



An Emerging Set of Guiding Principles and Practices for the Design and Development of Distance Education

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www.outreach.psu.edu/de/ide/

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Introduction

Innovations in Distance Education (IDE) was launched at Penn State University in 1995 with a grant from the AT&T Foundation. Its purpose was to help universities create a supportive institutional culture in which the possibilities of distance education could be realized. The primary components of the IDE project were the Faculty Initiative and the Distance Education Policy Initiative.

The mission of the Faculty Initiative was to develop a deeper understanding of the issues and opportunities presented by distance education, create new teaching and learning approaches, and empower faculty to become leaders in the effective use of distance education. The mission of the Policy Initiative was to develop and promote institutional policies and infrastructures that are supportive of distance education.

This report focuses on outcomes of the Faculty Initiative. Outcomes of the second component, the Distance Education Policy Initiative, are presented in a separate report, *Distance Education and the University Culture: Creating a Policy Environment for Distance Education—A Report of Three Policy Symposia*.

Background

The overall objective of the Faculty Initiative component of the IDE project was to provide participating faculty an opportunity to experience and examine issues related to the design and development of distance education programs and share their learning with others. Each IDE faculty member's college received funding support for one year of their three year commitment. Throughout the three years faculty and staff engaged in a series of project-sponsored activities including distance education project teams, professional development programs, and a series of colloquia and seminars.

During the funded year faculty were assigned "project teams" to support the development of their distance education programs. These project support teams drew upon distributed resources already available throughout the institution, including the expertise of staff members working in Continuing and Distance Education and the Center for Academic Computing. The IDE project enabled these teams to work together in a focused way over an extended period, to better coordinate and concentrate their efforts toward a common goal—development of new or enhanced credit courses and noncredit programs to be delivered at a distance using a variety of media.

Professional development opportunities for faculty and staff included a rich assortment of pedagogical, technological, and research forums and workshops related to distance education. These experiences enabled the faculty to enhance their ability to develop distance education courses, learn more about distance education issues and trends, and meet other professionals working on aspects of distance education.

Monthly project colloquia meetings were established to encourage discussion and reflection among faculty, support team members, other Continuing and Distance Education personnel, and IDE project administrators about issues, concerns, and strategies for developing an effective distance education program. Out of these discussions has come this document, *An Emerging Set of Guiding Principles and Practices for the Design and Development of Distance Education*. It reflects the experiences of Penn State, Lincoln, and Cheyney faculty and staff who participated in the IDE Faculty Initiative.

Process

The process used to establish this set of guiding principles and practices included:

- Developing a set of categories of guiding principles and practices for the design and development of distance education programs;
- Establishing IDE faculty and staff teams to address each category;
- Creating a computer conferencing system to support asynchronous team collaboration;
- Conducting a monthly series of IDE Guiding Principles and Practices colloquia designed to discuss and enrich the developing categories;
- Designing and implementing a one-day IDE Guiding Principles and Practices retreat to focus on content of the document;
- Developing draft versions of the Guiding Principles and Practices document that reflected the collective efforts of the six subgroups involved;
- Asking contributors and reviewers to read the draft document and provide feedback to refine and enhance the Guiding Principles and Practices;
- Presenting a draft version at the IDE Preconference of the International Council for Distance Education World Conference 1997 for further review and discussion;
- Refining and modifying the IDE Guiding Principles and Practices document through continued discussions, presentations, and conference settings;
- Applying the Guiding Principles and Practices to the third-year IDE faculty projects;
- Revising the Guiding Principles and Practices based on IDE faculty-team feedback during year three of the project.

Assumptions

The assumptions made explicit and discussed during the monthly IDE colloquia are provided here to help inform the reader's understanding and interpretation of this set of guiding principles and practices.

