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**Accelerated Learning** programs are diverse techniques, methodologies and approaches to teaching and learning geared toward the whole person. They encompass a wide assortment of creative methodologies supported by current theories and the literature of how people learn best. Accelerated learning techniques are poised to enhance retention and performance. Their outcome is to produce more effective learners. Accelerated learning is appropriate for traditional classrooms in a wide range of subjects.

**Action Research** involves investigations conducted by students for the purpose of solving a problem or obtaining information. Typically those involved in action research generally want to solve some kind of day-to-day problem. Action research is a particularly appropriate strategy for teaching adults and professionals or to simply improve a learner’s ability to improve educational practice. Typically, action research follows the general procedures of the scientific process that calls for identifying the research problem, gathering the necessary information, analyzing and interpreting the information, developing an action plan, and testing the plan and revising the actions until the problem is resolved.

**Active Learning** allows students to talk, listen, read, write, and reflect on course content by way of practical, real-world problem-solving exercises. Small groups, simulations, case studies, role playing, and other similar hands-on activities are employed by the instructor. Students apply their learning and move up to the higher levels of learning taxonomy.

**Applied Learning** is a process of integrating one or more subject matter content areas (disciplines) with authentic (personal, home, career, community, society) learning experiences that apply to the home, career, or society. Applied learning provides experience in the problem solving process; the manipulative use of tools, equipment, materials and related techniques; personal skills; occupational awareness and safety. Applied learning is an effective strategy for learning many of the skills and concepts embodied in academic subject matter and relate directly to content and accepted performance standards.

**Assessment Alternatives** present a strategy for addressing critical questions about the value of instruction and quality of student learning outcomes. What am I doing? How well am I doing it? What do I need to do to improve? There are generally two kinds of data used in educational assessment or evaluation: quantitative and qualitative. A quantitative measurement uses input from a standardized instrument that limits data to predetermined set of responses. Qualitative measurement is more con-
cerned with descriptive input and is by nature more subjective. Also, educators generally recognize objective, subjective, self-assessment, and authentic assessments.

**Audio Conferencing** is a telephone conferencing service that uses regular telephone lines and a digital conference bridge to provide an inexpensive, flexible, and convenient method of communication. Using this service, individuals or groups at multiple locations meet for business or administrative purposes, saving travel expenses and time. Audio conferencing offers an alternative method of communication in distance education courses. Voice communication is delivered through standard telephone lines or web-based software either in real time and synchronously. When more than one person is at a location, speakerphones or special audio conference equipment is required. When more than two sites are involved, a telephone conference bridge is needed. Successful audio conferencing requires good audio quality, a reliable audio bridge, and comfortable or quiet environment to reduce noise. Some equipment used to facilitate audio conferencing includes high-performance speaker phones and headsets, or both. A well run audio conference requires planning, testing, and backup systems to ensure success.

**Audio Technologies**. Audio offers cost-effective (and technically uncomplicated) ways to enhance distance learning courses. Audio components of distance learning may take the form of a simple telephone call or it can be as complex as an audio teleconference with microphones, telephone bridges, and speakers. Telephones are one of the simplest, most accessible technologies used for distance learning. Voicemail is becoming extremely common. Audiotapes (cassettes) are inexpensive, easily duplicated, and very versatile.

Most every application of audio technologies is relatively inexpensive (especially when compared to multimedia and video applications). With the proliferation of the cell phone in the 1990s, it can be argued that every home (if not every person) has a telephone or immediate access to one. Learners have access to an audiotape player and/or CDROM in their home or car. And, almost every learner is at ease using audio electronics. On the down side, voice technologies, for the most part, are synchronous and require considerable attention by the both the instructor and the student with regards to a convenient time to initiate the conference. Finally, although audio-based learning is one of the most effective modalities for learning (19 percent of people have auditory learning preferences), students still have difficulty focusing on content presented entirely via audio (Sousa, 1997).

**Brainstorming** sessions share problem solving in an environment of collaboration in which all members of a group spontaneously contribute ideas. A problem is solved by rapidly generating a variety of possible solutions. The purpose of a brainstorming session is to work as a group to define a problem, and find, through a participatory intervention, the best group decision for a plan of action to solve it. Procedures for conducting a brainstorming session include: defining the problem, generating goals, delineating the objective, ascertaining resources and constraints, recommending possible strategies, and summarizing group decisions. The facilitator (i.e., the teacher) calls for suggestions from the participants, refuses criticism of any suggestions by anyone, and records all ideas without comment or critique.

**Case Studies** have historically been associated with business schools, law schools and social science classes, but have more recently be used in many other disciplines which explore issues and consider principles depicting real world situations. Case study methodologies have expanded to include the physical sciences, mathematics, literature, history, and certainly, adult education. They often take the form of real-word scenario (cases generally based on real world situations), supporting data and documents
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(effective cases using real world artifacts for students to analyze), and open-ended problems (cases that require students to answer open-ended questions or develop solutions to an open-ended problem). Case studies may be designed for teams or for independent learning.

**Character Education.** Since their inception, school systems (both public and private) have served the dual purpose of both raising standards of academic achievement and serving the moral and character development needs of society. Environments, activities, the arts, and service projects help students to appreciate the nature of citizenry demanded of graduates. They learn responsibility, compassion, integrity, civility, leadership and cooperation as well as math, science, and language. A well-developed character is mastered through examples and exercised by opportunities presented in the classroom.

**Cognitive Coaching** is a form of teaching intervention that has, as its primary purpose, the intention of enhancing self-directed learning. It is a combination of skills and strategies, maps and tools, and mental models and personal beliefs. Unique to this coaching model are the five conditions of efficacy, flexibility, consciousness, craftsmanship and interdependence. Used by the cognitive coach, these resources enhance and develop a learner’s self-directedness and ability to learn on their own.

