**Master's Degree in
Adult Education and Training (AEDT)
College of Education
Seattle University**

Instructional Design Guide

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*The electronic version of this document includes hyperlinks and bookmarks to assist in navigation.

Introduction

This document provides a basic orientation to the process of designing instruction for adult learners, with an emphasis on lesson planning. It is designed to augment the course handouts, texts and the course syllabus, and provide support for completion of course assignments in AEDT 563, Instructional Design. It is also highly recommended for students taking AEDT 510, Course Design, who have not yet completed AEDT 563. Many other resources are available to assist in the lesson planning process as noted in the course texts and syllabus reference lists**.**

Our fundamental belief is that student success is likely to increase when instructors have fully invested in the careful design, development, implementation and assessment of instructional practices. The purpose of teaching is to bring about learning. We believe that good planning is critical to achieving desired learning outcomes. We hope this guide helps you, the instructional designer and teacher, create lessons that fully support student success.

Section 1: Definitions Related to Instructional Design

Please note that terminology related to teaching and learning is not concretely defined. Different sources will use terms very differently. Some sources distinguish between terms, while others use the same terms interchangeably. You will want to determine how terms are defined in the setting in which you are working, or the resources you are consulting. The following definitions are used in our courses to distinguish among terms and concepts.

Assessment: Process of determining progress, gains, or perspectives in relation to teaching and learning. Assessments used to determine how well students are learning and whether or not teaching and learning activities are meeting their needs. Effective assessment is used regularly during learning activities so the results can be used to develop feedback for improving on-going teaching and learning processes.

Course or Workshop: Multiple lessons or units of instruction focusing on related concepts. For example, at Seattle University (SU), AEDT 563 is a course that includes 10 or 11 instructional sessions totaling approximately 30 instructional hours. Workshops are frequently shorter in nature, but may still extend over multiple sessions. Course design is taught in AEDT 510.

Curriculum: The total educational program. Generally includes all courses as well as other educational activities. At Seattle University, we design curriculum at multiple levels, including the university, school or college and program levels. The curriculum of a university usually includes academic programs, residential and commuter student services, athletics, and social and cultural programs. The word "curriculum" is seldom used in business and industry. However, if an organization sponsors a new employee orientation, skill improvement courses, and courses designed to prepare workers for new positions in the organization, the organization could be considered to have a curriculum.

Evaluation: Process of determining outcomes, results, or impact. Often used to compare "before" and "after" to determine effectiveness of teaching and learning activities. Evaluation may focus on any or all of the elements of teaching and learning, including learners, teachers, courses, instructional processes, and instructional materials. Effective evaluation processes are planned before instruction begins.

Instructor, Teacher, Trainer, Facilitator, Faculty: In this document, we have used these terms interchangeably, but some organizations or settings may use some of these terms to distinguish among different roles and responsibilities. Generally these terms apply to the people who guide, direct, and assess student learning.

Lesson Plan: Document that is used to plan, conduct, and evaluate a lesson; usually supports a segment of instruction, such as one session of a course or a workshop. Lesson plans sometimes serve as documentation of instructional processes.

Learner, Participant, Student: In this document we have used these terms interchangeably, but in some environments a particular term may be preferred to describe those who participate in educational activities. In workplace learning, positions or job titles may be preferred.

Unit of Instruction: Groups of lessons related to one topic or concept. In ESL you might teach a unit on "active verbs" that would require several lessons linked to one another within a grammar course. In workplace learning, you might create a unit of instruction for supervisors on "laws related to interviewing job applicants" as a part of a series of workshops on employment law.

Section 2: Instructional Design Model

Instructional Design or Instructional Systems Design (ISD) is a process of planning, implementing and evaluating instruction in a "systematic" and an intentional way. There are many instructional design models from which to choose, but one that is often used is called "ADDIE." The ADDIE model can be used to plan at many different levels, from very comprehensive planning (like complete degree programs) to micro planning at the lesson or workshop level. We believe it works very well for planning lessons, seminars and workshops. ADDIE may also be used to develop a variety of performance support strategies such as coaching, on-the-job training, and job aids. The ADDIE model works well for face-to-face or distance learning.

The phases in the ADDIE model include:

> **A**: Analysis. Includes needs assessment, gap analysis, and other processes to determine what kind of instruction or performance support will best serve both individuals and the sponsoring organization.

> **D**: Design. Includes making the major decisions about the instruction including the goals, objectives, delivery mechanism, content, assessment and evaluation strategies.

> **D**: Develop. This phase focuses on the development of syllabus, lesson plans, instructional materials, assessment tools, and other materials needed to actually conduct the course.

> **I**: Implement. The instruction is carried out as planned, whether that is face-to-face instruction, distance learning, or a hybrid delivery system. It is important to note that in some settings, the individuals who design instruction are not the ones who facilitate its implementation. When this happens, it is critical that the design be fully communicated to those who carry out the design during the implementation phase.

> **E**: Evaluate. In this phase, the instruction is evaluated following plans made in the design phase. Evaluation may focus on student satisfaction or achievement, instructional effectiveness, or impact on the needs that were identified in the analysis phase of the instructional design process.

While ADDIE may look like a linear process (start with analysis and end with evaluation), it should be viewed as a cycle. Evaluation results should be used to inform subsequent instructional design. What was learned in the evaluation phase that could help improve the efficiency or effectiveness of the next instructional event? What will improve the likelihood that students will be able to apply what they have learned? When evaluation results inform the planning of the next instructional event, ADDIE has become a cycle rather than a linear process.