- The primary audience for distance education programs under consideration was the adult learner participating in an educational experience in which he or she is separated from the instructor or other learners by space and/or time. Although “traditional” college-aged learners are among those who participate in distance education, they are not the primary focus of this document.
- Successful distance education learners need to be independent individuals who are motivated and have focused learning goals in mind. Most adult learners need flexibility in program structure because of their other responsibilities, such as full-time jobs and family needs. Adult learners typically want practical information that they can use immediately. Some need to be taught how to use the technology needed for program delivery and assignments.
- The term “student” is used here when referring to an enrollee in an educational program for academic credit. The term “learner” is used to connote an individual engaged in any active process of learning, whether credit or noncredit.
- Distance education methodologies and technologies are used to support a wide variety of academic offerings, including credit and noncredit courses of study, single-day and multi-day symposia and seminars, and continuing professional education programs.
- Technology is viewed as a supporting element of, not the driving force behind, distance education program design. A defining characteristic of the new distance learning environment often is the establishment and maintenance of learning communities. A variety of technologies may be used to support these communities, including the World Wide Web, electronic mail, and computer conferencing software.
- At many of the participating institutions, distance education programs are approved by an academic unit of the institution in order to provide quality assurance regarding the instructor and content. Faculty participating in the design, development, and delivery of distance education are members of these academic units or are affiliated with or approved by them.
- “Author” is not necessarily the same as “instructor.” The author creates the course content; the instructor teaches the course or program. Someone can “author” a course or a program but may not necessarily teach it—and by “authoring” we include the preparation of electronic, as well as print-based media.
- The role of an instructor in distance education is likely to be somewhat different than in resident instruction and requires some specialized skills and strategies. Distance education instructors must plan ahead, be highly organized, and communicate with learners in new ways. They need to be accessible to students, work in teams when appropriate, and play the role of facilitator or mentor in their interactions with learners. Finally, they may have to assume more administrative responsibilities than is true in a residential model.

Distance Education Defined

Distance education/learning is a broad and all-encompassing term that is applied to a wide variety of program designs that can be delivered through an array of media including print, audio, video and computers. Each institution and entity engaged in teaching and learning at a distance defines the field according to its particular model. For the purposes of this document, distance education is defined as an educational system consisting of the methodologies and technologies that support learning when the learner and learning resources are separated by time and/or space. Various models of distance education programs can be described using the following program design matrix.

	Synchronous	Asynchronous
Independent		
Cohort		
Collaborative		

The design models for distance education programs may include synchronous and/or asynchronous activities. Synchronous events are those that require participation with others at a given time, whereas asynchronous interactions are not time-dependent. Independent learning activities are individually paced for learners who enroll and work independently with a cohort, or in collaboration with others. An independent learning student does not need to rely upon other students to complete their work. Cohort learning involves groups of individuals who move through a program of study with set start and end dates. In collaborative learning individuals within a cohort depend upon one another during at least part of the learning activity or experience.

Guiding Principles and Practices Categories Defined

The guiding principles and practices included in this document are grouped into five components. The first three major components refer to educational events. They are 1) Learning Goals and Content Presentation, 2) Interactions, and 3) Assessment and Measurement. The remaining two components undergird the educational events. They are 4) Learner Support and Services, and 5) Instructional Media and Tools.

The report begins with a summary section that lists the twenty-five principles. That is followed by a section in which each of the five categories is addressed in detail. Each of these five categories begins with a brief overview. Then each principle under the category is presented along with one or more representative practices that provide specific examples of how the principle might be implemented.

It will be evident that this set of guiding principles and practices is not limited to distance education methodologies or technologies. Many of the principles apply to face-to-face interactions as well. They reflect the premise that “good teaching is good teaching,” regardless of the media used.

Summary of Principles by Category

I. Learning Goals and Content Presentation

Principles

- 1.1 Learning goals should be defined as part of the instructional design plan.
- 1.2 Specific instructional activities should be directed toward providing learners with the necessary skills, knowledge, and experience to meet the goals and objectives of the course.
- 1.3 Evaluation of performance should be directed toward the measurement and assessment of the defined learning goals, just as these goals provide the basis for the selection of instructional learning strategies.
- 1.4 Instructional design and development support should include a wide range of services to faculty as they create and prepare instructional materials for delivery via distance education.

II. Interactions

Principles

- 2.1 Effective learning environments should provide frequent and meaningful interactions among learners, between learners and instructional materials, and between learners and the instructor.
- 2.2 To help reduce barriers to effective learning and establishing social relationships, participants should be afforded the opportunity to build confidence and competence with the distance education process and supporting technologies.
- 2.3 The use of electronic communications technologies should be considered as a tool for creating and maintaining learning communities for learners at a distance.
- 2.4 Distance education programs should employ creative solutions to fulfill the objectives traditionally achieved via residency requirements: interaction among faculty, students, and peers beyond direct instruction; access to advising and academic support services and resources; and socialization among those in the same field of study.
- 2.5 Social interactions between and among learners enrich the learning community and should be encouraged and supported in the instructional design and the delivery of educational programs.