**Collaborative Learning** is the instructional use of small groups so that students work together to maximize learning – both their own and their peers. Collaborative learning is governed by the amount of in-class or out-of-class time built around group work. Activities range from classroom discussions (with short lectures, if necessary) through entire class periods. A foundation in research and investigation as well as teamwork and collaborative relationships is critical to success. In collaborative learning, the development of interpersonal skills is as important as the learning itself. The development of social skills in a group work – learning environment is key to successful learning outcomes.

**Computer-Assisted Instruction** (CAI) is a narrow term and most often refers to drill-and-practice, tutorial, or simulation activities offered either autonomously via distance education or as a complement to traditional, teacher-directed instruction.

**Computer-Based Training** is any training that uses a computer as the focal point for instructional delivery. With CBT, training is provided through the use of a computer and software, which guides a learner through an instructional program.

**Computer-Based Technologies.** With the increased popularity of the Internet, computer-based technologies are receiving more attention as a modality for delivering distance learning. The primary computer technologies used for distance education include learning management systems (e.g., WebCT, TopClass, Web Course in a Box, and Learning Space); synchronous and asynchronous platforms (e.g., bulletin boards, chat rooms, and online discussion groups); and, Web-based education (e.g., web tutorials, simulations, interactive projects, and virtual tours).

Computer-based technologies encourage self-directed learning. Computers encourage learners to proceed at their own pace, solicit feedback instantaneously, and evaluate their learning outcomes as often as they like making them a natural for distance-based instruction. Another key advantage of computer-based technologies is their ability to incorporate text, graphics, audio, and video into a single content modality. With the trend toward digital audio, digital video, and computer animations, it is easy to incorporate various media into computer programs. Also, they encourage a high level of interactivity. They are relatively inexpensive and can be accessed worldwide.
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Computer technologies for distance learning require a considerable outlay in hardware and software that, until the advent of the 21st century, was often beyond the financial resources of many learners. Successful application of these technologies demands a substantial investment in design, development, implementation, and evaluation. Considerable preparation time and expense must go into each lesson and considerable preparation on the part of the instructor must precede the delivery of each lesson. Finally, as most users of technology are quick to admit, computers are notoriously unreliable. Previewing the technology, practicing the lesson, and preparing a backup (preferably non-technical) in case of emergencies is standard fare.

**Computer-Managed Instruction** is an instructional strategy whereby the computer is used to provide learning objectives, learning resources, and assessment of learner performance. CMI aids the instructor in instructional management without actually doing the teaching.

Often, CAI, CBT, and CMI are used interchangeably to describe technology-assisted learning. The most common techniques employed include: (a) the tutorial, used to introduce new information that must be taught in a sequential manner, (b) drill and practice that promotes mastery of a new skill or information and is typically used after initial instruction, (c) simulations to motivate and engage the learner with instruction that replicates real-world situations not otherwise available in a traditional classroom environment, and problem solving to help students develop skills in logic, solving problems, and following directions, and is generally used to augment higher order thinking skills.

**Conferencing** is a generic term that, thanks in large measure to the burgeoning technologies, is defined as formal or informal discussions for the purposes of exchanging opinions or ideas. From an educational perspective, conferencing also involves instruction between a teacher and a student or small group of students. Current educational use reflects more of the interchange idea, with the student being an active participant in the discourse as well as a recipient of content. Conferencing has become more widely used as a classification of teaching at a distance. For example, computer conferencing, audio conferencing, teleconferencing, web conferencing, and video conferencing are all manifestations of the idea that instruction can be delivered not as a one-way didactic presentation but more effectively (especially for adults) as an interchange of ideas. The instructor takes on a more facilitative role; whereas, the learner will adopt a more active participant role.

**Conflict Resolution**. The purposes of conflict resolution are to provide an environment in which learners feel physically and psychologically free from threats and danger and seek out opportunities to work and learn with others for the mutual benefit of all concerned. The diversity of the school’s population is respected and celebrated. Conflict resolution is particularly appropriate in adult education. A report entitled, “Conflict Resolution Education: A Guide to Implementing Programs in Schools, Youth-Serving Organizations, and Community and Juvenile Justice Settings,” a joint report from the Office of Juvenile Justice and Delinquency Prevention and the Office of Elementary and Secondary Education goes on to define four basic approaches to conflict resolution education:

- **Process Curriculum**. This approach is characterized by teaching conflict resolution as a separate course, a distinct curriculum, or a daily lesson plan.
- **Mediation Program**. Selected individuals (adults and/or students) are trained in the principles of conflict resolution and mediation to provide neutral third-party input to assist others in reaching resolution to a conflict.
• **Peaceable Classroom.** This approach integrates conflict resolution education into the curriculum and classroom management strategy.

• **Peaceable Schools.** Built on the peaceable classroom approach, this strategy uses conflict resolution as a system for managing the school as well as the classroom. Every member of the school community, including parents, learns conflict resolution principles and processes.

**Cooperative Learning** is one of the best researched of all teaching strategies. The results show that students who have opportunities to work collaboratively, learn faster and more efficiently, have greater retention, and feel more positive about the learning experience. Cooperative learning utilizes small group tenets that call for students of different levels of ability to use a variety of learning activities to improve their understanding of a subject. Each member of a team is given responsibility for learning the content material and for helping peers learn as well, creating an atmosphere of both achievement and interpersonal fulfillment. Cooperative efforts often have beneficial side-effects such as mutual increase from the expended efforts of the team (i.e., the whole is greater than the sum of its parts), from the realization that the team shares a common fate regarding success or failure (i.e., sink or swim), individual performance is mutually-inclusive (i.e., the team cannot succeed without everyone’s contribution), and pride in success results from group achievement (i.e., a characteristic to be found later in life).