In addition, successful instructional designers know that even during the design process, it may be necessary to revisit steps in the process multiple times in order to get the best possible

instructional plans. These designers would label ADDIE as "iterative." A "Design" phase decision, for example, may require additional analysis. If a designer decides to use technology as a part of the delivery platform, but is not sure of student access to or familiarity with the technology, the designer should engage in additional analysis before moving forward. Failure to do so would endanger the success of the instructional event. Smart designers revisit each phase of the planning process before moving forward to the next to insure that all of the decisions made fit together to create a cohesive course that will achieve the desired outcomes.

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Section 3: Guidelines for Practice: Universal Design for Learning

Throughout the Master's in Adult Education and Training at Seattle University, we have incorporated the principles of Universal Design for Learning (UDL). We believe that these guidelines provide a solid link between theory and practice, enabling instructors to incorporate best practices without spending an inordinate amount of time studying multiple theories. We also believe the principles of UDL allow instructors of adults to accommodate the needs of an increasingly diverse student body without creating accommodation for individuals on a case-by-case basis. In addition, we believe that UDL can increase student engagement by allowing them some choices about how they learn and how they show what they have learned.

Here is a brief overview of the UDL principles. The following content has been adapted from: CAST (2011). Universal Design for Learning guidelines version 2.0. Wakefield, MA: Author. Retrieved April 2012 from www.udlcenter.org

Principle 1: Provide multiple means of representation
The goal of this principle is to develop resourceful, knowledgeable learners. This principle encourages making information accessible to learners in a variety of forms and formats, including text, graphics, and audio. The principle also focuses on providing learners the tools they need to access content that may use vocabulary, symbols, or structural elements that are unfamiliar. Finally, this principle addresses the need to provide options for comprehension. Instructional strategies include activating or supplying background knowledge, helping learners see big ideas, critical features and patterns, and guiding information processing, visualization, and manipulation. Options for comprehension are also supported by maximizing transfer and generalization.

Principle 2: Provide multiple means of action and expression
The goal of this principle is to develop learners who are strategic in their learning and are goal-directed. It addresses multiple practices including providing options for physical action and providing options for expression and communication. These options increase the ways in which students can access information and show what they have learned. Examples include varying the methods for both response and navigation and using multimedia for communication. The third component of this guideline is to provide options for executive functions, such as goal-setting and monitoring progress.

Principle 3: Provide multiple means of engagement
The goal of this principle is to develop purposeful, engaged learners. It encourages instructors to provide opportunities for students to have choice and autonomy in their learning and to create learning environments where threats and distractions are minimized. In addition, this principle addresses the need to support students in sustaining their effort and being persistent learners. Strategies include increasing the relevance of goals and objectives, and fostering collaboration and community building. Additionally, this principle encourages faculty to develop opportunities for students to engage in self-regulation. Strategies include focusing on engagement factors, developing student coping skills, and developing student capacity for self-assessment and reflection.

In order for Universal Design for Learning principles to be fully integrated into courses and lessons, instructors must be very intentional in their planning. They must create opportunities for students to accomplish the desired outcomes through various means and methods. Instructors must be clear about the desired outcomes and communicate those to students. UDL principles are designed to enable students to be successful in reaching the desired outcomes. Students are held to the standards and given support through multiple means of reaching those standards.

As you move through the remainder of this *Instructional Design Guide*, keep thinking about ways to provide more than one avenue, more than one option, more than one means for students to reach the desired outcomes, goals, and objectives and more than one way for them to show what they have learned.

Section 4: Rationale for Lesson Planning

Good instructional design requires planning (see the earlier description of the ADDIE Model in Section 2). Programs, courses, and lessons need to be carefully planned to bring about the desired results. If a program is designed to achieve particular outcomes, each component of the program must support attainment of those outcomes. At the lesson level, there are four distinct reasons why planning is important.

Preparation: Efficient and effective learning requires well-designed instruction. Preparation of lesson plans provides an opportunity to make decisions related to outcomes, content, structure, learning activities, learner needs, linkages to other learning events, and resources needed. It is in the preparation phase that instructors link one segment of instruction to those that preceded it and those that will follow it. Incorporating UDL requires careful and thoughtful preparation. Options for students are seldom created without careful consideration of possible alternatives in advance of instruction. A well-prepared lesson is more likely to provide a satisfactory experience for students.

Rehearsal: Planning provides a rehearsal process to help insure that the lesson delivery is smooth, orderly, efficient, and effective. Rehearsal allows the instructor to check the plan for completeness and clarity. Rehearsal improves management of lesson events and increases instructor confidence. Rehearsal may also allow the instructor to pay greater attention to how learners are responding to instruction.

Documentation: The lesson plan document can serve as record of what was planned, can be used for evaluation and assessment purposes, and can serve as a springboard for future planning. Some organizations require lesson plans be on file for courses.

Practicality: Having a plan makes it easy to teach the lesson, replicate the lesson at another time and place, and revise the lesson or lesson segments for improvement. It makes it easy for a substitute instructor or subsequent instructor to quickly assume responsibility for instruction. Plans increase the probability of consistency of learning for course participants from offering to offering. A lesson plan that has been used and then "annotated" to describe what worked and what did not work, is a valuable document for continuing to improve instruction.