III. Assessment and Measurement

Principles

- 3.1 Assessment instruments and activities should be congruent with the learning goals and skills required of the learner throughout a distance education program or course.
- 3.2 Assessment and measurement strategies should be integral parts of the learning experience—enabling learners to assess their progress, to identify areas for review, and to reestablish immediate learning or lesson goals.
- 3.3 Assessment and measurement strategies should accommodate the special needs, characteristics, and situations of the distance learner.
- 3.4 Distance learners should be given ample opportunities and accessible methods for providing feedback regarding the instructional design of the distance education program.

IV. Instructional Media and Tools

Principles

- 4.1 The selection and use of instructional media and tools should be based upon their ability to support the predetermined learning goals and objectives of the learning program.
- 4.2 The selection of instructional media and tools should be influenced by their accessibility by learners. A distance education program should incorporate a technology base that is appropriate for the widest range of students within that program's target audience.
- 4.3 The selection of instructional media and tools should reflect a thorough analysis and understanding of the “added value” of the technology.
- 4.4 Users of a distance learning system should be adequately prepared and supported in order to maximize the capabilities of instructional media and tools.
- 4.5 The design of programs delivered via distance education should take into account the diversity of potential learners.
- 4.6 Distance education programs should employ a systematic design model to guide the selection and application of media and tools.
- 4.7 Contingency strategies should be planned to provide a quick recovery from technology-related interruptions when the instructional design model relies on electronic technology for delivery.

V. Learner Services And Support

Principles

- 5.1 A comprehensive system of technical support services should be in place to ensure the effective use of technologies in distance education programming for learners, instructors, and staff.
- 5.2 Faculty should have access to adequate support and development services in the areas of applied instructional technology and effective distance education methodology.
- 5.3 Support systems should be designed to provide service seven days a week, twenty-four hours a day for faculty and learners. The support systems should be able to accommodate a geographically dispersed learning population across time zones.
- 5.4 Regular feedback mechanisms should be designed and implemented to assess the successes and failures of the various support services created for the distance education system.
- 5.5 Ensuring that the distance education mission of the institution is met requires policy adjustments and accommodations that support distance education instructors and learners.

I. Learning Goals And Content Presentation

The identification and articulation of the learning goals and objectives provides the foundation for the instructional design, development, delivery, and assessment of an educational event. These defined goals serve as an implied contract between the instructor and student, defining what is to be taught and what is to be learned. Communicating these learning goals is a crucial step in assuring an effective learning experience. Although the planned learning goals need not be altered for delivery via distance education, new instructional design strategies may be needed to support the intended outcomes.

1.1 Principle

Learning goals should be defined as part of the instructional design plan. Once defined, they should be publicly available and clearly and explicitly communicated to the learner in whatever manner suits the design model—in print, face to face, or via a Web site.

Representative Practices

- 1.1.1 Provide learners with a set of learning objectives at the beginning of a course or program of study.
- 1.1.2 Ask learners to design an “Action Plan” to demonstrate they understand and accept responsibility for achieving the learning goals. An initial assignment can be used to confirm that students understand the course goals. This will benefit nontraditional learners who bring work-related experience into the classroom. This approach also will assist learners to develop a plan for completing their distance education program.
- 1.1.3 If it becomes necessary to make changes in the “contracted” objectives the method should be negotiated with the learner and made public so that the learner takes ownership and understands the impact of these changes.

1.2 Principle

Specific instructional activities should be directed toward providing learners with the necessary skills, knowledge, and experience required to meet the goals and objectives of the education offering. The content should be sequenced and structured in order to enable learners to achieve the stated goals.

Representative Practices

- 1.2.1 When possible, use performance-based learning goals that are accessible and authentic in order to determine learners’ attainment of course goals and objectives.
- 1.2.2 Eliminate instructional activities that do not directly contribute to learning goals, since achieving outcomes generally requires more time and effort by distance education than in face-to-face instruction.
- 1.2.3 When possible, the learning goals for distance education learners should relate to real-life experiences through example and application. Designing strategies based on the prior experiences of learners are most likely to emulate real-life.
- 1.2.4 Try to provide a variety of learning activity choices to accommodate differences in learning styles and life experiences of the learner.

1.3 Principle

Evaluation of performance should be directed toward the measurement and assessment of the defined learning goals, just as these goals provide the basis for the selection of instructional learning strategies.

Representative Practices

- 1.3.1 Design formative and summative measurement and assessment methods that are congruent with the instructional activities and that will ultimately support student achievement of the learning goals.
- 1.3.2 Use varied and frequent self-assessment methods or low-stakes testing to guide the learner and provide quantitative feedback. Such activities should lead to increased understanding of the course materials.

