's response to unanticipated problems.

❖ **Analytical**: Instructors need to manage the online learning assignment to ensure that students are completing assignments and achieving learning outcomes.  This includes the timely return of assignments as well as the analysis of student data.  While many course management systems provide tools for assessment and analysis, it is the instructor's responsibility to determine if the assessment if appropriate to the subject.  Suggested strategies include:

o The use of smaller and more frequent assignments throughout the course to reduce test anxiety and provide learners with opportunities to process course concepts and content.

o The use of satellite offices, if possible, to administer face-to-face exams.

o Specify the format and file naming conventions for assignments submitted online to help easily organize and alphabetize assignments.

- o Provide opportunities for students to provide feedback on the course.

- o Provide clear expectations and guidelines for assessing participation.

- ❖ **Leader-by-Example**: The online instructor sets the tone for student performance through teacher-student interactions. Consequently, instructors should attempt to model best practice strategies to assist student learning. Ways in which instructors can model good online learning and behavior include:

  - o Introductions in which the instructors shares personal information with students both formally and informally.

  - o Model responsibility by returning assignments within the communicated established time period.

  - o Model the right way students should communicate online.

  - o Use public and private communication to ensure visibility.

  - o Plan for and implement an activity at the end of the course that brings closure to the class, reinforces what was learning, and acknowledges the contributions of students.

Not only are variations on these three best practice principles of online teaching highlighted in current recommendations – they are also integrated into projections of pedagogical techniques in online teaching which will be used in the coming decade.

For instance, a survey of instructors and administrators in postsecondary institutions primarily belonging to the Multimedia Educational Resource for Learning and Online Teaching (MERLOT) and the Western Cooperative for Educational Telecommunications (WCET) estimated that the following teaching strategies, in order of importance, will play a significant role in the future of online teaching.[16] It is interesting to note the continued importance of interactivity in online instruction, as seen in elements such as group problem-solving and collaborative tasks, coaching or mentoring, and discussion.

- ❖ Group problem-solving and collaborative tasks;
- ❖ Problem-based learning;
- ❖ Discussion;

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[16] Kyong-Jee Kim and Curtis Bonk, "The Future of Online Teaching and Learning in Higher Education," *Educause Quarterly*, Number 4, 2006. See
<http://connect.educause.edu/Library/EDUCAUSE+Quarterly/TheFutureofOnlineTeaching/40000?time=122702 5492>

❖ Case-based strategies;
❖ Simulations or role play;
❖ Student-generated content;
❖ Coaching or mentoring;
❖ Guided learning;
❖ Exploratory or discovery;
❖ Lecturing or teacher-directed activities;
❖ Modeling of the solution process; and
❖ Socratic questioning.

The next section of this report will review in greater detail the use of the previously discussed principles of best practice online teaching as they relate to each component of the instructional process.

## Section Two: Best Practices in Online Teaching Strategies

The literature regarding best practices in online teaching strategies can be organized into three major components of the instructional process: (1) planning and development, (2) teaching in action, and (3) student assessment and data evaluation. Together, these three components significantly influence the effectiveness of the online environment, making it especially important that instructors are aware of best practice teaching strategies, discussed in the following sections.

### 2.1: Best Practices in Planning and Development

One of the most important elements of planning and managing online courses is instructors' recognition of the fact that although there are a wide array of educational technologies and course management tools available for online teaching, not all of these technologies are appropriate matches to the subject taught and the teacher's pedagogical style and strategies. As such, it is very important that instructors ensure that pedagogical principles drive the use of technology rather than the other way around. Instructors must strive to achieve certain learning standards, regardless of the medium through which they are teaching.[17] Because of this, course planning should take place before instructors select the technology and course management system that will be used for the course.[18]

The first step in the planning process involves the development of learning objectives. The importance of learning objective development and communication is highlighted throughout the literature, including Park University's guidelines for the creation of learning objectives:[19]

- ❖ **Behavior**: Learning objectives should be written in terms of observable behavioral outcomes. Clear, targeted verbs should be used to communicate with students the expected outcomes of learning activities.

- ❖ **Student-Centered**: All learning objectives should focus on the student. Effective objectives explain expectation for student behavior, performance, and understanding.

- ❖ **Conditions**: Learning objectives should be specific and should target one aspect of understanding. The conditions of the objective include the tools, references, and/or aids that will be provided to the student.

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[17] Richard Ascough. "Designing for Online Distance Education: Putting Pedagogy Before Technology." Teaching Theology & Religion. Volume 5, No 1. 2002. Pg. 17. See <http://post.queensu.ca/~rsa/2002_TTR_Ascough.pdf>
[18] *Ibid.*
[19] Park University. "Faculty Resources Quick Tips: Learning Objectives – Guidelines for Writing Effective Learning Objectives." See <http://www.park.edu/cetl/quicktips/writinglearningobj.html>

❖ **Standards**: Each learning objective should be measurable and should include the criteria for student assessment.  Standards are important because they both inform students of performance expectations while providing insight as to how these expectations will be measured.

Following the development of clearly defined learning objectives and the special needs of students (e.g. consideration of the needs of students with disabilities or visual impairments if they are enrolled in the course), instructors may begin to select the technological option best-suited for the course.

It is important to note, however, that although there is tremendous variety in the educational technologies available to online instructors, the field of distance learning technology is changing quickly, and it is therefore necessary for instructors and administrators to keep a close eye on emerging trends and associated best practices.[20] For example, the annual *Horizon Report*, a long-running qualitative research project that seeks to identify and describe emerging education technologies, projects that mobile technologies, cloud computing, geocoded data, personal web programs, semantic-aware applications, and smart objects will significantly impact the choices of educational institutions within the next five years.[21]

While these six technologies in online education are still emerging as educational tools, online technologies such as web-pages, discussion forums, course management systems, audio tools, and video tools are well-entrenched in the field of online instruction.   However, with each technology comes a number of planning considerations that are important for online instructors to reflect upon as they develop their courses and choose the most appropriate technologies.