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Section 5: Variables Influencing Lesson Planning

As noted earlier, designing a lesson is not a linear process, but rather an iterative one of choosing, ordering, adjusting, and editing. Key elements that must be considered during the lesson planning process include:

Curriculum and Course Boundaries: Where does this lesson fit within the curriculum and course? What is expected of this lesson as a contribution to the total course or curriculum? What is being taught elsewhere that should not be duplicated in this lesson? What has been taught previously that should be reviewed, expanded or applied?

Outcomes: What should students gain from this learning event? Goals and objectives provide focused outcomes. These are selected for the lesson using information from the course outline, curriculum guides, needs assessments, evaluation requirements (such as achievement tests or competency tests), and other organizational requirements. Outcomes provide the foundation for many other instructional decisions including content, methods, and materials.

Participant characteristics: What participant variables shape the instructional process? Variables such as age, prior learning, learning goals, and learning style may influence lesson planning. Needs assessments and participant surveys are useful tools, as are the principles of Universal Design for Learning (UDL). As instructors we seldom get to customize our courses for the particular learners who actually participate. We must, therefore, plan in advance to meet the needs of a wide range of learners. By incorporating UDL principles in our planning process, we can better meet the needs of a diverse target audience.

Instructor characteristics: Instructor experience, knowledge, expertise, energy levels, and learning style should be considered in designing lessons. Instructors should have confidence, competence, and enthusiasm. Lesson plans that exceed instructor competence or confidence will have less likelihood of being successful.

Delivery considerations: Elements such as the time of day, size of room, number of participants, room arrangement, time allocations, and method of delivery must be considered. If a lesson is being taught to a live audience and broadcast to other audiences at the same time for example, special attention will need to be paid to involving the distant audiences.

Resources: Lessons must be planned in accordance with available resources such as equipment, space, materials, etc. Time is a most restrictive resource.

Content: Content decisions should be made in concert with many others. Questions about kind and amount of content are frequently made with the outcomes and student characteristics in mind. Order of content and flow of content may be influenced by intended outcomes, but also by anticipated application of content by participants. Content decisions may also be tightly tied to instructional delivery decisions such as out-of-class assignments, experiential learning activities, and use of groups. As noted above, curriculum and course boundaries may define appropriate content for a course.

Context: The instructional context may include many of the above considerations, but it may also include issues such as organizational sponsor, philosophy of the organization, and or faculty. It may also include factors such as current events, organizational culture, and/or public perception. External variables such as examinations, performance requirements, certification or licensing requirements and other accountability requirements may influence course and lesson design.

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Section 6: Lesson Components

Lesson plans vary greatly in their format, content and style. The purpose of a lesson planning form is to help instructors remember what should be considered as a lesson is planned and implemented. A good lesson planning form can serve as a job aid for instructors. Several sample planning forms are provided in of this document. Generally plans include the following elements:

A. Identification: Title, name or number of the lesson, the course, the instructor, the room, and other contextual elements that define the conduct of the lesson. Equipment and material requirements, room set-up, and other notes help insure effective conduct of the lesson.

B. Non-instructional activities: Introductions, roll call, announcements, breaks, transitions between events, returning student work, and social activities. Evaluation of teaching is another event that may need to be included. Because these take time and planning, they should be a part of the lesson planning process.

C. Instructional activities: The primary activities that create an interaction between the student and the content and the skills to be learned. The order suggested below is consistent with current research on how the brain works while learning and with what we know about individual learning styles:

> Introduction to lesson
> Instructional outcomes or objectives
> Provision of new content
> Making meaning and getting clarification
> Practice of new skills and knowledge
> Feedback about performance; additional practice as appropriate
> Assessment of student performance
> Summary of lesson
> Evaluation of student learning
> Transition to next learning activity or application to lives of students
> Evaluation of teaching and course, as appropriate

D. Assessment and evaluation activities: As noted in the previous section, assessment activities are often embedded in the instructional plan. Assessment activities should be designed to provide feedback to both students and instructors about how well students are doing in the course. Are the students ready to move on or do they need more practice and feedback to enable them to be successful in the next phase of learning? Evaluation of student learning is a final assessment of their achievement and typically focuses on content or skill mastery. This evaluation is often used to judge the quality of student performance and is translated into a grade. Sometimes the results of the evaluation determine student promotion to the next higher course.

If the lesson is a stand-alone event, occurs at mid-course, or is the final lesson of a course, it may be appropriate for the students to evaluate the course and the quality of instruction. If done at mid-course, the instructor can respond to student feedback and make improvements before the

end of the course. Evaluation results from end-of-course feedback can be used to improve subsequent instruction and courses.

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Section 7: Lesson Organization and Flow

While the order may vary from time to time, the following order of events is recommended to match brain processes and accommodate individual learning preferences:

A. <u>Introduction</u>: Critical for initiating learning process and overcoming initial resistance to learning. Answer questions about value and worth of learning. Components of introduction:
>
> Set stage for the lesson
> Get student attention
> Provide big picture of the lesson
> Inform them of the goals and objectives for the lesson
> Link lesson to prior knowledge and experience of audience
> Link lesson to performance requirements of participants upon lesson completion

B. <u>Learning Events</u>: Activities that create interaction between students and content. Usually organized around learning objectives, by domain (cognitive, psychomotor or affective) and by level of attainment (simple to complex). An objective may require more than one learning event; mastery of learning may require repeating some learning events. Elements of a learning event include:
>
> Identifying learning objective(s)
> Recalling relevant prior learning and experiences
> Acquiring new knowledge, skills, or perspectives
> Making meaning and getting clarification
> Applying and using new knowledge
> Getting feedback about performance