1.4 Principle

Instructional design and development support should include a wide range of services to faculty as they create and prepare instructional materials for delivery via distance education.

Representative Practices

- 1.4.1 Secure in advance the required copyright clearances and licenses for a networked environment to provide all learners with access to necessary print and electronic resources.
- 1.4.2 Provide faculty with guidance and design support for appropriately constructing instructional materials for distance education programs. This may include helping them secure academic approval of course content, obtain the support of technical and instructional design specialists, and determine how best to integrate instructional technologies.

II. Interactions

When learners interact with one another, with an instructor, and with ideas, new information is acquired, interpreted, and made meaningful. Such interactions form the foundation of a community of learners. If students feel they are part of a community of learners, they are more apt to be motivated to seek solutions to their problems and to succeed. The challenge for distance educators is to develop strategies and techniques for establishing and maintaining “learning communities” among learners separated by space and/or time.

2.1 Principle

Effective learning environments should provide frequent and meaningful interactions among learners, between learners and instructional materials, and between learners and the instructor. When instructional technologies are employed as part of the educational program, the interface between the learner and technology should also be considered.

Representative Practices

- 2.1.1 Design instructional activities that require the learner to actively participate in the acquisition and processing of the educational content.
- 2.1.2 Create opportunities for learners to interact in formal program-related activities. When employing instructional technologies, create a “work space,” i.e., listserv, chat room, or other venue that encourages learners to share with each other and communicate about program-related topics.
- 2.1.3 Avoid incorporating too many formal interactions that require learner-to-learner participation. Activities in which learners are dependent upon each other require more time and energy to execute in a distance education mode.
- 2.1.4 Design systems that enable the learner to interact with the program instructor. These systems need to be carefully constructed in order to maximize the learner-to-instructor interaction without being too labor or time intensive for the instructor. When employing communications technologies, design systems that enable the instructor to communicate with all learners and reserve the use of one-to-one communication systems only when needed.
- 2.1.5 Clearly communicate the “rules of interaction” so that all participants can share the same experience. If using electronic communications technologies, specify student and instructor performance expectations prior to the start of the program.
- 2.1.6 Explain to participants in advance which educational technologies they will need to use—and why—and the resources that are available to support them in using these technologies.
- 2.1.7 Provide time and opportunity for learners and instructors to practice and master the technologies needed to interact with other learners, instructor(s), and learning resources.
- 2.1.8 Recognizing that technology can support multiple levels of interaction, implement appropriate technology to support the levels desired.

2.2 Principle

To help reduce barriers to effective learning and establishing social relationships, participants should be afforded the opportunity to build confidence and competence with the distance education process and supporting technologies.

Representative Practices

- 2.2.1 Practice with pilot groups or trial projects to gain confidence and competence with a new distance education model. Start with small groups and limited enrollments, and expand as experience and skill levels increase.
- 2.2.2 Provide faculty with access to experienced support staff and instructors willing to serve as mentors and resources for novice instructors.
- 2.2.3 Provide adequate training opportunities for all participants in the distance education program that address issues related to learning at a distance, using the supporting technology, and understanding rules and guidelines that help create an effective distance education experience.

2.3 Principle

The use of electronic communications technologies should be considered as a tool for creating and maintaining learning communities for learners at a distance. These technologies may also support active and collaborative learning activities.

Representative Practices

- 2.3.1 Examine each technology carefully to assess its capacity to establish and maintain interactions among participants.
- 2.3.2 Design instruction that supports collaborative and cooperative learning by encouraging positive interdependence (group projects), individual accountability, appropriate interpersonal skills, and/or group self-evaluation.
- 2.3.3 Use multiple levels of electronic communication, such as e-mail or audio-video conferencing, to provide the instructor with the ability to assess student understanding.
- 2.3.4 Consider the use of “low-tech” solutions for creating social communications such as arranging for conference calls or distributing mailing lists.

2.4 Principle

Distance education programs should employ creative solutions to fulfill the objectives traditionally achieved via residency requirements: interaction among faculty, students, and peers beyond direct instruction; access to advising and academic support services and resources; and socialization among those in the same field of study.

Representative Practices

- 2.4.1 Provide access to on-line remediation services, alumni services, and tutoring services.
- 2.4.2 Professional programs and/or certificate programs taught at a distance can satisfy the characteristics of the residency model through opportunities available in the learner's workplace or site of career practice.
- 2.4.3 Some portion of work in residence may be necessary in order to fulfill the objectives of doctoral and other academic programs. This residency may range from an initial orientation program to course work while in residence.