The University of Washington's "Learning and Scholarly Technologies," a website that provides a help center for online instructors, addresses a number of these technological considerations, reviewed in the figure below.[22]

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[20] David Porter. "Innovations, Trends, and Creativity in Distance Learning." *Paper presented at the 4th International Conference on Education and Technology – Inter-American University of Puerto Rico.* September 7, 2006. Pg. 2. See <http://www.bccampus.ca/Assets/BCcampus+Whitepapers/Innovations$!2c+Trends$!2c+and+Creativity+in+Distance+Learning+report.pdf>

[21] "The Horizon Report: 2009 Edition." *Collaboration between the New Media Consortium and the Educause Learning Initiative.* Pg. 3-4. See <http://www.nmc.org/pdf/2009-Horizon-Report.pdf>

[22] University of Washington Learning & Scholarly Technologies. "Choose Technologies for Your Distance Learning Course." See <http://catalyst.washington.edu/help/teaching_guides/dltech_choices.html>

## Figure 2.1.1: Considerations for Online Technologies

| Technology Option | Planning Considerations |
| --- | --- |
| **Web Page**: *Allows teachers to easily communicate information in a central location, update material, and to use the page as a portal for other technologies used in the class.* | • Gather all content in a single folder to save time when building the web page.<br>    • Consider specific web design patterns or other rules established by the department.<br>• Organize content into sections (e.g. Syllabus, Assignments, Lecture schedule, etc.). Plan how you would like the pages to be organized and linked together. This process should be started through the creation of a site map.<br>• Consider your audience's perspective: what information will students need?<br>    • Borrow ideas from other instructors (the World Lecture Hall is a good resource).<br>• Link to other resources, including the institution's library's electronic reserves.<br>• Keep images small, but also consider issues of access for the visually impaired.<br>    • Direct students to necessary plug-ins or helper applications. |
| **Print**: *One of the most inexpensive and accessible mediums for delivering distance learning course content.* | • Teachers should keep in mind that text materials are static and may be less appropriate for teaching languages and visual concepts.<br>• If using textbooks and readers, choose texts and readings that will be relevant and available over several years. If creating a course reader, ensure that there is enough time to secure copyright permissions.<br>• Printed course and study guides may be a good way to organize the content of the course.<br>    • Workbooks can be used to supplement course materials or as self-guided courses.<br>    • Periodicals can be used to supplement distance learning course material. |
| **Course Readings on the Web**: *Provides students with 24-hour access to materials* | • Allows teachers to easily modify the reading list |
| **Images**: *Can be useful in communicating information that is difficult to explain using text or audio* | • Concept maps, flow charts and photos can make a website more accessible to students<br>    • Determine the appropriate file format for pictures<br>        • Economize file size with image resolution<br>            • Consider copyright issues |
| **Audio**: *Provides flexibility to busy students* | The following audio devices may be used:<br>    • Telephone conferencing<br>        • Voice mail<br>        • Audio tapes<br>        • Audio over the web |
| **Video**: *Allows for face-to-face interactions with students* | • When planning the production of an instructional video, may want to consider the use of a storyboard and a script.<br>    • Plan pre- and post-viewing activities for students |
| **Online discussion**: *Allows students to easily communicate with each other and with the instructor* | Discussed in detail in a later section |
| **Peer Review**: *Allows student to view the same online document and submit comments asynchronously* | Allows students to benefit from their peers while saving the instructor time in providing feedback |

Source: University of Washington Learning & Scholarly Technologies. "Choose Technologies for Your Distance Learning Course." *Op.cit.*

One final yet very important factor that should be taken into consideration in the planning and development component of online teaching strategy is the need for the online courses to be delivered in such a way as to create a learning community among students and the instructor.

Research shows that many of the instances in which distance education courses fail to promote student learning, the cause is students' sense of isolation or low level of self-directedness.[23]   In order to combat this isolation factor, successful online courses develop established protocols for building, maintaining, and evaluating student-to-student and student-to-faculty interactions.  Teaching methods including training in technology for distance learning students, interactive teaching that fosters critical dialogue, mentoring, cooperative peer learning, group out-of-class activities, and the use of e-mail or web announcements to inform students about opportunities for interaction should be designed into the online course to enhance student learning.[24]

## 2.2 Best Practices in Teaching-in-Action

As discussed earlier in this report, the level of interaction among students and between students and the instructor is particularly important in online instruction. Distance education provides many opportunities to foster an interactive "classroom," including two of the most commonly used pedagogical techniques to promote interactivity: (1) online discussion forums and (2) student collaboration on assignments.[25]

Online discussion forums are one of the best ways to facilitate interaction and learning in the online classroom, in part due to their ability to promote constructivist thinking (in which knowledge is constructed from personal experience), critical thinking, and higher-order thinking (thinking creatively and critically in a decision-making or problem-solving manner), all while distributing knowledge among all the students in the class.[26]

Additionally, discussion is a relatively simple way to encourage interaction in the online environment.  For example, interactive learning can be promoted through the use of email or electronic discussion tools, such as the University of Washington's *Catalyst GoPost* tool, a web-based discussion board where students can compare notes, discuss assignments, post attachments, or work together, and the Google platform,