**Critical Thinking** is the ability to consciously examine the elements of one’s own reasoning abilities, to assess another’s abilities, or to evaluate any reasoning against universal intellectual standards for clarity, accuracy, precision, relevance, depth, breadth, and logic. Critical thinking has five important components: skill, responsibility, sound criteria, sensitivity to context, and self-correction.

**Differentiated Instruction** suggest creating multiple paths so that students of different abilities, interest or learning needs experience equally appropriate ways to succeed in the classroom. Differentiation can occur in the content (knowledge, skills and attitudes taught), process (varying instructional activities or strategies to provide appropriate methods for learning), product (working below, at, or above grade level), or environment (learning styles) in the classroom. Differentiating instruction allows students to take greater responsibility and ownership for their own learning, and provides opportunities for team-teaching and cooperative learning.

**Direct Instruction** has a long and well-documented history in the traditional classroom. Lectures, demonstrations, drill and practice, Socratic instruction, storytelling, and workbooks continue to be an important teacher-centered strategy for the traditional learner. Highly structured, the direct information delivery method often relies on drills, repetition, and scripted materials and provides the teacher with a strong, structured framework for imparting information and tracking learning outcomes.

**Discussion Boards** are asynchronous collaboration tools that host an individual’s posted comments or questions. Other individuals who are members of the same discussion board are permitted to read the posted comments/questions and respond with their own remarks as they see fit. A discussion board is a general term for any online bulletin board. Some discussion boards are controlled and the posts monitored by a moderator before the posts are uploaded. From a historical perspective, the first major implementation of the discussion board on the Internet was hosted by Usenet who ultimately provided thousands of discussion boards before moving to the World Wide Web for its platform. A discussion board is similar to e-mail without the need for a specific user account or the demands of storing and
organizing the content. A discussion board is comprised of various forums, folders established by the contributing users containing messages on a particular subject.

**Distance Learning** is defined as a technology-supported learning environment in which the learner and the instructor are physically separated by distance, time, or both. Distance learning makes use of online learning management systems, synchronous and asynchronous technology, and a host of instructional technologies to organize, present, and assess the intellectual content, delivery, and evaluation of instruction. A distance learning course has two components: the academic, subject matter content and how that content is delivered. The delivery of distance learning courses demands an understanding of learning theories as well as technology for successful learning outcomes.

**eBook** is an electronic version of a traditional print book that resides on a personal computer or a portable device such as a laptop computer, PDA or e-book reader using eBook software. Copious e-books can be kept on portable units for traveling, eliminating weight and volume compared to equivalent paper books. Electronic bookmarks make referencing easier, and most readers allow the user to annotate pages. Technical and educational material (i.e., text books) are especially suited for e-book delivery because it can be searched, indexed, and copied. Most CDROM-based eBooks contain the entire text of the work have been included in the back of many technical paper books. Users typically purchase an eBook on diskette or CD or downloadable the file of the eBook from a Web site. Generally, an eBook can be downloaded in five minutes or less. The major shortcomings of the e-book are the many formats competing for prime time, including Adobe PDF (most popular), as well as Microsoft Reader, eReader, Mobipocket Reader, OPS and OpenReader.

**ePortfolio** is an authentic assessment tool that enables learners to chronicle their learning by giving them a medium for organizing, storing, and displaying their skills, academic and career goals, and professional potential. The ePortfolio is an instrument that facilitates mobility and acknowledges formal and informal learning over a lifetime in a particular career or vocation. For example, the concept of Teacher as Learner, Teacher as Expert, and Teacher as Scholar answers the question of WHO would be using the portfolio. Educators display characteristics of three different natures over the span of a 30-year career in education. An internal assessment of where the portfolio user is in an academic career must be considered before the correct format of the portfolio can be developed. ePortfolios have a multitude of uses. They can be used to assess communication skills such as writing; provide evidence of student learning outcomes; track learner progress towards course, standards, program, institutional, district, state, and national standards; serve as a platform for authentic classroom assessment, Maintain an unofficial record of academic performance, credentials, certification, and career development; and, link a learner to peers and colleagues. Categories or components of an effective ePortfolio include collecting folders in which artifacts are stored initially as the learner gathers content area materials, classroom resources, library resources, and world wide web sites; working folders where new skills are acquired as the learner seeks to make connections, reflect and self-assess, prepare learning projects, and apply lessons learned; and, showcase folders that contain permanent artifacts of service, teaching, scholarship, and professional (Wilcox & Tomei, 1999).

**Graphic Tools.** A majority of learners are visually oriented. As a result, graphic tools such as illustrations, charts, diagrams, and photos are often more successful than words in explaining instructional content. Visual aids transform abstract ideas into concrete concepts and aid the learner in moving information from short-term to long-term memory. A few specific examples of graphics tools include
clustering, spider map, writing chart, concept mapping, fishbone maps, events chains, cycle circle, and continuum scale.

**Guided Reading/ Listening/ Speaking.** Guided learners develop positive attitudes to the communications skills associated with reading, listening, and speaking. In a guided environment, teachers assist their students in recognizing, experimenting, developing, and finally adopting personal strategies that enable them to make sense of the world around them. They explore new language concepts and witness how these literacy features aid in responding critically to the ideas and concepts presented. On the downside, when students are placed into groups according to their perceived needs, educators often bristle at the appearance of grouping. Yet, in the case of communicative skills, when teachers plan their instructional decisions based on a close relationship with the participants, teaching groups often produce better learning outcome results.