C. <u>Assessment Strategies</u>: Activities teachers can use to assess student attitudes, interests, learning, and progress toward personal goals. Assessment can be used:
>
> Before instruction- needs assessment, interest assessment, or knowledge assessment
> During instruction -making meaning, clarify content, practice skills, show progress
> Following learning event –assess student gains, achievement of instructional objectives
> After instruction- judge the quality of the instructional processes

D. <u>Summary</u>: Provides a vital element in the learning process.
>
> Bring closure to the lesson
> Restate the objectives and the primary content
> Encourage continued exploration of the topic, often through a question
> Provide "big picture" and how the lesson elements contributed to the picture

E. <u>Transition/Transfer</u>: Linkage to the next learning event or use of new learning. May include:
>
> Purpose of the next lesson and the preparation for that lesson

Application and use of the course content in the lives of students
Use of content to accomplish personal or organizational goals

F. Evaluation of Teaching: Informal processes designed for teacher use or more formal processes by the organization to judge the value and worth of the course and the effectiveness of the teacher. Not every lesson will include evaluation of teaching, but many sessions will. For examples, see Chapter 9 in *Classroom Assessment Techniques* (Angelo and Cross, 1993).

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Section 8: Writing Outcomes, Goals, and Objectives

The model that we're developing, here, is about moving from broad benchmarks or targets to more specific ones. By moving from broad to specific, you can find ways to assess whether or not you're being successful in your teaching. Outcomes, for example, are very general statements about student capacity at the end of a program. In academic settings, these are often based on all of the elements within a total degree program. Because they are very general, they are harder to measure, especially in relation to a single course or lesson. Goals are also fairly broad and describe purposes and intentions of the course and are therefore more narrowly defined than a total degree program. Objectives generally focus on student performance and are more easily measured, especially at the lesson or course level. Objectives help define a target for student performance and establish expectations for assessment of that performance. This model of broad to specific is especially useful in skills-based training where learners are developing competencies. This model is, therefore, sometimes referred to as "competency-based instruction." Much of what we do in adult education and training is competency-based.

Creating appropriate goals and objectives is considered by many authors to be the most important instructional decision an instructor makes. Because the goals and objectives define the desired results of instruction, they provide the framework for most other instructional decisions, such as kind and amount of content, learning activities, assessment strategies, and out-of-class requirements. Attainment of goals and objectives is often used to determine whether or not students, instructors, courses and programs have been successful. Investment in the development of goals and objectives is critical for successful instruction. Goals and objectives are usually created to support program or organizational outcomes. Some definitions will be helpful here:

Outcomes: these are statements that define the desired end of the educational process. Upon program completion, what will participants be able to do or how will their perceptions change? Think of the word "outcome" in its two etymological components: What comes *out* at the *end*. If a learner completes a three-session training in how to use an acetylene torch, what will that person be able to do at the end of those three sessions (e.g., use the cutting torch, weld two dissimilar metals, braze, etc.). While goals establish the broad view of what will happen, and objectives define what the components of learning will be, outcomes describe what the learners will be capable of doing at the end of the process.

Goals: broad statements of intent regarding instruction. Often written at the course level, goals provide a general statement about the course purpose and focus. Goals are usually achieved indirectly through the objectives. Usually multiple objectives support each goal, and when all of the relevant objectives are achieved, the goal is usually met.

Objectives: objectives are related to learner performance. These are more precise statements than goals and are measurable in terms of student attainment. Students can demonstrate their level of knowledge or skill through a variety of more precise strategies such as describe, list, tell, define, etc. It is important to remember that objectives must be measurable and observable.

Relationship among Outcomes, Goals and Objectives: Here is an example of an outcome, goal, and supportive objectives that "nest" together:

Sample Program Outcome (from Master's in Adult Education and Training): Program graduates will be able to plan, implement, and evaluate adult education instruction, courses, and programs.

> Note: This is a very broad statement that can only be achieved through multiple courses included in a comprehensive degree program. The course goals and objectives should support attainment of this outcome and be consistent with this outcome. No one course will achieve this outcome.

Sample Goal: Upon completion of this course, participants will be able to develop instructional plans that reflect appropriate teaching/learning theories and facilitate adult learner goal achievement.

> Note: This describes one of the purposes of the course. Goals are usually derived from the course description to provide consistency between what is "advertised" to students and what actually happens in class. Goals should be feasible for the course and consistent with program outcomes. This goal is supportive of the program outcome listed above.

Sample Objectives: Participants will be able to:
1. Identify key adult learning principles that guide lesson plan development
2. Design key components of lesson plans
3. Write instructional goals and supportive objectives
3. Develop a plan that aligns with brain-compatible learning
4. Select instructional and assessment methods that support learning outcomes
5. Select instructional and assessment methods that support different learning styles
6. Select content that supports goal and objective attainment
7. Create a written document that describes the lesson context, delivery, and follow-up
8. Adjust teaching methods to include multiple representations of ideas, multiple means of expression and multiple means of engagement

> Note: The objectives support the attainment of the sample goal (above) and are measurable and observable. We can easily determine whether or not students can perform these tasks. That's why they are sometimes referred to as "*behavioral objectives*" since you can see and measure specific behaviors. Another category is "performance objectives" which are often found in training and development. Performance objectives are very precise. Based on the work of Mager (1984), performance objectives identify the condition of performance, the measurable performance, and the standard required. A performance objective would look like this:

> Given a list of action verbs [this is the condition of performance], the student in AEDT 563 will be able to classify [this is the measurable performance] the verbs into cognitive, affective, or psychomotor domain, with 95% accuracy [this identifies the standard of performance].