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[23] Marshall Scott et. al. "Innovations in Distance Learning Program Development and Delivery." *Online Journal of Distance Learning Administration*. Volume 6, No 2. Summer 2003. See
<http://www.westga.edu/~distance/ojdla/summer62/schott62.html>
[24] *Ibid.*
[25] University of Washington Learning & Scholarly Technologies. "Help Center: Teaching a Distance Learning Course." <http://catalyst.washington.edu/help/planning/dl_teaching.html>
[26] Muilenburg, Lin and Berge, Zane L. "A Framework for Designing Questions for Online Learning." *eModerators*. See
<http://www.emoderators.com/moderators/muilenburg.html>

*Wiki*, a tool which allows individuals to create websites which can be viewed and edited by site members.[27]

However, regardless of the technologies used, online discussion forums lose effectiveness without the development of thoughtful and relevant questions and instructor's moderation of responses.  The following guidelines are recommended to promote the important element, constructivist thinking, in the online discussion and pedagogy:[28]

1) Pose a stimulating question,
2) Brainstorm answers to the question,
3) Compare ideas, and
4) Fuse to the curriculum.

The first step in this process, "Pose a stimulating question," deserves special focus due to its important role in determining the direction of online discussion.  As such, it is recommended that instructors consider the cognitive levels of the questions, the educational situation, the goals and objectives of the instruction, and the needs of the students when designing online discussion questions.  A survey of the types of discussion questions used by online instructors revealed that the questions could be grouped into the following categories:[29]

❖ **Interest-getting and attention-getting questions:** Example: "If you awakened in the year 2399, what is the first thing you would notice?"

❖ **Diagnosing and checking questions**: Example: "Does anyone know Senge's five principles of a learning organization?"

❖ **Recall of specific facts or information questions**: Example: "Who can name the main characters in Moby Dick?"

❖ **Managerial questions**: Example: "Did you request an extension on the assignment due date?

❖ **Structure and redirect learning questions**: Example: "Now that we have discussed the advantages of, and limitations to, formative evaluation, who can do the same for summative evaluation?"

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[27] University of Washington Learning & Scholarly Technologies. "Help Center: Encourage Student Discussion." See <http://catalyst.washington.edu/help/teaching_guides/discuss.html>
[28] Muilenburg, Lin and Berge, Zane L. "A Framework for Designing Questions for Online Learning." *eModerators. Op.cit.*
[29] Quoted verbatim from: *Ibid.*

❖ **Allow expression of affect questions**: Example: "How did you feel about our online guest's list of ten things trainers do to shoot themselves in the foot?"

❖ **Encourage higher level thought processes questions:** Example: "Considering what you have read, and what was discussed in the posts this past week, can you summarize all the ways there are to overcome obstacles to effective teamwork?"

During the discussion process, it is important that instructors continuously manage students' ideas and further facilitate interactions. However, if the online discussion is going well without instructor feedback, it is often best for teachers to wait to jump into the discussion until the students' responses are waning. At that point, it is recommended that instructors summarize key points or ask prompting questions to recharge the discussion.

The second strategy to facilitate interactivity: "encourage student collaboration," relies on the use of educational technologies to simulate face-to-face meetings when students work together on assignments.[30]

However, it should be noted that a review of the literature identified one study that found that while instructors perceive the learner-instructor and learner-learner interactions as key factors in quality online instruction, students' varied regarding their opinion on whether interaction is important.[31] The authors of the study suggest that this variance in student opinion is related to differences in learning style and personality, as well as students' lowered expectations of the quality of interaction in online instruction.[32] While these findings emphasize that instructors need to identify the needs of their students in online instruction, they also suggest that interaction is considered by both teachers and students to influence the effectiveness of instruction in a primarily positive way.

Beyond these two major pedagogical strategies for enhancing the success of online teaching, Pennsylvania State University's World Campus, which offers more than 50 degree and certificate programs through distance and online education,[33] provides a detailed guide of best practices strategies and pedagogical advice for online teaching.[34] Reviewed below, this guide provides a set of best practice recommendations and

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[30] University of Washington Learning & Scholarly Technologies. "Help Center: Teaching a Distance Learning Course." *Op.cit.*

[31] Bude Su et. al. "The Importance of Interaction in Web-Based Education: A Program-level Case Study of Online MBA Courses." Journal of Interactive Online Learning. Volume 4, No 1. Summer 2005. Pg. 1. See <http://www.ncolr.org/jiol/issues/PDF/4.1.1.pdf>

[32] *Ibid.* Pg. 14.

[33] Pennsylvania State University World Campus. "About Us: World Campus History." See <http://www.worldcampus.psu.edu/AboutUs_History.shtml>

[34] For more information, please see: Connexions. "Best Practices in Online Teaching." <http://cnx.org/content/col10453/1.2>

related strategies for the process of teaching, the majority of which directly compliment the literature asserting the need for interactivity, instructor presence, student collaboration, and the creation of a learning community.

*Prepare Your Students for Learning Online*[35]

Online instructors need to provide sufficient orientation for students regarding the technology and instructional methods used in the course.  This can be accomplished by:

❖ Posting a welcome message to help students get started.

❖ Include a brief orientation for students to get familiar with the terminology and tools used in the course management system.  ([Example])

❖ Provide contact information for technical help in a variety of places (syllabus, email, course announcement, etc.), as well as personal contact information, standard response times, and preferred communication methods.

❖ Remind students to set up email forwarding to their preferred accounts. However, faculty and students should keep all course-related communications within the course management system to maintain confidentiality.

❖ Provide online office hours as needed.

❖ Structure the course by providing guidelines for participation and other policies to help students learn more effectively.

❖ Provide resources and strategies for online learning and explain how online learning is different from classroom learning.

❖ Include a Student FAQ with common questions about courses, registration, tuition, financial aid, course materials and software.