**Guided Writing.** Similar to the purpose and outcomes of guided reading. Listening/ speaking guided writing continues the teaching strategy of extending and developing written text and independent writing. Guided writing involves the instructor and a small group of students focused on creating individual written assignments. Teachers respond to these attempts by considering the target audience, purpose of the writing, topic(s) selected, text type selected, and other factors specific to writing. The purpose of this strategy is to extend the student’s thinking process, help them focus on conventions such as spelling, punctuation, standard usage and handwriting, and ultimately encourage students to revise and edit their writing as part of a self-evaluative process of writing.

**HyperBook** is a text-based, workbook-centered teaching strategy integrating images, real-world exercises, visual aids, and real-time links appropriate for learning and assessment. (Tomei, 2001). To be successful, the HyperBook is created in an environment rich in word processing, graphics, and the Internet. The HyperBook lesson offers learners an opportunity to work together in groups. Text-based material is very effective in helping students comprehend new concepts using diagrams, outlines, and summaries. It opens the door for individualized discovery and inquiry learning opportunities and encourages learners to learn on their own. Many teachers prefer to combine text-based workbooks with web-based lessons. Some use the workbook to encourage parents to assist their child with online research. Others find the HyperBook useful in verifying that students personally accomplished the assigned exercises. Designing, developing, implementing, and evaluating the HyperBook was presented earlier in Chapter 8, Text-Based Resources for Teaching the Traditional Learner.

**IDEAL Problem Solving.** During the 1960s and 70s, researchers developed general problem solving models to explain problem solving processes (Bransford & Stein, 1984). The assumption was made that by learning abstract (decontextualized) problem solving skills, one could transfer these skills to any situation (context). One example of this general problem-solving model is Bransford’s IDEAL model: 1) identify the problem, 2) define the problem through thinking about it and sorting out the relevant information, 3) explore solutions through looking at alternatives, brainstorming, and checking out different points of view, 4) act on the strategies, and 5) look back and evaluate the effects of your activity.

**Inquiry** is a form of independent learning strategies that involves the learner in the act of constructing new knowledge. Using this strategy, learners evidence skills and attitudes that promote the process of seeking facts, information, or knowledge by questioning. The process of inquiring begins with gathering information and data through the physical senses of seeing, hearing, touching, tasting, and smelling. But
the process moves quickly past sensory perception into the realm of questioning, problem-solving, and critical thinking. Some students prefer this type of learning approach because they better understand concepts and abstract ideas when they are more involved in the learning process. 

**Inquiry Learning** (or inquiry-based learning) is a strategy for learning where students formulate investigative questions, obtain factual information, and build solutions that ultimately reflect their alternative hypotheses to the question. The Inquiry Learning model takes advantage of students' natural curiosity. For adults, inquiry learning expands their questioning skills and helps them develop strategies and processes for collecting and evaluating information. The process consists of the following steps. First, definition of the essential question where students form the essential question that becomes the basis of the inquiry. Second, hypothesis generation where students work in small groups or pairs to form hypotheses for the possible alternatives to be explored. Third, gathering information (i.e., investigation and research) that calls for learners to work collaboratively in groups to identify suitable resources for subsequent investigation in terms of accessibility, up-to-date information, readability, and quality. Fourth, synthesis of the alternatives to evaluate, develop test scenarios and criteria, and select alternatives for further inquiry. Students examine their subsidiary question again. Fifth, Reporting examines all relevant information investigated to solve the essential question. Finally, answering the essential question affords the learners a chance to defend their approach to the essential question in light of new knowledge. Students are asked to think critically about a solution or new insight, and about action they may be able to take.

**Instrumental Enrichment** is an instructional technique designed to enhance the cognitive functions necessary for academic learning and achievement. The fundamental assumption of the program, based on the theory and research pioneered by Professor Reuven Feuerstein, is that intelligence is dynamic and modifiable, not static or fixed. Thus, the program seeks to correct deficiencies in fundamental thinking skills, provide students with the concepts, skills, strategies, operations, and techniques necessary to function as independent learners, to diagnose and, and to help students learn how to learn. (Ben-Hur, 2000)

**Issue-Based Analysis** in the classroom helps students develop the skills of critical analysis and life-long learning while dealing with the ever-changing nature of knowledge and information. The strategy is used to help learners make decisions about the issues they will face in the future. An issue is basically defined as a topic with no clearly-defined single outcome or answer about which reasonable people might be expected to differ. Issues can also be framed in terms of a case study (see definition of Case Study), particularly those known as decision dilemma cases. Issues most useful for teaching adults are characterized as “data-rich,” so learners have an opportunity to consider and evaluate potentially contradictory evidence, as well as to understand how that evidence was generated.

**Integrated Thematic Instruction** is a comprehensive school improvement model designed to increase student performance. Advocates of thematic instruction organizes their curriculum around macro subject matter, integrating basic disciplines like reading, math, and science with the exploration of broader subject areas such as global communities, rain forests, energy, etc. Thematic instruction is based on the supposition that learning new knowledge is facilitated when it occurs within the context of a perceived “whole.” Thematic instruction places the teaching of reading, mathematics, science, and writing in the context of a real-world application that is both specific enough to be practical, and broad enough to allow personal exploration.
Interactive Lesson is a visual-based, classroom-centered teaching strategy appropriate for learners of all ages who benefit from concrete, sequential instruction imbedded with real-time assessment necessary to assure student learning. To be successful, the Interactive Lesson integrates self-paced content with specific, logical, systematic instruction that places a good deal of the responsibility for mastering the material directly in the hands of the learner. The Interactive Lesson embraces mastery learning techniques and suggests alternatives for presenting learning objectives, corrective instruction, and enrichment activities. A summary of the key components of a successful Interactive Lesson include:

The lesson overview page containing, as a minimum, the introduction to the topic, instructions, time allotted, lesson goals, and any review of prior knowledge.