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Section 9: Classifying Objectives

Domain: The Intellectual Domains identified by Bloom (1956) and others provide three classifications of objectives: cognitive, affective, and psychomotor. Each of these domains addresses a different kind of learning. While actual learning is seldom divided into such clean categories, it is helpful for us to think about the primary end-result. Do we want students to acquire knowledge (cognitive), develop values and belief structures (affective) or attain higher levels of motor skills (psychomotor)? You can see, for example, that psychomotor learning also requires cognitive gains and sometimes changes in beliefs or values as well, such as "desire." Cognitive learning is often tangled with our beliefs and feelings about the content area, the instructional process, or the reason we are engaged in the learning process.

Cognitive Domain: Intellectual processes related to information acquisition and organization. The "knowledge" domain focuses on what we know. Knowledge can be demonstrated through tests and practical applications.

Affective Domain: Attitudes, feelings and values. Attainment often inferred from action and behavior that is consistent with the attitude or feeling in question. For example if a student picks up litter, one may (correctly or incorrectly) infer that he/she cares about the quality of the environment.

Psychomotor Domain: Skills related to performance of manual work or manipulative processes. Performance of skills involves ability to move one's body in particular ways. Measurement based on performance of the actual skill. Note that knowledge of performance is different than actual performance of the skill.

Taxonomy: The Taxonomy of Educational Outcomes, also the work of Bloom (1956) and others, provides a classification system for categories of educational objectives within each of the domains (cognitive, affective and psychomotor). The Taxonomy identifies the type of thinking that is required within each domain. That is critical to instruction because it is important to understand the type of thinking that a learning task requires. For example, one type of cognitive outcome is for students to be able to recognize, point to, or name an object. Another cognitive outcome might require students to be able to apply, judge, or evaluate an object. These two performances require different types of knowledge and different types of thinking.

The taxonomy is helpful as instructors take aim at writing objectives within the appropriate category. Instructional strategies, including assessment should be chosen to match the desired category of thinking that is required to master a concept. For example, if you want learners to be able to "apply" a particular skill set, instruction, learning activities and assessment strategies should focus on their capacity to do so.

It is important to note that instruction does not need to begin at the most simple levels. Adult learners bring great quantities of prior knowledge and experience into the classroom. Good instruction takes learners from their existing awareness to higher, more sophisticated levels of learning. The taxonomy on the following pages organizes learning tasks by domain and category of thinking.

Cognitive Domain Taxonomy

Category (type of thinking required)	Action Verbs for Objectives		Teaching Strategies & Techniques	Learning/Assessment Activities
Knowledge	Count Define Describe Identify List Select	Name Point Recall Repeat Match State	Lecture Visual aids Audio tapes Models, artifacts Demonstration Fact-level questions	Read Listen Observe Match Answer questions: fact, true/false Replicate teacher action Programmed instruction

Comprehension	Associate
	Compute
	Convert
	Defend
	Discuss
	Distinguish
	Estimate
	Generalize
		Infer
		Predict
		Rewrite
		Restate
		Summarize
			Questioning:
			   Probing
			Review
			Discussion
			Problem presentation
			Case Study
				Answer questions:
				   Multiple choice
				Report
				Present
				Write
				Solve Problems
				Discuss
				Debate
				Develop flow chart

Application	Change Classify Demonstrate Interpret Solve Use	Modify Manipulate Operate Produce Translate Graph	Coach Give feedback Laboratory projects Simulation Internship Manipulatives When, how questions	Perform Solve problems Creative presentation Production Active participation Role play Game playing
Analysis	Analyze Appraise Compare Contrast Critique	Distinguish Experiment Question Relate	Case studies Critical incidents Analytical questions Simulations	Problem solving Critiques Evaluation projects Debate
Synthesis	Compose Construct Reconstruct Design Redesign	Formulate Integrate Manage Prepare Summarize	Modeling Simulations Projects Case studies Socratic dialogue	Action planning Production Writing – dialogue Projects
Evaluation	Appraise Evaluate Judge Rate	Select Score Value	Case studies Projects Simulations Rationale questions	Critiques Evaluation Projects Observation and rating

Psychomotor Domain Taxonomy

Category (type of thinking required)	Action Verbs for Objectives	Teaching Strategies & Techniques	Learning/Assessment Activities
Perception	Aware Recognizes Sees Identifies Notices Labels	Demonstrations Video, film, slides Charts	Observation Checklists
Set	Reacts Stands Attends Ready Postures	Simulations Modeling Observation Feedback	Simulation Modeling Practice parts, but not whole set
Guided Response	Imitates Attempts Practices Shows Models	Demonstration Observation Feedback	Guided practice Video taping Observation
Mechanistic Response	Performs Executes Manages	Simulations Coaching Feedback	Practice, part to whole Feedback Observation Self-Evaluation
Integrated Performance	Internalizes Performs Manages Self-Monitors Adjusts	Simulations Real Events	Perform – whole set View videos of self Self-analysis of performance

Affective Domain Taxonomy

Category (type of thinking required)	Action Verbs for Objectives		Teaching Strategies & Techniques	Learning/Assessment Activities
Receive	Aware Sees Notices	Recognizes Identifies Labels	Lecture Brainstorming Case Studies	Observation Reading Self-rating instruments
Respond	Seeks Involves Joins	Offers Shares Volunteers	In-class projects Team projects Individualized projects	Choices, alternatives Journals Out-of-class assignments Action planning
Value	Accept s Attempts Prefers Integrate Apply	Supports Challenge Praise Judge	Case Studies Debates Projects	Journals Action planning Project design Role play Opinion writing
Organize	Creates Structures Plans	Forms Designs	Projects Individualized projects Case Studies	Journals Action planning Role play Service learning
Characterize	Manifest Controls Defends	Internalizes Commits	Performance contracts Ratings, checklists Observations	Volunteer work Service learning Team projects Action learning Simulations

