Appendix A: Distance Education and Non-Traditional Education Terms

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First the term "distance education" must be defined. Simonson, Smaldino, Albright, & Zvacek (2003) cite Keegan's (1986) definition of distance education. They stated that Keegan identified five main elements of distance education that compose a comprehensive and modern definition of distance education. Keegan defined distance education as:

- The quasi-permanent separation of teacher and learner throughout the length of the learning process. (This distinguishes it from conventional face-to-face education.)

- The influence of an educational organization both in the planning and preparation of learning materials and in the provision of student support services. (This distinguishes distance education from private study and teach-yourself programs.)

- The use of media (print, audio, video, or computer) to unite teacher and learner and to carry the content of the course.

- The provision of two-way communication so that the student may benefit from or even initiate dialogue. (This distinguishes it from other uses of technology in education.)

- The quasi-permanent absence of the learning group throughout the length of the learning process so that people are usually taught as individuals and not in groups, with the possibility of occasional meetings for both didactic and socialization purposes.

Term	Definition
Assessment	Determination of a learner's ability to perform a task, as defined by a performance objective, to a minimum set of criteria.
Asynchronous	Not at the same time.
Bandwidth	How much data can be transferred from one computer to another per second defines the bandwidth.
CBT	Any training and/or education that uses a computer. This includes Computer Learning Centers, simulators, distributed disks, and networked computers.
Computer Based Examination	An examination conducted on a computer. An example of this is an examination that is created by the computer where each student receives a different subset of questions that are randomly generated by the computer from a question pool.
Computer Learning Center	Traditional classroom augmented by computers or different time/same place tutorials that people can log in according to time availability.
Cone of Experience	Edgar Dale (1946) put forth a theory of learning referred to as "Dale's Cone of Experience." In Dale's theory, children have to learn by direct exposure and experience because they have no previous knowledge base. Adults, on the other hand, have the benefit of previous experience to learn new information. This can be done by use of analogy. As learners grow older and have more experiences, it is possible to understand events that are less realistic and more abstract.
Correspondence Course	This is the simplest and oldest form of distance education. Assignments are mailed to the learner. The learner completes the assignment and returns it to the instructor for grading. Feedback is provided via mail and the next assignment is mailed to the learner. The cycle repeats until the course is completed. This form of education is inexpensive, can be completed anywhere, and has been proven effective.
Desk Top Two-way Audio/Visual	Progress is being made toward "desk top" two-way A/V through the use of Personal Computers. This will reduce the need for special equipment and special networking.

Different Time/ Different Place

This is what most people think of as distance education. The old correspondence courses were an example of this form of education. The newest form of this is the use of the web and programs such as Web CT, Blackboard, Embanet, etc. Learners and instructors can post assignments and study guides on the web, provide comments and conduct asynchronous conversations.

Different Time/ Same Place

Often thought of as independent study, this is self-paced study. It is still guided by an instructor; however, instructors may be available only during certain hours. Computer Learning Centers are an example of this concept. Learners still have to travel to a central learning facility.

Distance Instruction Planning

When planning for instruction at a distance, the focus shifts to more visual presentation, engaging the learners (learner centered versus instructor centered), and the timing of the presentation of material. Traditional materials are often revised to illustrate key points and concepts using tables, figures, and other visual imagery. Activities that encourage interactivity need to be incorporated. Student group work activities need to be well planned (this helps construct a supportive social environment). Plans must be made for alternative delivery because equipment failures occur. Contingencies must be discussed beforehand. Other considerations include: lack of eye contact and body language (informal feedback), increased time constraints, the necessity of established milestones, and increased time and/or complexity for distribution of materials.

Distributed disks/ CD ROM

Stand-alone training distributed via computer disks (of various sizes) and/or compact disks (read only memory). A USCG R&D study showed equipment training based on CD-ROM was effective and reduced the time required to train the equipment by 70% versus traditional classroom/lab training. CD-ROM is popular because it carries 75 MB of information. DVD is emerging technology.