*Specify Course Goals, Expectations, and Policies*[36]

It is important to provide course goals, expectations, structure, and related course/departmental/institutional policies at the beginning of the course.  These elements are commonly included in course syllabus, although they may be placed elsewhere.  Important information includes:

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[35] Connexions. "Best Practices in Online Teaching: Prepare Your Students for Learning Online." See <http://cnx.org/content/m14875/latest/>
[36] Connexions. "Best Practices in Online Teaching: Specify Course Goals, Expectations, and Policies." <http://cnx.org/content/m14874/latest/>

❖ Course goals and learning objectives, including a description of course structure.

❖ Required and optional course materials or textbooks.

❖ Clear and specific grading policies and academic integrity policies.

❖ The guidelines for student participation and collaboration, including any recommendations for online communication (posting messages to online discussion boards, sending course email, etc.), policies for assignment submission and grading, and web etiquette guidelines for online courses.

*Create a Warm and Inviting Atmosphere to Build a Learning Community*[37]

A variety of literature asserts the need for online instructors to build learning communities that engage students. Learning communities can be built by:

❖ Welcoming students before the course begins via email or course announcement. This welcome should be resent after the add/drop period ends.

❖ Posting a personal introduction with an informal tone.

❖ Providing lots of encouragement and support, particularly in the beginning of the course. This includes positive feedback administered to students privately by email.

❖ Encouraging students to create their own homepage, or post a short self-introduction to the discussion forum. Alternatively students can be encouraged to develop a social space by creating a group inside or outside of the course site.

❖ Uploading any relevant pictures to the course site, and encouraging students to do so as well.

*Promote Active Learning*[38]

The online teaching strategy should foster students' active, constructive participation in learning. This can be accomplished by instructors that:

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[37] Connexions. "Best Practices in Online Teaching: Create a Warm and Inviting Atmosphere to Build and Learning Community." <http://cnx.org/content/m14877/latest/>
[38] Connexions. "Best Practices in Online Teaching: Promote Active Learning." See <http://cnx.org/content/m14977/latest/>

❖ Emphasize to students the importance of learning by playing an active role in the learning process, a role which differs from the direct instruction or lecture in traditional classrooms.

❖ Provide opportunities for students to critique and reflect upon certain course topics.

❖ Encourage students to use the Internet for researching course topics, but remind them to be critical about the information they find and share.

❖ Encourage students to be proactive learners by regularly logging into the course site, submitting assignments on-time, participating in discussions, and cooperating with teammates.

❖ Provide opportunities for active problem solving and for team work.

❖ Encourage the active participation in online discussion by designing provocative questions, encouraging students to respond to questions at a deeper level, and by pointing out any opposing perspectives.

❖ Use multiple discussion formats, including small group discussions, "buzz groups" (two people discuss topic for short period of time), case studies, team debates, "jigsaw groups" where subgroups discuss parts of a topic and then collaborate on their findings, and role play.

*Model Effective Online Interaction*[39]

Instructors can model effective interaction through frequent interactions with students that:

❖ Respond to student comments and questions within time frames set at the beginning of the course. Instructors make sure to notify students if these time frames change, or if they will be unavailable for some period during the semester.

❖ Provide general feedback to the entire class on specific assignments or discussions, while at the same time providing individual encouragement and comments to students. Feedback on graded assignments should recognize good work and make suggestions for improvement.

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[39] Connexions. "Best Practice in Online Teaching: Model Effective Online Interaction." See <http://cnx.org/content/m15030/latest/>

❖ Provide a weekly "wrap up" before the next lesson, and introduce each new week with an overview of the lesson plan and deadlines.

*Monitor Student Progress and Encourage Lagging Students*[40]

Because students have different learning styles, instructors should monitor students and identify those who are lagging. Important points to aid the monitoring process include:

❖ Instructors' awareness that students who fall behind are in jeopardy of not completing the course, which may endanger their financial aid.

❖ Use of available educational technology tools, such as course management systems, to track student progress in course activities.

❖ Contact students who haven't logged in for over a week to inquire whether they're experiencing technical difficulties or problems with course content/activities. If students can't participate due to technical problems, connect them immediately to technical help.

❖ Contact students who have not completed assignments by email or phone.

❖ Include flexibility in grading if possible (i.e. allow students to drop lowest grade, give choices for assignments, etc.)

*Assess Students' Messages in Online Discussion*[41]

Instructors should assess students' messages in online discussion forums through a set a specific criteria. These assessment criteria for online discussion should be included in the course syllabus, a course announcement, or within the instructions for the discussion task. Criteria should:

❖ Make sure the assessment criteria measure both the quantity and quality of the online message.

❖ Consider assigning points to messages that encourage additional posting.

❖ Make use of recommended rubrics from the literature. Examples of good rubrics include:

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[40] Connexions. "Best Practices in Online Teaching: Monitor Student Progress and Encourage Lagging Students." See <http://cnx.org/content/m15059/latest/>

[41] Connexions. "Best Practices in Online Teaching: Assess Messages in Online Discussions." See <http://cnx.org/content/m15035/latest/>

o Edelstein & Edwards' (2002) Assessing Effectiveness of Student Participation in Online Discussions. This rubric considers five categories that are important for building a learning community: promptness and initiative, delivery of post, relevance of post, expression within the post, and contribution to the learning community.

o Garrison's, et al. (2001) Cognitive Processing Categories. May be useful when assessing the quality of postings: (1) triggering (questioning); (2) exploration (information seeking and sharing), (3) integration (providing solution), and (4) solution (testing solutions).

o Kleinman's (2005) Grading Rubric for Online Discussion Participation. Provides detailed grading criteria.