2.5 Principle

Social interactions between and among learners enrich the learning community and should be encouraged and supported in the instructional design and the delivery of educational programs.

Representative Practices

- 2.5.1 Through the use of electronic communications systems, create opportunities for interactions that support informal and social dialogue between learners. These opportunities need to adhere to institutional policy on providing and protecting student information, and should be sensitive to individuals' privacy rights by making socially related interactions voluntary.
- 2.5.2 Ask participants to offer their input and ideas on strategies for improving social relationships within the program.
- 2.5.3 Design methods for recognizing and maintaining the uniqueness and individuality of each learner in the distance education program.
- 2.5.4 Establish and maintain office hours or contact times throughout the duration of the program to encourage learner-to-instructor interaction through e-mail, telephone calls, or visits.
- 2.5.5 Communicate prior to the start of the program the rules of engagement for social interactions, including roles and responsibilities of participants, sensitivity to diverse student backgrounds, receptivity to other ideas, and appropriate etiquette for electronic communications.
- 2.5.6 Communicate clearly about institutional policy and consequences regarding student behavior for informal and formal interactions during program duration.
- 2.5.7 Accommodate variations in cultural "norms" about gender, age, and authority figures, so that learners are neither penalized for their cultural differences nor impeded in their learning processes by those differences.
- 2.5.8 Consider incorporating access to such external resources as on-line discussion groups and bulletin boards as part of an "extended learning community."

III. Assessment And Measurement

Assessment and measurement serve valuable purposes for both instructors and students because they provide information on learner progress, measure achievement of learning goals, and provide learners with benchmarks for monitoring their progress and adjusting their learning strategies. In a distance education model, assessment and measurement become even more critical in the absence of the face-to-face interactions that enable teachers to use informal observation to gauge student response, obtain feedback, and progress toward goals. Creativity in the design and approach to assessment and measurement strategies can serve both the instructor and the learner in the distance education setting.

3.1 Principle

Assessment instruments and activities should be congruent with the learning goals and skills required of the learner throughout a distance education program or course.

Representative Practices

- 3.1.1 Design the instructional activities throughout the distance education program in the same form and methods as will be used to measure mastery of the program goals. Instructional activities should lead toward measurable performance.
- 3.1.2 At the start of the program, communicate the planned assessment and measurement strategies to the learner. Clearly state the nature, duration, due date, and impact on program grade of all assignments and measurement techniques.
- 3.1.3 Where possible, provide assessment and measurement techniques and options that capitalize on the unique characteristics and situations of the distance learner.

3.2 Principle

Assessment and measurement strategies should be integral parts of the learning experience—enabling learners to assess their progress, to identify areas for review, and to reestablish immediate learning or lesson goals.

Representative Practices

- 3.2.1 Consider a variety of “low-stakes” assessment and measurement strategies that enable learners to gauge their progress without impacting course grade or performance measurement.
- 3.2.2 Create automated systems (e.g., on-line quiz tools, database programs) that can provide immediate feedback, relevant suggestions, and guided support in response to learners’ performance.
- 3.2.3 Develop techniques and systems that support learner-to-learner interactions for assessment and measurement.
- 3.2.4 Design as many self-check activities as possible within the distance education program, enabling students to adjust their progress within the course.
- 3.2.5 Consider credit for student effort (as contracted with outcomes) as one component in the assessment process when the skill being taught is complex.

3.3 Principle

Assessment and measurement strategies should accommodate the special needs, characteristics, and situations of the distance learner.

Representative Practices

- 3.3.1 Consider the use of synchronous technologies such as a teleconference or interactive compressed video for providing learners immediate assessment on work in progress.
- 3.3.2 Consider the use of asynchronous technologies such as electronic mail, bulletin boards, voice mail, FAX, and/or other technologies to support assessment and measurement activities.
- 3.3.3 Select media carefully when planning an assessment, recognizing that the use of several different media might be appropriate. For example, e-mail might be used to have students “describe,” on-line chats or telephone interviews might be used to have students “discuss,” and videotape might be used to “demonstrate” oral presentation skills or physical interactions, such as a counseling session.
- 3.3.4 Where possible, use assessment and measurement strategies that utilize resources local to the distance learner. For example, use projects based on learners’ employment as part of the assessment and measurement for the program.
- 3.3.5 If needed, help students make local arrangements to complete course assessments and evaluations.