Elements of the first few slides of the interactive lesson that include: selected questions to arrive at the level of student understanding of the topic, positive feedback slide to reinforce the correct response, negative feedback slide to provide the correct response and encourage further student exploration, transition slide moves the learner from the pre-lesson to the body of new material.

Learning objective component includes: a series of slides containing content material presented in the following sequence, objective title slide, content slide(s), formative assessment slide(s), summative assessment slide(s) recap the lesson goals with a measurement of student learning outcomes over the entire lesson, follow-on activities with additional information (e.g., web sites) for student enrichment activities, and additional resources such as videotapes, audiocassettes, and publications.

Learning Log/ Journaling is an incredibly flexible instructional tool, useful across many curriculums, especially for adults. Journals, thinking journals, thinking logs (all terms used synonymously) give learners an opportunity to express their ideas, observations, emotions, and writing without fear of criticism. Some of the benefits of journals include the ability to reflect on classroom experiences (instruction as well as activities); the capacity to judge solutions to problems and their potential repercussions; the chance to establish relationships with peers, teachers, and others; the opportunity to reflect on personal values, goals, and ideals; the practice of summarizing ideas, experiences and opinions before and after instruction; and, an occasion to witness one’s own academic progress by tracking past entries and recognizing personal growth.

Learning Styles. A learning style is a student’s personal schema for attending, responding, remembering/ recalling, and using stimuli from the environment to acquire new knowledge. Learning styles are not really concerned with what a learner learns (i.e., content, subject matter, or substance) but rather how they prefer to learn (i.e., the psychology of education discussed earlier as a key Pillar of Education). Learners bring their own individual approaches, talents and interests to the classroom. Research has also identified an individual’s culture, family background, beliefs, and socioeconomic level as critical factors affecting learning. These beliefs, principles and levels have an important impact on the opportunities for success for every student in our schools. The learning styles theory implies that how an individual learns is dependent more on whether the educational experience in the classroom has been designed and delivered to target a particular style of learning and less on the native intelligence (i.e., IQ score) of the learner. As discussed in this chapter, traditional learners use many learning styles, the most appropriate being visual, linguistic (verbal), logical (mathematical), interpersonal, intrapersonal, convergent, and accommodative styles of learning.
Lecture. The lecture method remains the most frequently used method of instruction of the traditional learner. While the effectiveness of the lecture method also remains in question because of the ostensible lack of interaction, it continues as a primary methodology for reaching large groups simultaneously with a targeted, organized body of knowledge. Lectures can be very effective when used in conjunction with active learning and teaching strategies. For example, maintaining good eye contact along with a high degree of perceived enthusiasm; using a natural, conversational voice for the presentation; emphasizing important points by the use of gestures, repetition, and variation in voice; and, employing formative assessment techniques throughout the presentation often results in effective learning outcomes. Advances in technology have also contributed to an expanding chronicle of increased relevancy for classroom lecture presentations.

Mentoring is a term that describes a relationship between a less experienced individual (protégé) and a more experienced sponsor known as a mentor. Traditionally, mentoring is viewed as a dyadic, face-to-face, long-term relationship that fosters the protégé’s professional, academic, or personal development (Donaldson, Ensher, & Grant-Vallone, 2000). The process of mentoring involves either a one-on-one relationship or a network of mentors who support the initial introduction of the protégé. Two categories are usually used to describe mentor roles: psychosocial and career-related. Psychosocial mentoring involves roles such as counselor or colleague. Career-related mentoring involves roles such as coach or advocate.

Metacognitive Reflection. Metacognition is thinking about how we think, about how we know, and about how we learn. Metacognitive reflection pertains to how learners think about their own thinking and learning and describe the processes that they engaged in during problem-solving, for example. Metacognitive reflection on learning questions habitual or traditional learning behavior and encourages a wider range of approaches to students who wish to enhance their thinking abilities.

Multicultural Education is a strategy for teaching that is grounded in ideals of social justice, education equity, and a dedication to facilitate educational experiences in which all students reach their full potential as learners and as socially aware and active beings, locally, nationally, and globally. Multicultural education acknowledges that schools are essential to laying the foundation for the transformation of society and the elimination of oppression and injustice. The underlying goal of multicultural education is to affect social change. The pathway toward this goal incorporates three strands of transformation: the transformation of self, the transformation of schools and schooling, and the transformation of society. (Gorski, 2008)

Multiple Intelligences. In 1983, Howard Gardner introduced his Theory of Multiple Intelligences in Frames of Mind (Gardner, 1983). Based on his work as a teaching professor, brain researcher, and supporter of the arts, Gardner expanded his foundational arguments that intelligence is not a single attribute that can be measured and quantified. His investigations into verbal, logical-mathematical, and spatial intelligence surfaced factors of learning that were heretofore sloughed off as incidental to “common intelligence.” Believing that there are varying kinds (and quantities) of intelligence has turned education on its head. Teaching all students (especially traditional students) using the same instructional strategies ignores the important aspects of human capacity that suggests other ways of teaching material might produce more effective learning. Currently, Gardner’s theory of multiple intelligences include: visual, spatial, bodily/kinesthetic, musical, logical-mathematical, linguistic, interpersonal, and intrapersonal
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intelligences. Recently, he added naturalist intelligence and suggested that in the future other possibilities (e.g., spiritual and existential) might be identified and incorporated into his list.

**Oral Presentation.** Delivering an address to a public audience. A public recitation or narration (usually from memory) and prepared in advance. The act of delivering a formal spoken communication to an audience in the classroom. Formats for oral presentation include the introduction (background information, the reasons for the presentation, any hypothesis to be tested, etc.); the question (the experimental design, testing and controls, major procedures performed); the results (clear and concise explanation of the data); and the findings and Recommendations (interpretation of results and recommendations for further study).