*Sustain Students' Motivation and Provide Feedback and Support*[42]

There are a variety of teaching strategies to support, guide, and motivate students to learn actively in the online environment, including:

❖ Provide opportunities for student collaboration and facilitate collaborative learning processes and tools such as Breeze.

❖ Choose a conversational tone that makes students feel comfortable in the online learning environment and that establishes trust in communication while building a learning community.

❖ Provide meaningful feedback to all assignments and comments.

❖ Provide a weekly summary of discussion topics to demonstrate your participation, and assess messages for both quantity and quality.

Similarly, it helps to provide feedback and support to students through the:

❖ Encouragement of students to articulate their confusion or difficulty with course content, projects, requirements, or instructions for activities.

❖ Quick response to students' concerns or technical difficulties.

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[42] Connexions. "Best Practices in Online Teaching: Sustain Students' Motivation." See <http://cnx.org/content/m15040/latest/> and "Best Practices in Online Teaching; Provide Feedback and Support." See <http://cnx.org/content/m15038/latest/>

❖ Use of peer assessment to provide additional feedback to students while reducing faculty workload.

❖ Participation in online discussion by encouraging openness in online discussions, diagnosing misconceptions immediately to avoid confusion, providing additional resources, and encouraging student to use examples, case studies, or literature to support their arguments.

*Encourage Students to Regulate Their Own Learning*[43]

In order to succeed, students must be encouraged to become "self-regulated learners." Strategies to accomplish this self-regulation include:

❖ Allowing students to become "process managers" in the online course by giving up some of the traditional power of teachers. For example, students may be directed to take turns leading online learning experiences.

❖ Encouraging students' reflection and feedback through the inclusion of an introductory survey with questions on student expectations for the course and engagement in students' course evaluations.

❖ Allowing students to take responsibility for their peers' learning as well as their own through discussion forums.

❖ Provide opportunities for peer review.

*Understand the Impact of Multiculturalism*[44]

It is important that online instructors understand and are aware of cultural-based differences in online classrooms, and that they cultivate cultural sensitivity in e-learning through the appropriate use of technology. This can be accomplished by:

❖ Using non-discriminatory language and being aware that cultural diversity exists both in nationality/ethnicity as well as in generation, religion, political beliefs, or socioeconomic status.

❖ For difficult, emotional, or controversial topics, use chats or threaded discussions, or make discussion optional. At the same time, threaded discussions can be used to invite feedback and reflection on the topic.

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[43] Connexions. "Best Practices in Online Teaching: Encourage Students to Regulate Their Own Learning." See <http://cnx.org/content/m14970/latest/>
[44] Connexions. "Best Practices in Online Teaching: Understand the Impact of Multiculturalim." <http://cnx.org/content/m15041/latest/>

❖ If possible, by creating teams of students from diverse backgrounds to encourage cross-cultural facilitation.

❖ Providing high-quality resources to explain conflicting perspectives.

❖ Providing appropriate supports if it is suspected that a culturally related factor may negatively affect an online learning experience.

❖ Joining professional teaching communities or conferences to gain exposure and connections to our global society.

*Deal With Conflicts Promptly*[45]

Conflicts should be dealt with promptly to minimize student distractions. Conflict management strategies include:

❖ The provision of web etiquette guidelines.

❖ Intervention only when conflicts intensify to a point where students can no longer work through the issue on their own. Otherwise, conflict should be welcomed as a sign that the learning community is developing.

❖ Private communication with students who are posting inappropriately, and contacting the appropriate department if you suspect that a student has violated academic integrity policies.

❖ Provide a regular peer evaluation function so that students can communicate their impressions on how the group is functioning.

**2.3: Best Practices in Student Assessment and Data Evaluation**

Best practice recommendations for the assessment of student learning in an online environment include:[46][47][48]

❖ Assessment through an evaluation process that uses several methods and applies specific standards for student learning.

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[45] Connexions. "Best Practices in Online Teaching: Deal With Conflicts Promptly." See
<http://cnx.org/content/m15042/latest/>
[46] The Institute for Higher Education Policy, "Quality on the Line: Benchmarks for Success in Internet-Based Distance Education," April 2000. *Op.cit.*
[47] Southern Regional Educational Board. "Criteria for Evaluating Online Courses." See
<http://www.evalutech.sreb.org/criteria/online.asp>
[48] Pennsylvania State University World Campus. "Technical Standards and Pedagogical Guidelines for Online and Blended Courses Delivered Between Penn State Locations and to External Students." Pg. 7. See
<http://www.worldcampus.psu.edu/pdf/fac/design_standards.pdf>

❖ The regular review of intended learning outcomes to ensure clarity, utility, and appropriateness.

❖ Timely evaluations at regular intervals to increase course flexibility for students.

❖ The assurance that monitoring/proctoring policies are in place during assessments of student learning.

❖ The integration of some sort of verification method to ensure academic integrity.

❖ Assessment strategies are integral to the learning experience, enabling learners to assess their progress, identify areas for review, and re-establish immediate learning or lessons goals.

❖ Strategies are varied (self-tests, quizzes, journals, writing assignments, projects, exams, etc.) and aligned to instructional goals.

❖ Assessment criteria are clearly articulated.