3.4 Principle

Distance learners should be given ample opportunities and accessible methods for providing feedback regarding the instructional design of the distance education program.

Representative Practices

- 3.4.1 Provide students a forum for expressing their instructional needs, frustrations, challenges, and suggestions.
- 3.4.2 Promote student-generated questions by devising methods for anonymous submission.
- 3.4.3 Design student evaluations of course material as an instructional activity. Consider arranging students in small groups to assess course progress and improvement issues.
- 3.4.4 Consider a variety of evaluation techniques that may include, but are not limited to, mid-course evaluation forms, random student phone interviews, and post-course assessment instruments.

IV. Instructional Media And Tools

Instructional media and supporting software tools (e.g., Microsoft Word, Minitab, e-mail) have enabled distance educators to address the two primary barriers to distance education: the learner's feelings of remoteness and isolation, and the time it takes to complete an instructional transaction. Although the promise of new and emerging technologies continues to be realized, sound instructional design practices need to be employed in order to maintain the proper focus on the educational process. A thorough analysis of the role of the instructional media and supporting tools in achieving the learning goals, an understanding of the impact of the use of technology, and careful consideration of the characteristics of the distance learner should drive the media selection and application process. All technology used adds a cost to the system. For the learner, this cost is reflected in increased access costs for technology. For the delivery system, the cost is due to increased learner support needs. For the instructor, the costs may be due to the need for increased development and delivery resources.

4.1 Principle

The selection and use of instructional media and tools should be based upon their ability to support the predetermined learning goals and objectives of the learning program.

Representative Practices

- 4.1.1 Clearly define learning goals and objectives as a necessary first step in designing any distance learning program. Then select specific tools and media that will facilitate and enhance the realization of those desired outcomes.
- 4.1.2 Be aware that technologies may produce learning impediments as well as benefits. When infusing technology into the learning environment, there is a potential to incorporate superficially "innovative" strategies that may actually complicate or hinder learning. Such counterproductive activities, however attractive, can rob students of time and hinder their ability to focus on what is to be learned.

4.2 Principle

The selection of instructional media and tools should be influenced by their accessibility by learners. A distance education program should incorporate a technology base that is appropriate for the widest range of students within that program's target audience.

Representative Practices

- 4.2.1 Ensure that students have reasonable access to the technology that is contemplated for use in a distance education program.
- 4.2.2 Control costs and facilitate wider student access to instructional resources by using the lowest-level technologies capable of supporting the student in achieving the learning objectives.
- 4.2.3 Since distance learners may not have immediate and ready access to technical support services, select technologies that are stable and predictable and that are positioned comfortably behind the "leading edge technologies" that represent higher risk of failure.
- 4.2.4 Consider the use of locally available resources such as newspapers, journals, and community-based systems and services.

4.3 Principle

The selection of instructional media and tools should reflect a thorough analysis and understanding of the “added value” of that technology.

Representative Practices

- 4.3.1 Consider a “mixed media” approach to the design of distance education programs. Appropriately using print-based resources to deliver text-based content and electronic communications systems to support asynchronous dialogue capitalizes on the strengths of each medium.
- 4.3.2 Consider the relative benefits that may be derived from particular tools and media in relationship to the costs that students must incur to utilize them. For example, the download time for an enhancing graphic or animation that only marginally supports the instruction will add access cost to the learner.

4.4 Principle

Users of a distance learning system should be adequately prepared and supported in order to maximize the capabilities of instructional media and tools.

Representative Practices

- 4.4.1 Ensure that learners have a functional level of familiarity with any tools or media that are being considered, or build into the program the necessary training and practice required to gain a functional competence with the selected media and tools.
- 4.4.2 Design a “low-risk” instructional activity that enables the learner to experience an early success using the technology.
- 4.4.3 Design and introduce easy-to-hard instructional activities that build upon learner competence and confidence in the use of technology.
- 4.4.4 Create an adequate faculty development program to ensure that program planners and designers understand the full capabilities of selected instructional media and tools and know how to make the most effective and efficient use of them.

4.5 Principle

The design of programs delivered via distance education should reflect the diversity of potential learners. Distance learners bring varied social and cultural backgrounds and diverse experiences to a distance learning situation. The unique contexts in which learners live and work may influence the way they think about and use instructional media.

Representative Practices

- 4.5.1 Consider the age, maturity, and unique characteristics of learners, including disabilities, when selecting and using any instructional media or tools in a distance learning activity.
- 4.5.2 Consider the realities of time constraints that learners bring to their study and carefully select supporting tools and media that will provide the necessary flexibility and support for students’ learning experiences.
- 4.5.3 Consider the impact that the learners’ social, economic, and cultural backgrounds will have on their ability to use and benefit from any media or tools that you contemplate using.