Section 10: Content Selection

What content is necessary in order for the students to achieve the outcomes? Needs assessments and other assessment strategies may help determine what the target audience already knows. Adult learners have great variability in their prior knowledge and experience level, so finding out what the audience knows and does not know is helpful in planning instruction at the right level. It is also critical to identify what content is needed to meet organizational, course and program expectations. For example, if this is a level 1 course, what content must be included in order for students to be successful in level 2? Or, if this is level 2, what pre-existing knowledge can be used to move to the next level of learning? If this is a mandatory safety course, what content must be included to meet organizational expectations?

For each objective, identify the supportive content. Instructors who fail to spend time on this task tend to overload students with too much content that is not relevant to desired course outcomes. What knowledge is needed to attain the desired level of performance? The content should be prioritized into three levels:

> Essential knowledge: every student must know
> Supportive knowledge: every student should know; it supports performance
> Optional knowledge: students don't need this, might be interesting but non-essential

Here is a sample content classification, using objectives presented earlier in this document:

Objectives	Essential knowledge	Supportive Knowledge	Optional Knowledge
1. Identify key adult learning principles that guide lesson plan development	Adult learner characteristics Learning process Learning styles Universal Design for Learning principles	Brain function Memory/forgetting Learning disabilities Cultural, social issues Adult psychology	Additional learning style theories Philosophical orientations to learning
2. Design key components of lesson plans	Elements Purpose Quality issues Theory-base	Variety of formats Additional theories	Software programs that generate lesson plans
3. Write instructional goals and supportive objectives	Terminology Domains Taxonomy (thinking tasks) Purpose Format	Performance objectives	Taxonomies by other researchers

Balancing learning activities and time: decide if all of the objectives are attainable in the lesson if essential content is provided. You may need to narrow the course goal, adjust the number of objectives in the lesson, lower the level of attainment, or change how the essential content is to be attained. For example, you may decide all of the objectives are absolutely necessary, but in-class time is limited. Shifting content acquisition to out-of-class activities may be necessary when it is appropriate to do so. Remember, in general, it is better to more fully achieve fewer objectives than it is to partially achieve a greater number of objectives.

Section 11: Content Organization

In what order should the content be presented? Some useful organizational patterns include:

- Known to unknown: start with familiar and move to new content
- Concepts to facts: concepts help organize facts and make facts meaningful
- Concrete to abstract: known, visible, here-and-now before abstractions
- Practical to theoretical: begin with useful applications then provide theory
- Easy to difficult: early success in a learning process can build confidence
- Broad to narrow, general to specific: assists in organizing new learning
- Procedural: teach in order of use, flow, order
- Current to historical or to future: here-and-now before unknown
- Stepwise: teach one step at a time and check for mastery before adding new step

Clustering or grouping content can also be helpful to facilitate learning. Some ways to cluster content include roles and responsibilities, themes, frequency of use, taxonomies, frameworks, or other classification systems. These organizing strategies can help connect the new content to the real world of the students and support learning.

Many instructors present content in the same order as the chapters in the course text (Chapter 1, then 2, then 3, etc.). While this may be appropriate, an instructor should critically examine the degree to which the order of the chapters matches "good learning" for the students.

Identify an instructional unit with which you are familiar. Can you identify three ways to sequence the same content? Look at a commonly used text in a content area you have taught. Could you see how re-ordering the chapters might create a "better" learner for a particular target audience?

Section 12: Selecting Learning Activities

Learning activities provide the learner an opportunity to interact with the content. These are the methods, techniques and strategies that the instructor chooses to include before, during, and after the lesson. Some learning activities are done in class and others may be completed outside of the classroom. Some are completed by individuals and others may be completed by groups. Some activities may be passive/receptive such as lecture or reading and other activities might provide an active learning experience such as a laboratory or role play.

Selection of the learning activities is not easy nor is it straightforward. Here are a series of questions to consider as you select the teaching and learning activities used in your instruction.

Is the learning activity:

a. consistent with the objective(s) of the lesson in terms of domain?

b. consistent with the objective(s) of the lesson in terms of kind of thinking task?

c. feasible in the setting, including space, technology, and instructional expertise?

d. efficient in use of time and resources?

e. structured to provide alternative means of access for students (multiple means of representation)?

f. structured to provide alternative means for students to engage, respond and navigate (multiple means of action and expression)?

g. structured to provide individual choices and connect to the real and authentic world of the learners (multiple means of engagement)?

h. connected to other learning activities in order to bring about deep learning, mastery learning or what Fink (2003) would call "significant" learning?

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Section 13: Selecting Assessment and Evaluation Strategies

In this document we distinguish between assessment and evaluation (see definitions in Section 1). We use the term assessment to mean the kinds of activities designed to help students and instructors determine whether or not goals and objectives have been achieved. Assessment helps identify what has been learned and whether or not students are able to apply what they have learned. Assessment by students can also provide feedback to the instructor regarding student perception of instructional effectiveness. The feedback gained through assessment can be used to intentionally structure learning processes to improve learning. Without assessment, neither the instructor nor the students know for sure if learning is taking place.