In addition to the above recommendations, Pennsylvania State University's World Campus' guide of best practice online teaching strategies also emphasizes the need for instructors to gather and analysis student evaluation data to improve course content and pedagogy.  Student data can be collected and used through many methods, including the use of a discussion board for anonymous course feedback, the encouragement and rewarding of students who report significant errors in course content, and through the review of faculty evaluations to provide feedback for future course redesign.[49]

Finally, best practices in online teaching assert that instructors should be careful to follow intellectual property guidelines,[50] participate in an online teaching community to learn from peers,[51] and learn to manage time effectively.[52]

Instructors' ability to manage time and workload effectively is especially important because there are no set hours to online instruction, making it easy for online

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[49] Connexions. "Best Practices in Online Teaching: Use Evaluation Data." See
<http://cnx.org/content/m15043/latest/>
[50] Connexions. "Best Practices in Online Teaching: Follow Intellectual Property Guidelines." See
<http://cnx.org/content/m14976/latest/>

[51] Connexions. "Best Practices in Online Teaching: Participate in an Online Teaching Community." See
<http://cnx.org/content/m15047/latest/>
[52] Connexions. "Best Practices in Online Teaching: Manage Time and Workload Effectively." See
<http://cnx.org/content/m15046/latest/>

teachers to become overwhelmed.  In order to manage time effectively, it is suggested that instructors use the following guidelines:[53]

- ❖ Set limits,
- ❖ Do not always be available to learners,
- ❖ Establish clear priorities for dealing with messages,
- ❖ Put time limits on discussion,
- ❖ Provide learners with predetermined answers to frequently asked questions,
- ❖ Encourage learners to find local tutors and mentors,
- ❖ If possible, hire a TA to respond to students,
- ❖ Try to immediately acknowledge the receipt of a student's question, and set a period of time in which feedback will be returned.

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[53] Muilenburg, Lin and Berge, Zane L. "A Framework for Designing Questions for Online Learning." *eModerators. Op.cit.*

# Section Three: An Exemplary Program and Examples of Effective Practices

There are a number of programs that have successfully instituted the online teaching strategies discussed in the previous sections of this report. As a beginning to our review of example programs, we first provide a description of the University of Central Florida's online education program. This program is profiled in order to provide a comprehensive example of the use of exemplary online pedagogical strategies as well as the necessary institutional and technological supports for effective online teaching. We then re-focus on effective teaching strategies with a review of the online instruction practices of three professors awarded the Sloan Consortium's "Effective Practice Awards."[54]

## 3.1 Review of the University of Central Florida's Online Education Program

A winner of the Sloan Consortium's 2008 Ralph E. Gomory Award for Quality Online Education,[55] the university states that its online education programs adhere to the "Principles of Good Practice" established by the Southern Regional Educational Board.[56] Many of the Southern Regional Educational Board's principles emphasize curriculum and instruction, institutional context, and program evaluation elements that can be used to support and compliment the best practice teaching strategies promoted by the university. For example, the University of Central Florida's "Faculty Center" site promotes and provides resources for best practice teaching pedagogies including collaborative learning, discussion boards, web-streaming techniques and the use of wikis.[57] The following paragraphs discuss the institutional and technological supports necessary for faculty to enact these pedagogies.

*Faculty Development and Support for Online Instruction*

The university states on its website that "[w]ell-trained, prepared and supported faculty members are critical to the delivery of quality distributed learning courses and student success."[58] UCF offers several courses to its faculty members in order to develop their skills in online instruction.

The first of these courses, "Interactive Distributed Learning for Technology – Mediated Course Delivery," "models how to teach online using a combination of

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[54] For more information, please see: The Sloan Consortium. "2008 Sloan-C Awards." See <http://www.sloan-c.org/2008awards>

[55] *Ibid.*

[56] For more information, please see: Southern Regional Educational Board. "Electronic Campus Initiatives: Principles of Good Practice." See <http://www.ecinitiatives.org/publications/principles.asp>

[57] University of Central Florida. "Faculty Center for Teaching and Learning." See <http://www.fctl.ucf.edu/TeachingAndLearningResources/SelectedPedagogies/TeachingMethods/>

[58] University of Central Florida Center for Distributed Learning. "Distributed Learning: Scope and Policies." October 25, 2007. See <http://online.ucf.edu/DLscopepolicies10252007.htm>

seminars, labs, consultations, and Web-based instruction."[59] The second course, "Advanced Distributed Learning for Technology – Mediated Course Delivery," deals with "the important pedagogical, logistical, and technological issues involved in delivering effective online courses."[60] Lastly, the university offers a course entitled "Essentials," which is "a self-paced faculty development workshop" that instills professors with "the foundational knowledge required to develop and deliver a web-enhanced course."[61]

*Course Development and Web Services (CDWS)*

The university's CDWS department "has developed conventions for online courses as well as a support system for faculty teaching in the online environment."[62] The department comprises several teams, which are described below:

❖ *The Instructional Design Team.* The Instructional Design Team facilitates the development and design of online courses through a combination of face-to-face interaction, just-in-time training and ongoing professional development. The Instructional Design Team's award-winning faculty development course, IDL6543 (Interactive Distributed Learning), continuously improves through the commitment, research and integration of instructional best practices and emerging technology.[63]

❖ *Techrangers[SM] Team.* The Techrangers primarily provide the Tech Support for online courses that utilize WebCT. Techrangers are also responsible for coding the pages on Reach and WebCT.[64]

❖ *Digital Media Team.* Graphic Designers, Artists and Photographers…working behind the scenes to make the visual content of all CDWS projects aesthetically pleasing.[65]

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[59] University of Central Florida. "Course Development and Web Services: IDL6543 – Interactive Distributed Learning for Technology – Mediated Course Delivery." See <http://reach.ucf.edu/~idl6543>

[60] University of Central Florida. "Course Development and Web Services: ADL5000: Advanced Distributed Learning for Technology-Mediated Course Delivery." See <http://reach.ucf.edu/~adl5000/>

[61] University of Central Florida. "Course Development and Web Services Essentials: A Foundation for Teaching Online." See < http://reach.ucf.edu/~essentials/>