**Peer Practice** (often used interchangeably with the term Reciprocal Learning) is a learning strategy based on collaboration between students rather than independent learning. Learners are taught to help one another succeed in completing tasks and learning objectives. Students develop cooperative skills while simultaneously working closely with teachers to cover the curriculum. In this strategy, students work together as peer partners, alternately serving as the learner and the guide in completing the task. Peer Practice is a proven method to reinforce content since it is the peer relationship that, first and foremost, fosters immediate feedback. The strategy has also been found to benefit students throughout their life as they develop lifelong learning skills to collaborate and decipher information.

**Peer Teaching** is a recognized strategy for teachers in the classroom and teacher education in general. Peer teaching is concerned with the practice of “teachers teaching teachers.” Peers assume a role of learning from their colleagues, receiving feedback, and reflecting on experiences presented. As a pedagogy, peer teaching shifts the total responsibility for the structure and delivery of the lesson away from a single teacher (via lectures or didactic lessons) and focuses instead on modeling exemplary practice.

**Podcasting.** A type of media file that is distributed over the Internet and can be replayed on personal computers or portable media players. A method of syndication that offers direct, automatic downloading and streaming of video and audio. This method is widely being used to service the millennial generation of students.

**Portfolios** are collections of student work and artifacts that represent particular student performance. Portfolios in the adult classroom are derived from the visual and performing arts tradition which showcased artistic accomplishments and preferential works. A portfolio may be a folder containing a learner’s best pieces or it may be a placeholder for works-in-progress. Portfolios may take the form of physical folders or electronic media. Teachers of adults use portfolios in all curricular areas as a means to support new instructional approaches and promote the student’s role in constructing and demonstrating new knowledge.

**Problem-based learning (PBL)** is a focused, experiential learning strategy that focuses instruction on the investigation and resolution of real-world problems. PBL curriculum provides authentic experiences that foster active learning, support knowledge construction, and integrate school learning and real life, making it an ideal strategy for working with the adult learner. Students become engaged problem solvers, identifying the essential questions inherent in problems posed and the conditions required for a good solution. Teachers serve as problem-solving colleagues rather than lecturers. They model interest and enthusiasm for learning and coach those who need an environment that supports open inquiry. (Torp, L. and Sage, S., 2002).
Print Materials. Printed matter continues to serve as the primary source of instructional content. As a primary source, distance students might use a textbook to prepare for a specific topic or content area. Other print-based technologies such as e-mail would be used to submit questions or upload assignments. Text-based materials also take the form of worksheets or study guides used together with other distance technologies. Some of the advantages to incorporating print materials include their portability, level of familiarity to most students, cost effectiveness, and availability.

Disadvantages of print materials include their limitations with regards to personal interaction, lack of visual and audio components accepted by many learners, a requisite level of reading and comprehension language skills, and the built-in delay required to distribute the printed matter.

Reciprocal Teaching is a learning style and teaching strategy for improving academic skills. Grounded on the development of comprehension through direct engagement, teachers engage in dialogue with students using four strategies: generating questions, summarizing, clarifying and predicting. The approach fosters comprehension techniques enabling learners to construct their own meaning from the content of the instruction presented.

Reflection is the capacity to exercise introspection in the pursuit of personal growth. For the adult, reflection involves an examination of how learning can be fostered by a self-critique of failure as well as success, personal goals and life ambitions, learning and enjoyment, education's role in professional development, actions necessary to move forward when confronted with private obstacles, time management, interpersonal relationships with teachers and peers, fears and apprehensions, shortcomings in knowledge and skills, and more.

Round Table. An education Round Table is a network to promote partnerships of educators, faculty, staff, administrators, and others responsible for the delivery of instruction and high quality education as well as corporate training. Programs that develop under a round table approach have a higher success rate in education than those developed in a vacuum of administration. Round tables typically develop their own unique set of tools to determine these needs of each classroom and tailor programs specifically to those needs. In adult education, a round table can facilitate a needs analysis, finding common academic content, link education to corporate business strategies, identify potential grants, develop appropriate curriculum materials, connect with educators in other programs as well as national networks and organizations, and sustain long range planning.

Seminars are didactic teaching strategies in which participants share experiences regarding a focused topic or content area under the guidance of the instructor or an expert in the field. Most seminars are single sessions; short meetings dedicated to presentations on and discussion of a specialized topic, usually at an advanced or professional level. In adult education, a seminar can take the form of an entire course of specialized study under faculty supervision, in which ideas, strategies for teaching and learning, and real-world experiences are shared among participants.

Service Learning as a method where students learn and develop personally and professionally by participating in organized activities that meet identified community needs. Service learning is integrated into the student’s academic curriculum and provides time for them to think, talk, or reflect on actions and service activities. It also provides opportunities to use newly acquired skills and knowledge in real-life situations. The Corporation for National Service (1993) established eight essential elements of service learning, that include the following: meet actual community needs; be coordinated in col-
laboration with school and community; be integrated into the youth’s academic curriculum; provide structured time for students to think, talk, and write about what he/she did during the service activity; provide students with opportunities to use newly acquired skills and knowledge in real life situations in their own communities; enhance what is taught in school by extending student learning beyond the classroom; help foster the development of a sense of caring for others; and, encourage the ethics of citizenship and social action.

**Simulation.** The use of games and simulations in education is well documented in history and in the recent literature. They have been used in preschool, K-12, the university, the military, business, and by adults. Simulations have potential educational application in two key areas. First, simulations serve as a replacement for real world experiences. They are cheaper, safer, and more accessible than the real thing in many educational situations without placing the student at risk. Second, simulations are adaptable and accommodating, helping students learn underlying theories based on hypothesizing, testing, revising suppositions, and re-testing to produce the desire (or expected) outcomes.