The book, *Classroom Assessment Techniques* by Angelo and Cross (1993) was designed to provide instructors at the college level with a variety of assessment strategies that can be readily used in the classroom. We believe that these assessment techniques can be widely used in many different educational settings and therefore recommend the book to all adult educators.

Part One of the book provides this foundation as well as an overview of the research on which it is based. Part Two of the book provides 50 Classroom Assessment Strategies (CATs) that can be used in the classroom, regardless of the course content. The final chapters of the book provide additional research findings.

Read chapter one to get a clear view of classroom assessment and the assumptions on which assessment activities are built. Then move to chapter two and complete the Teaching Goal Inventory (TGI). Take the TGI with one course that you teach in mind – you will get a clearer view of your goals that way. Then, skim chapters 3, 4, and 5. Invest in chapter 6; it provides the description of the format of the CATs and provides three indexes that help you find the CATs of value to your instruction. Table 6.1 (page 109) provides an alphabetical list of the CATs; Table 6.2 (pages 110-112) lists them by disciplines described in the examples embedded within the CATs; and Table 6.3 organizes the CATs by TGI cluster (page 113-114).

These clusters are:
Cluster 1: Higher Order Thinking Skills
Cluster 2: Basic Academic Success Skills
Cluster 3: Discipline-Specific Knowledge and Skills
Cluster 4: Liberal Arts and Academic Values
Cluster 5: Work and Career Preparation
Cluster 6: Personal Development

Chapter 7 includes the CATs designed to assess course related knowledge and skill. These are the CATs that will help you know if your students are acquiring the content and achieving the instructional outcomes. CATs 1-27 are described in this chapter.

Chapter 8 includes CATs focusing on assessing learning attitudes, values and self-awareness. These are the CATs that will be helpful developing self-understanding and areas of growth in the affective domain. CATs 28-40 are included in this chapter.

Chapter 9 provides CATs that can be used to assess learner reaction to instruction. CATs in this chapter can help the teacher understand how students feel about the teaching/learning processes

and the learning environment. Instructors may want to include these activities part way through the course (mid-course, for example) so adjustments can be made, if needed, before the end of the course, to respond to the feedback provided by students. The chapter includes CATs 41-50.

Dive in! Some of these strategies have become fairly common practice. Many students are familiar with Muddiest Point (CAT #7), Minute Paper (CAT #5), and RSQC2 (CAT #46). The only way you will be able to use these in your teaching is to become familiar with them and give them a try. There is no safer place than your peer teaching sessions.

Evaluation, in contrast to assessment, focuses providing data to judge the value or impact of an educational event. It is important to note that in a course, not every lesson will include an evaluation activity. However, each lesson in a course contributes to the quality of the course and the students overall experience in the program. Therefore, instructors must be aware of the evaluation procedures in place for a course and be prepared to support the evaluation of the course, program, or curriculum. Here are some common evaluation activities that are tied to courses:

1. Student achievement tests, final examinations, or other strategies are designed to determine how much students have learned. Some examinations require performance of the tasks learned during the course, not just recall of knowledge about the tasks. In lieu of examinations or tests, some evaluation processes require students to produce a body of work, often organized into a portfolio or other culminating project. Each course may need to include assignments or activities that are tied to the final projects. All of these activities seek to measure how much has been learned.

2. Student perceptions of the quality of the course, the amount learned, and the quality of instruction are often gathered through surveys. These are classified as "satisfaction" surveys. These end-of-course evaluations are used to evaluate courses and programs, as well as faculty instructional expertise. At the course level, instructors need to encourage students to complete these surveys and may need to provide time for students to complete them at the end of the course.

3. Evaluation of faculty may include peer review and observation by department chairs or deans, in addition to student evaluations of teaching. Faculty may need to arrange observations and prepare students for such visitations.

4. Courses may be evaluated from multiple perspectives to determine whether or not they add value to student learning, the degree program, or the sponsoring organization. Evaluation of a course may seek to determine whether or not course goals and objectives were attained and if those goals and objectives are important. When resources for education and training are limited, many educational activities may be eliminated if the value of the activity cannot be documented.

5. Results-oriented evaluation focuses on whether or not students are able to apply what they learned to achieve the desired outcome. For example, in a business where a course was designed to improve on-the-job performance, data about performance would be

examined to see if performance improved after course completion. These evaluation efforts seek to determine how much new knowledge and skill were transferred and whether or not the changes in performance made a difference.

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Section 14: Developing Visual Aids

Purpose: Visual aids make learning more interesting and more effective. Learning is enhanced when information is presented in more than one way. Some learners learn more efficiently and effectively through visual images. Using visuals can support integration of UDL principles in your teaching. Visual aids can assist in the following teaching and learning processes:

      Reinforcing
      Summarizing
      Illustrating
      Emphasizing
      Recording, creating record of events, actions, decisions
      Comparing, contrasting
      Sequencing (first, next, finally; before/after)
      Differentiating, distinguishing
      Showing concrete or authentic examples
      Outlining
      Getting attention
      Showing the hard to describe
      Giving directions, supporting group work
      Providing variety in style, format, form
      Recording group work
      Getting and focusing attention
      Highlighting features

Guidelines for Choosing: Guidelines for choosing visual aids are the same, in many ways, as the guidelines for choosing other strategies in your lesson. They must be appropriate and feasible.