[62] University of Central Florida. "Course Development and Web Services Essentials: About Us." See <http://cdws.ucf.edu/aboutus.html>

[63] University of Central Florida. "Course Development and Web Services: Instructional Design Team." See <http://cdws.ucf.edu/teams/idesign/index.html>

[64] University of Central Florida. "Course Development and Web Services: Techrangers." See <http://techrangers.cdws.ucf.edu/>

[65] University of Central Florida. "Course Development and Web Services Digital Media: About DMI." See <http://digitalmedia.ucf.edu/site_files/aboutdm.html>

❖ *New Media Team.* New Media's mission is the research and development of emerging technologies for instructional innovations and resources toward enterprise applications for UCF and beyond.[66]

❖ *Video Convergence Team.* [The] Video Convergence team strives to develop training, services and media components that benefit anyone involved in educational endeavors. We begin by sharing our knowledge and research with the faculty and staff at UCF, empowering them to create educationally sound components for their online courses, face-to-face courses or whatever their specific needs may be.[67]

The CDWS department strives to create "courses that are easy to maintain by both faculty and CDWS," and offers "professional development programs" in order to help faculty do so.[68]  CDWS has also developed two websites – "Teaching OnlineWeb" and "Learning OnlineWeb" – which contain resources for teachers and students to engage with online education more effectively.

*Web-based Courses*

The university's web-based courses are "are delivered through the Internet and are accessible anywhere, anytime."[69]  It offers two distinct forms of web-based courses, as described below:[70]

❖ *World Wide Web* courses are conducted fully via Web-based instruction and collaboration. Courses may require proctored examinations, and may include opportunities for face-to-face orientations, but there will be no class attendance requirements.

❖ *ReduceSeatTime/Mixed Mode* courses include both required classroom attendance and online instruction. These classes have substantial content delivered over the Internet, which substitute for some classroom meetings.

The university provides specific details regarding the different modalities used for its web-based courses:[71]

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[66] University of Central Florida. "Course Development and Web Services New Media." See <http://newmedia.cdws.ucf.edu>

[67] University of Central Florida. "Video Convergence Team." See <http://video.ucf.edu/cdws/ourteam/index.html>

[68] University of Central Florida. "Course Development and Web Services Essentials: About Us." *Op.cit.*

[69] University of Central Florida Center for Distributed Learning. "Distributed Learning: Scope and Policies." October 25, 2007. *Op.cit.*

[70] University of Central Florida. "Online@UCF Course Search." See <http://online.ucf.edu/courses.php>

[71] University of Central Florida Center for Distributed Learning. "Distributed Learning: Scope and Policies." October 25, 2007. *Op.cit.*

❖ *WW World Wide Web* – Courses conducted fully via Web-based instruction and collaboration. Courses may require proctored examinations, and may include opportunities for face-to-face orientations, but there will be no class attendance requirements.

❖ *M ReduceSeatTime/Mixed Mode* – Courses include both required classroom attendance and online instruction. All M classes have substantial activity conducted over the Web, which will substitute for some classroom meetings.

❖ *MT ReduceSeatTime/Mixed/ITV Recv* – An M class with class meetings conducted via 2-way interactive television. Class meetings are at a remote site from the instructor.

❖ *ML ReduceSeatTime/Mixed/ITV-LO* – An M class with class meetings conducted via 2-way interactive television. Class meetings are at the origination site with the instructor.

*Video Streaming Courses*

Additionally, the university makes "extensive use of video streaming" in some classes:[72]

❖ **Video Streaming** courses are delivered over the Web via streaming digital video and may be supplemented by additional Web activity, projects or exams.

❖ **Reduced Seat Time/Video Stream** courses include some or all of the following elements: face-to-face lecture, web, video streaming, and labs.

Videos are made available "for on-demand streaming" over the web.[73] The university provides specific details regarding the different modalities used for its video streaming courses:[74]

❖ *V Video Streaming* – Courses delivered over the Web via streaming digital video and may be supplemented by additional Web activity, projects or exams.

❖ *LV Face to Face/VS-Origination* – Class meetings are recorded for subsequent video streaming over the Web.

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[72] University of Central Florida. "Online@UCF Course Search." *Op.cit*
[73] University of Central Florida Center for Distributed Learning. "Distributed Learning: Scope and Policies." October 25, 2007. *Op.cit*
[74] *Ibid.*

❖ *RV ReducedSeatTime/Video Stream* – Courses include streaming video delivered over the Web that substitutes for some classroom meetings.

*Interactive Television Delivery Courses*

The integration of interactive television (ITV) into courses has occurred across a number of UCF campuses and instructional centers.[75]

> These courses are synchronous, live televised courses delivered via 2-way compressed video on T1 lines, in which the faculty member teaches to a face-to-face student group in the live (L) section and to remote (T) sections at area campuses and instructional centers. Students at the remote sites can interact with the faculty member and students at the other sites via the interactive two-way audio and video system.

The university provides specific details regarding the different modalities used for its video streaming courses:[76]

❖ *T 2-Way Interactive TV* – Courses delivered via live two-way interactive television to selected locations. Class meetings are at a remote site from the instructor.

❖ *L Face to Face/ITV-Origination* – Courses delivered via live two-way interactive television to selected locations. Class meetings are at the origination site with the instructor.

❖ *MT ReduceSeatTime/Mixed /ITV Recv* – An M class with class meetings conducted via 2-way interactive television. Class meetings are at a remote site from the instructor.

❖ *ML ReduceSeatTime/Mixed/ITV-LO* – An M class with class meetings conducted via 2-way interactive television. Class meetings are at the origination site with the instructor.