4.6 Principle

Distance education program design should employ a systematic design model to guide the selection and application of media and tools. A wide range of technologies, both electronic and nonelectronic, may be used to deliver content, support interactions, and provide student access to instructional and administrative resources in a distance learning program.

Representative Practices

- 4.6.1 Familiarize learners and authors/instructors with the continuum of technologies, each with its own related complexities.
- 4.6.2 Carefully match desired instructional strategies (e.g., lectures, small-group discussions, role-playing) with appropriate supporting technologies.
- 4.6.3 Keep the mix of technologies selected for use within an individual course or program simple. Don't overwhelm or confuse the student by over-fragmenting course delivery.

4.7 Principle

Contingency strategies should be planned that will enable a quick recovery from technology-related interruptions when the instructional design model relies on some component of electronic technology for delivery.

Representative Practices

- 4.7.1 Design adequate, dependable, reliable, and easily expandable delivery services at the front end, rather than attempting to cope with systems that are unable to keep pace with the demands placed upon them during program delivery.
- 4.7.2 Build reasonable provisions for backup, technical oversight, and maintenance of the delivery system into the design of any distance education program. Where possible, plan redundant systems for key technological services.
- 4.7.3 Communicate clearly to the learner the performance expectations for the technology-based systems. Describe what to do, should the primary or supporting technologies fail.

V. Learner Services And Support

Among the most important components in the design of distance education programs are those that establish the organizational and administrative infrastructures to ensure that such programs can be efficiently and effectively developed, managed, and executed. The learner support systems and services required to establish and maintain an effective distance education experience must be at least as complete, as responsive, and as customer-oriented as those provided for the on-campus learner. In most cases, these services may be the only link the learner has with the institution, apart from the instructional activities.

In order to achieve this goal, alternative support methods must be employed to ensure that distance education students are not significantly inconvenienced or barred from getting the services required. Since distance education students have widely varying access methods available to them, redundant systems should be in place for many support functions. The overall support system should address the following areas: technical support, instructional resources, faculty development, instructional design and development, and policy changes aimed at creating an environment conducive to distance education.

5.1 Principle

A comprehensive system of technical support services should be in place to ensure the effective use of technologies in distance education programming for learners, instructors, and staff.

Representative Practices

- 5.1.1 Consider access needs for instructors, learners, and staff to the range of technologies included in the program design. This could include provision of software, hardware, server space, or Internet access accounts.
- 5.1.2 Train faculty and students in the use of “high-tech” instructional components of courses through a noncredit offering. Instructors and learners should come away from the training both knowledgeable about and comfortable with using whatever instructional resources the courses require.
- 5.1.3 Ensure that learners understand the equipment requirements and technology skills necessary to effectively participate in a program prior to their enrollment.
- 5.1.4 Provide a common platform delivery environment where possible. Clearly articulate the platform and capabilities that distance education programs will support.
- 5.1.5 Devise a system to ensure that instructional technology hardware and software capabilities remain reasonably current and in step with major shifts in the use of instructional delivery systems.
- 5.1.6 Provide adequate warning if system requirements change for learners already participating in a program, such as the need to upgrade technical systems in order to continue the course of study.

5.2 Principle

Faculty should have access to adequate support and development services in the areas of applied instructional technology and effective distance education methodology.

Representative Practices

- 5.2.1 Develop formal and informal support networks to initiate and maintain faculty involvement in distance education programs.
- 5.2.2 Foster faculty development through specialized training in emerging technologies and the application of technology to the curriculum. This may be accomplished in a variety of ways, including through the use of distance education methodologies and technologies.
- 5.2.3 Facilitate the design and delivery of distance education programming by addressing issues related to intellectual property, copyright fees, and royalties. Where necessary, these issues may require new institutional policies and procedures.

5.3 Principle

Support systems should be designed to provide service seven days a week, twenty-four hours a day for faculty and learners. The support systems should be able to accommodate a geographically dispersed learning population across time zones.