**Small Group Discussion.** Most researchers define a small group as having at least three, but no more than twelve members. To be considered a “group,” the membership of at least three can utilize an organizational structure, albeit very rudimentary. Any group larger than 12-15 hinders their ability to communicate effectively across the membership. Small group discussions require a capability (using face-to-face or technology-based) to communicate freely and openly with all of the other members of the group. Small groups develop rules and customs about discussions as well as roles which affect their ability to interact. A group must have a common purpose or goal (supplied by the instructor in the form of learning objectives and lesson goals) and the environment is situated in such a way that all members must work together to successfully achieve the goal.

**Social Learning Theory** suggests that students learn through observing others’ behavior, conduct, and attitudes and the resulting outcomes of those behaviors. In social learning theory, human behavior is explained in terms of personal factors, environmental influences, and behavior and the impact of their continual interaction. A basic premise of social learning theory is that people learn not only through their own experiences, but also by observing the actions of others and the results of those actions. “Most human behavior is learned observationally through modeling: from observing others, one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action.” (Bandura, 1977). Social learning theory explains human behavior in terms of continuous interaction between cognitive, behavioral, and environmental influences that play on each individual differently. Social learning theory has also been referred to as the bridge between the schools of behaviorist and cognitivism with its emphasis on attention, memory, and motivation.

**Socratic Instruction.** Socratic teaching (or the Socratic method) is one of the oldest and still most powerful tactics for teaching the traditional learner and fostering critical thinking. Using the Socratic method, teachers focus on giving students questions, not answers. They model an questioning, probing mind by continually subjecting their students with queries and inquiries. The Socratic method arouses innate curiosity and at the same time serve as a logical, incremental, sequential process that enables students to uncover complex topics or issues with their own thinking and insights. Socratic questioning fosters critical thinking, evaluation, and knowledge application in students and is highly recommended for assignments and class discussions. Certain principles of employing the Socratic method include: allowing a sufficient ‘wait time’ to permit the student to think and postulate hypotheses. Students must
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be provided time to consider the question and their response before requesting them to answer. Teachers are encouraged to keep away from strict yes-no answers that do not promote thinking and limit (or even discourage) classroom discussion. Before successfully implementing this method, students need the proper background and resources to react to the questions posed. Open-ended questions promote critical thinking while closed questions serve to focus the learner's attention. Clarifying questions help guide the learner as they consider possible answers. Finally, it must be noted (somewhat humorously) that the Socratic method does not always work. Socrates used to anger his onlookers who thought he was sarcastic and disrespectful by asking obtuse questions, then tricking them into confusion with a clever rebuttal.

**Statistical Software** encompasses three general classes of software using different user interfaces. Relational databases and spreadsheet software such as Oracle and Excel blends with mathematical software such as MATLAB to provide descriptive and inferential analysis at the lowest cost. Mathematical software such as SPSS exhibits not only statistical capabilities flowing from code for matrix manipulation, but also optimization and symbolic manipulation useful for statistical purposes. Finally, visualization software overlaps to some extent with software intended for exploratory data analysis. The user interfaces commonly include graphical interfaces, drag and drop capabilities, and system interfaces.

**Teaching for Understanding**. The aim of education remains the dynamic use of knowledge and skill for everyday living. Teaching for Understanding began as a research program designed to develop and test a new pedagogy for understanding. The project targeted the middle and high school years and focused on teaching and learning in four subject matter areas: English, History, Math, and Science. Interdisciplinary studies offered the scaffolding that stressed comprehensive learning. Teachers planned their curriculum so that their student was encouraged to understand a topic. With that understanding, it was hypothesized, that learners could not only reproduce knowledge, but also use it in truly innovative and inventive ways. Teachers were encouraged to design their curriculum around generative topics that connect the interests of the traditional learner with their (albeit) limited experiences. Lessons must be clearly articulated, students must understand (and agree with) lesson goals, and experiences must be wrapped in a real-world context. Students are expected to do a great deal of thinking when applying what they are taught to challenging, new situations. The true goal of teaching for understanding is not to arrive quickly at any one, particular answer (even if it is the right answer), but to develop richer and more sophisticated hypotheses over time through several experiences of learning and reflection.

**Technology in Education**. All educators should be better prepared to teach about technology, the report says. Schools need to move beyond the perception of technology as a separate subject to be taught in “shop class.” Science teachers in particular need a solid education in technology and engineering, and even history and social studies teachers should be required to know how technology relates to their subjects. Schools should ensure that teachers specializing in technology follow standards issued by the International Technology Education Association. Neither the educational system nor the policy-making apparatus in the United States has recognized the importance of this more comprehensive view of technological literacy. The National Academy of Engineering calls for a broad-based effort to increase the technological literacy of all Americans, a goal that will have many benefits including more informed decision-making by citizens and business and government leaders about the development and use of technology, and a more erudite population that will be better prepared for the demands of today’s high-tech work environment. (National Academy of Engineering, 2002).
Thinking Skills. “Thinking skills are viewed as crucial for educated persons to cope with a rapidly changing world. Many educators believe that specific knowledge will not be as important to tomorrow’s workers and citizens as the ability to learn and make sense of new information.” (Gough, 1991). Thinking skills are considered the “building blocks” of learning and have an established foundation in research and literature. Most educators believe that such skills can and should be taught and reinforced in school. They include such skills as focus skills (attending to selected bits of information and ignoring confounders), information processing skills (observing information and formulating questions), organization skills (rearranging information to be used more effectively), analysis skills (clarifying information by examining parts and relationships – from general to specific), generation skills (producing new information, meaning or ideas – from specific to general), integration skills (connecting and combining information), and assessment skills (evaluating the sensibility and quality of ideas).