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[75] *Ibid.*
[76] *Ibid.*

**3.2: Effective Practices of Sloan Consortium Award-Winning Professors**

In 2008, the Sloan Consortium recognized three online instructors for their use of effective practices in online education. In this sub-section, we profile award recipients and discuss how their practices in online education have been found to be exemplary.

*Content Area Vocabulary Digital Stories*

This online faculty development practice, created by Susan Wegmann at the University of Central Florida, is designed to improve instructors' use of technology in the online classroom. Wegmann "asks teachers to develop digital stories that focus on their content area vocabulary," and "to use potentially unfamiliar technology programs to help them connect with their **technology-native** students." She provides additional details:[77]

> Since many of my online college students are technology immigrants and unfamiliar with the technology that their own students are using, I developed a digital story activity that "forces" them to use video, audio, and storytelling. After showing them several digital stories I have created, I ask them to choose 5 vocabulary words from their high school content area and create a story that encompasses these words. Then they must use [Microsoft] PhotoStory to create a digital story, complete with pictures, music, and their own voice. Afterwards, they upload it to Teachertube.com[78] and post the URL to our discussion boards, where they will receive peer reviews.

Wegmann's course is a notable example of online faculty development, as it allows instructors of online courses – who might not be fully literate in the latest technology – to competently integrate technology into their courses, thus decreasing the potential gulf in technological savvy between students and their instructors.

*Engaging Students through Electronic Peer Review*

Dr. Ed Gehringer, of North Carolina State University, was recognized by the Sloan Consortium for developing Expertiza, a "platform to support the peer review process" that includes "a variety of activities which use student-generated content to enhance the learning process."[79] In this sense, Gehringer's platform is very much in line with Bill Pelz's first principle – letting the students do most of the work.

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[77] The Sloan Consortium. "Content Area Vocabulary Digital Stories." See <http://www.sloan-c.org/node/1162>

[78] Teachertube.com is a free website dedicated to providing space online for teachers to share instructional videos.

[79] The Sloan Consortium. "Engaging Students Through Electronic Peer Review." See <http://www.sloan-c.org/node/1063>

The Expertiza platform is described in detail on the Sloan Consortium website:[80]

> Expertiza enables students to use … peer review for a variety of purposes, including researching lecture material (i.e., finding links related to each lecture), annotating on-line lecture notes, writing research papers, reviewing papers from the literature, making up homework problems, making up machine-scorable questions, and weekly reviews of student contributions in a seminar course. Using the Expertiza platform to support the peer review process thus allows a variety of activities which use student-generated content to enhance the learning process.

One particularly notable example is enabling students to build resources through electronic peer review. Students select tasks, submit individually designed learning objects or papers, and review work submitted by their peers; working together helps them learn to improve their skills and each others' learning experiences. Performing more authentic tasks which resemble real-world responsibilities also enhances the learning experience, as does giving students the experience of preparing and presenting their ideas for a peer audience. This system is used to produce student-generated learning objects; depending on learning needs, these learning objects can be built from scratch, or subsequent student cohorts can improve the work of their predecessors.

While implementation of the Expertiza platform currently is only possible through North Carolina State University's intranet, there are plans in place to make it available for download. Regardless of the specific technology used, Gehringer has operationalized Pelz's first principle by utilizing a platform that forces students to engage heavily in the learning process through frequent interaction, peer review, and content generation.

*Using the "HyFlex" Course and Design Process[81]*

The final award given for effective practices by the Sloan Consortium in 2008 went to Dr. Brian Beatty of San Francisco State University. Beatty developed a course design called "Hyflex," which "provides a flexible participation policy for students." The Hyflex course is described in detail on the Sloan Consortium website:[82]

> HyFlex (hybrid + flexibility) course design provides a hybrid format for face-to-face and online students and adds a flexible participation policy for students. Students may choose to attend face-to-face synchronous class sessions or complete course learning activities online without attending class in person. In a HyFlex course, the instructor provides instructional structure,

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[80] *Ibid.*

[81] The Sloan Consortium. "Using the 'HyFlex' Course and Design Process." See <http://www.sloan-c.org/node/1159>

[82] *Ibid.*

content, and activities to meet the needs of students participating both in class and online. These are not necessarily completely separated sets of activities, and are typically not the same activities for both types of student participation, but must be equivalent sets of activities selected so that student learning can be effective in either participation format. No matter which participation format is chosen, teaching and learning activities should:

❖ Be presented effectively (and professionally)
❖ Engage learners with generative learning activities
❖ Use authentic assessment to evaluate student learning

The decision to adopt a HyFlex course design should include the consideration of factors such as how the course promotes learner choice in the course participation modes on a regular basis, whether the course design provides equivalent learning activities in each participation mode, whether the course design is reusable, and whether it is technologically accessible to students.[83]

The recommendations guiding instructors' final decision to develop a course in the HyFlex format do not differ from the best practice strategies for course planning discussed previously in this report. Specifically, the HyFlex course design should be developed in conjunction with the following course planning elements to create an effective learning environment:[84]

❖ Identify learning goals
❖ Develop instructional objectives
❖ Identify/create content
❖ Select instructional activities
❖ Create clear instructions
❖ Prepare learning supports (documents, course site)

Combined with careful attention to these planning strategies, the HyFlex course design is a good way to provide students with learning choice and time flexibility, while at the same time allowing institutions to provide high-quality online education without devoting "the time, energy, and resources to build a completely separate and comprehensive online degree program."[85]

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[83] *Ibid.*
[84] Quoted verbatim from: *Ibid.*
[85] *Ibid.*

## Note

This brief was written to fulfill the specific request of an individual member of The Hanover Research Council. As such, it may not satisfy the needs of all members. We encourage any and all members who have additional questions about this topic – or any other – to contact us.

## Caveat

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