Education Quadrants

Education is categorized in four quadrants according to the time/place relationship of the instructor and the learner. The four quadrants are Same Time/ Same Place, Same Time/Different Place, Different

	Time/Same Place, and Different Time/Different Place.
Mixed Methodologies	Courses that combine media and delivery methods. This could be an "on-line" course that uses text-books with assigned reading, on-line chat sessions, Web reference sites with self-paced tutorials, and audio bridges. Work assignments usually submitted by mail, e-mail, and/or posting to a Web page that is created by the learner and maintained on the school's server. There may even be face-to-face components via video and/or physical presence.
Networked (Web-based)	Currently limited by bandwidth. Can be mitigated by use of distributed disks that hold memory intensive files. Live video is the biggest problem in networked synchronous training.
Non-traditional education	Education that is other than instructor centered, instructor led, face-to-face education.
One-way Live Video	This is often referred to as "broadcast distance education." This was popularized in the 1950's by programs such as *Sunrise Semester.* This form of education is used primarily by Public TV and can also be augmented by other forms of pre-recorded media.
Pre-Recorded Media	As media developed, so did the use of media in correspondence courses. Printed material was augmented with pictures, audio recordings, and videotapes. The latest form of media transfer is Compact Disc.
Proctored Examination	An examination whereby the learner is supervised by a proctor. In distance application, proctors could be teachers or administrators who are selected by the learner and approved by the distance education institution. An alternative is for the learner to travel to a regional site sponsored by the distance education institution to take the final examination.
Project Report	Students complete a project and draft a report based on a research study or solution of a problem presented to them instead of taking a final examination.
Role of Media in	Media permit the educator to bring the sights and

Distance Education	sounds of the real world into the learning environment. It is important to be as realistic as possible when new information is presented.
Same Time/ Different Place	The instructor and classroom are "wired" to be transmitted to other locations. The most effective form of this education is full use of audio and visual multi-media. However, it can be just audio (such as a phone-bridge) or conducted via Web (using "chat rooms"). Interaction and feedback does occur between the instructor and the learners. The amount and type of interaction and feedback that occurs depends on the link used. (i.e., It is tough to read "body language" of the learners over an audio link.)
Same Time/Same Place	Traditional Education. The instructor and learner are located in the same place at the same time. Multi-media and computer-based learning can occur in this quadrant of education. However, this is most often thought of as face-to-face, didactic learning. The number of hours spent in this time of learning are often referred to as "contact hours." An advantage to this type of education is that communication and feedback are immediate and personal. A disadvantage to this type of education is that the instructor and learners have to travel to a central learning place at the same time.
Simulators	Simulators range from part task to high end "full mission" simulators. DNV has recommended standards for classification. Fidelity and realism are factors in determining usefulness of simulators in training and competency assessment. Simulators are relatively high cost. However, simulation provides experiential learning.
Synchronous	At the same time.
System Speed	Analog, or "twisted pair" networks are limited to thousands of feet. High speed systems are defined as capable of exchanging millions of bits per second (BPS). Medium Speed systems are defined as capable of exchanging 128,000 to 256,000 BPS. Low speed systems are capable of exchanging 56K BPS or less (typical of modems).

Systematic Process	Instructional Systems Design (ISD) is generally accepted as the systematic process that should be used in the design of instruction. The Coast Guard requires that Train-the-Trainer courses be based on ISD. There are generally accepted to be five phases (Dick & Carey) in the ISD process. Those phases are: Analysis, Design, Development, Implementation, and Evaluation (ADDIE). This is often referred to as the "ADDIE" model. The factors considered during the analysis and design phases include: learners, content, methods and media, environment, available technology, and the context in which it (content) will be taught.
Two-Way Audio	This is a synchronous form of education. It was the first widely used form of distance education. Instructors can lecture, ask questions, and lead discussions. Students can listen, ask questions and participate in the discussions. This is often augmented by pre-printed texts that are mailed prior to the lesson. This is modeled after the traditional classroom. A disadvantage is that instructors and learners can only hear each other.
Two-Way Audio with Graphics	This is two-way audio enhanced by graphic information that is sent synchronously to learners. This is usually done by graphics boards that are connected in several different locations. It can also be accomplished via simultaneous use of telephones and personal computers linked by the web or special software.
Two-Way Audio, One-Way Video	Courses offered synchronously from 2 to 100's of locations. The audio can be hard wired or have an "800" number for students' use.
Two-Way Audio/Video	Most two-way audio/video is conducted through specially wired and designed "smart classrooms." An example is Iowa Communications Network (ICN). Iowa has a goal of at least one "point of presence" (wired classroom for two-way audio/visual) in each of its 99 counties. These specially wired classrooms could be in schools, universities, or libraries.

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References

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