Representative Practices

- 5.3.1 Provide documentation, such as Frequently Asked Questions (FAQs), troubleshooting guides and procedures, and commercially available tutorials (in both electronic and print format), to address support questions without direct human intervention.
- 5.3.2 Provide “help desk” services for fielding questions and solving problems for learners and instructors during regular operation hours. Train help desk personnel to be prompt, courteous, and highly competent.
- 5.3.3 Consider creative support strategies to provide learner support during institutional off-hours. These may include use of student staff, “on-call” staffing arrangements, answering phone service, participation with regional institutions in other time zones, and contracting with external services for off-hours support.
- 5.3.4 Construct technology-based “just-in-time” support services where possible. This may include touch-phone help systems, on-line tutorials, or CD-ROM interactive troubleshooting systems.
- 5.3.5 Employ collaborative learning methods within the learning community, where appropriate, to ensure that learners derive benefit from others in their learning community. Help learners to consider their peers as valuable resources and offer them incentives to provide mutual help.

5.4 Principle

Regular feedback mechanisms should be designed and implemented to assess the successes and failures of the various support services created for the distance education system.

Representative Practices

- 5.4.1 Design strategies to continuously track the needs and satisfaction of distance education students. Obtain information to answer such questions as “Was technical support helpful?” and “How long did it take to solve the problem?”
- 5.4.2 Establish performance standards for customer support personnel. Provide incentives for them to give the best technical support possible.
- 5.4.3 Provide intelligent on-line help systems to allow students to “self-troubleshoot” if all lines are busy. Supply a voice mail box to capture requests, and return calls promptly.

5.5 Principle

Ensuring that the distance education mission of the institution is met requires policy adjustments and accommodations for supporting the distance education instructor and learners.

Representative Practices

- 5.5.1 Analyze and create new institutional policies where appropriate to account for potential increases in the design, development, and delivery expenses for distance education programs.
- 5.5.2 Revise fee structures that serve as barriers for students taking distance education courses (e.g. difference between “instate” and “out of state” tuition).
- 5.5.3 Pursue partnerships with other institutions and funding agencies to support the design, development, and delivery of distance education programming.
- 5.5.4 Institute policies that support and encourage learner participation in distance education programs. Create a greater awareness of the availability, viability, and benefits of distance education to students.
- 5.5.5 Ensure that distance education environments adhere to institutional policies regarding learners with specialized needs.

IDE FACULTY INITIATIVE

INNOVATIONS IN DISTANCE EDUCATION FACULTY:

(All faculty and staff listed are from Penn State's University Park campus, unless otherwise noted.)

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R. Thomas Berner, *Professor of Journalism and American Studies*

Philip L. Cochran, *Associate Professor of Business Administration*

James Flemming, *Associate Professor, Department of Education, Cheyney University*

Gregory S. Forbes, *Associate Professor of Meteorology*

Mazharul Huq, *Associate Professor of Physics, Lincoln University*

Brad G. Johnson, *Lecturer in Engineering/Plastics, Penn State Erie, The Behrend College*

Robert L. Jones, *Professor, Department of Family and Community Medicine, Penn State College of Medicine at The Milton S. Hershey Medical Center*

William J. Kelly, *Associate Professor of Theatre and Integrative Arts*

Jeffrey L. Kohler, *Associate Professor of Mining Engineering*

Robert J. Lesniak, *Associate Professor of Education, Penn State Harrisburg*

Peter H. Maserick, *Professor of Mathematics*

Judy Ozment Payne, *Associate Professor of Chemistry, Penn State Abington*

David Passmore, *Professor of Education*

Kyle L. Peck, *Associate Professor of Education*

Mary Frances Picciano, *Professor of Nutrition*

Donna Rogers, *Interim Head, Department of Spanish and Associate Professor of Spanish, Italian and Portuguese/Linguistics*

Glenda Shoop, *Generalist Physician Initiative Project Coordinator, Penn State College of Medicine at The Milton S. Hershey Medical Center*

Alan D. Stuart, *Associate Professor of Acoustical Engineering*

Joan S. Thomson, *Associate Professor of Agricultural Sciences*

Elizabeth Walker, *Information Technology Associate, University Libraries*

Carol F. Whitfield, *Associate Professor, Penn State College of Medicine at The Milton S. Hershey Medical Center*

Andrew Wolff, *Graduate Student, Department of Spanish, Italian and Portuguese/Linguistics*

Carol A. Wright, *Associate Librarian, University Libraries*

INNOVATIONS IN DISTANCE EDUCATION STAFF:

Gary Miller, *Associate Vice President for Distance Education and Executive Director of the World Campus: project director*

Deborah Klevans, *Director, Outreach Office of Program Development: project manager*

Lawrence C. Ragan, *Director, Instructional Design and Development for Distance Education and the World Campus: associate project manager*

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