Threaded Discussion is a series of messages on a particular topic posted in a forum that allows students to interact with their peers, instructor, and other previously allowed participants. A threaded discussion is asynchronous so students can log on at any time from any web-enabled computer to share issues, discuss coursework, converse about topics raised in class, or initiate new discussions on related topics. A good threaded discussion has the same effect as in-class discussions in which students collaborate to build on one another’s perspectives and gain a deeper understanding of the materials. Electronic messages are posted, archived, retrieved, and viewed using a web browser or online learning management system. An instructional-based course management shell allows students to pose and answer questions while participating in a shared discussion, where one conversation builds off another. Most often, the instructor functions as the moderator and threads are implemented into the instructional strategy of the distance educator. Some common etiquette parameters for threaded discussions include treating fellow participants with respect and courtesy, observing the basic rules of internet etiquette, reading each post carefully and reflecting upon the message before responding, respecting diversity of opinions, adding to the discussion while refraining from “I agree” and “me too”, refraining from attacks of a personal nature, and adhering to labeling convention with respect to subject titles and main points to speed up the review process.

Tutorials are behavioral learning strategies that assist students in the process of learning new skills by following a step-by-step process that ensures comprehension and mastery of the material. Tutorials typically have the following characteristics. First, they present content, usually with examples, broken into discrete modules or lesson components. Second, they integrate assessment into the module to reinforce learning and test understanding of the content in the related module or section. Third, they transition to additional modules or sections, branching being the most common method of moving about the tutorial lesson.

Video Technologies. The ability to see and hear an instructor presenting content offers a unique set of instructional opportunities not possible with any of the previous modalities of distance learning identified so far. Video techniques for distance learning are often characterized by their transmission media (videotapes, satellites, cable TV, computers, microwave, and the Internet). Each media is characterized by the direction of the audio/video transmission: one or two-way video; one or two-way audio; or, one or two-way audio/video. Some of the most common video technologies include videotapes that offer a widely accepted, easy-to-use format for instructional materials. Video teleconferencing is used in a host of different environments, including business meetings, educational training, formal instruction and
interpersonal collaboration. It can be found in extensive use in medicine, communications, surveillance and security, and emergency response as well as education. Cable and public broadcast television has been around as an instructional media for many years. Educational networks such as CNN, Learning Channel, Children's Educational Television, and National Educational Television authorities allow schools to transmit television courses at nominal cost. Desktop computer videoconferencing employs cameras and microphones to transmit video and audio to computers at other sites.

The advantages of video technologies are as abundant as the variety of technologies supporting education. Video technologies provide a distance alternative to face-to-face classes for learners separated by distance and cost. Facial expressions, body language, and personalities are transmitted via video and provide an aspect of teaching not available even in a traditional classroom environment. And, most video communication is synchronous, allowing a higher degree of interaction among teachers, students, and their peers.

Conversely, video technologies are expensive. Cameras, transmission lines, and editing equipment remain expensive and out of reach of many schools and educators. The infrastructure (e.g., conference rooms, video connections, lighting, etc.) costs alone can be very costly. Video conferences are seldom spontaneous; rather, to be effective, they must be planned far in advance to ensure the best possible attendance by the target audience and hardware, software, and networking assets must be committed in an environment of insufficient resources. Lastly, the complexity of video technologies demands a technical support team to ensure the equipment works properly and valuable instructional time is not forfeited by faulty equipment.

**Videoconference** is a two-way, voice and video connection between participants in geographically separate locations for the purpose of collaboration. Videoconferencing runs the gamut of capabilities from simple static images and text between two locations to full-motion video and high-quality audio between several locations. Real-time visual and audio communication employs a computer, video camera or web camera, and a network with connectivity to the Internet. Examples of video conferencing include an instructor delivering a didactic lecture from a central location (i.e., classroom or office) to many different students in different locations or a meeting between a handful of students collaborating together to share ideas or complete a group project. Effective use of videoconferencing for interactive learning requires practice and planning as well as attention to instructional strategies. Expert guests can employ video conferencing to share ideas with students and teachers without having to travel. Institutions such as zoos, museums, and science centers use video systems to provide students an opportunity to see, hear, and interact in real time without the costs of transportation. In order to create videoconferencing-learning experiences, hardware and software are available from a growing sector of the technology industry at a decreasing cost. The tangible benefits for using videoconferencing include lower transportation costs and increased collaboration gained from offering videoconferencing as both an instructional media and customer service tool. The intangible benefits include the facilitation of group work among geographically distant teammates and a stronger sense of community among peers and colleagues.

**Virtual Tour** is a “web-based teaching strategy which presents multi-sensory, multimedia instruction appropriate for individual student exploration and group learning experiences.” The Virtual Tour is appropriate for students who learn best when instruction is offered in a student-centered and student-controlled learning environment embracing discovery and cooperative learning techniques. A total of 14 different front doors are available to present abstract and concrete concepts; behavioral, cognitive,
and humanistic content; and, technically challenging or difficult construction. Developing follow-up activities is a matter of creating additional Web pages or identifying great sites already available on the Internet and linking them to the Virtual Tour. Behaviorally, the Virtual Tour is a natural extension of sequential learning with content presented from first to last, simple to complex, general to specific. The cognitive teacher offers content in progressive steps until a schema, or pattern, emerges to aid the learner in the construction of new knowledge. Humanism offers the personalized approach to learning, selecting information determined to be important to the student. The Virtual Tour supports each of these major psychologies perhaps better than any previous teaching strategy ever devised. With the advent of the World Wide Web, responsibility for creating student-centered, age-appropriate material rests in the hands of the classroom teacher. The design of the Virtual Tour is the newest strategy for linking literally millions of content specific sites that add images, sounds, and video media to an instructional lesson.

REFERENCES