      Know your audience. Use appropriate cues.
      Use text sparingly. Text density increases cognitive load.
      Use contrasting colors. Blue and green not distinguishable by some viewers.
      Simplify: limit images to single concept or idea.
      Use symbols in place of text (arrows, dotted lines, boxes).
      Use tables, charts, and graphs to display data efficiently.
      Make visuals easy to see:
            Text size must be adequate
            Space between lines enhances readability
            All upper case hard to read; implies shouting
            Font style must be easy to read.
            Limit number and kind of fonts in visuals (**A**∨ₒi*d* *R***α**ns*σ***m** **N**ₒₜ℮ Lₒₒ*k*)
            Use horizontal rather than vertical orientation

      Additional guidelines:
            Visuals should not be script of presentation.
            Don't overload kind or amount of visual aids.
            Do not read text of visuals to audience. Let them read first.
            Do not stand between visual and audience. You are hard to see through.

Visuals must be free from error. Nothing like a 12' high spelling error.
Visuals must be free from bias, discrimination, or suggestive content.

Using Visual Aids: Plan use of visuals:
Organize in order of use.
Practice using equipment.
Test for visibility in room where they will be used from all seating areas.
Test sound systems for adequacy.
Have plan B. What if equipment breaks or is not available?

Types of Aids: A few examples of instructional media:
Charts
Posters
Overhead projectors (transparencies, outline of objects)
Easels
Films
Video tapes
Audio tapes
Music
Computer-generated images
Real objects
Colored paper
White or chalk board
Handouts
Your outfit
Models

Section 15: Putting it All Together

While this document has provided a description of the process and components of lesson planning, you may still feel that you don't know how to really "put" a lesson plan together. Here is what we suggest:

A. Begin by carefully crafting your learning objectives. Make sure they are right for your audience and that they can be fully achieved in the time frame allowed (remember that some learning may occur outside the lesson).

B. For each objective, outline the essential content and the learning activities that support objective attainment.

C. Now, add the strategies that will be used to determine whether or not the objectives have been attained. For example, if the objective states that participants will be able to <u>define</u> certain vocabulary terms, how will you know that they can do so?

D. For each activity that happens within the lesson and consumes some instructional time, develop a time estimate. Don't forget the non-instructional events like roll call, returning papers and breaks. Past experience, rehearsal, and mock practices can help you estimate time. I usually estimate a minimum and maximum time for major activities. You should be able to develop a lesson sketch that looks like this:

Time Estimate	Objective	Content	Activities	Assessment/ Evidence

E. You now have a total list of all the things that need to happen in the instructional period and an estimate of the time needed. Is it feasible? If you have too many activities (more time needed than time available), figure out how to reduce the time allocation for some of the activities or eliminate some of them. Is it possible to shift an objective to the next lesson? Is it possible to shift some activities to out-of-class time? Is it possible to combine activities and reduce transition time (bundling)? If you have time left, you will want to add objectives or instructional activities or expand activities that are already included. It is advisable to plan an extra activity, just in case things go faster than predicted. Select a useful activity that is not critical to objective attainment, but is helpful and valuable to the learners. Examples might include additional discussion questions, a worksheet, a review strategy or a learning game. Sometimes these can be distributed to students even though they are not used during the lesson.

F. Now determine the order of events. Look at the flow of the lesson from the participants' viewpoint. Is there a logical order of events in terms of learning new content? Is there a balance of active and less active learning events? Are the breaks

timely? Does the lesson provide for a variety of learning style preferences? You may want to try story-boarding your lesson. Put each event and its estimated time on a card or slip of paper (sticky notes work well for this).Then move them around to get the order that seems best. You can be clever and color-code different kinds of events to get a quick picture of balance. For example, put teacher-centered activities on blue, student-centered activities on pink and non-instructional events on yellow. Stand back and look for balance among the colors in terms of total time as well as distribution and concentration. This is especially helpful when planning longer lessons of two hours or more.

G. Now you are ready to think through all the materials, supplies, and equipment that you will need to support your lesson. If the lesson includes lecture, you need lecture notes. If it is a PowerPoint presentation, you need equipment, your presentation, and possibly a handout for the students. If the activity requires directions, it is best to script these carefully and make sure they are clear. This also helps estimate time needed for the activity as well as the equipment, supplies, or room arrangement needed. When you are satisfied, transfer your plan to the lesson plan form of your choice.

H. As teaching time approaches, gather your materials and supplies, using your lesson plan as a checklist. A file folder, portfolio, briefcase, or even a box may work best for you. You will want to develop your own checklist, but here is what we carry to class with us:

1. Lesson plan and all supportive materials.

2. Course-level materials: syllabus, class list, grade sheet.

3. Teaching kit in plastic bag: transparency pens, white board pens, chalk, paper clips, extra pens, note cards, tissues, and even a "door wedge" to block open doors at break time.

4. File folder with extra paper.

5. PowerPoint presentations on jump drive. (We also email them to ourselves and post them on the course website.)

Section 16: Sample Lesson Plan Forms

Forms aid in planning and the conduct of lessons. Planning forms can provide a structure to the planning process and help us remember to consider certain things each time we plan a lesson. A lesson planning form can serve as a job aid. You may find one form works better than another. You may find that some combination of forms works best for you.

When teaching a fairly long lesson, like we do in our graduate programs, we use three kinds of lesson plan content.

A. <u>Lesson Identification</u>: Part one of the lesson identifies the course, the quarter, the session, the key topics, and important reminders for conducting the lesson, such as equipment needed, room arrangement, etc. It also includes a checklist of materials and supplies needed. This list serves as a "safety net" for preparing materials and supplies for lesson.

B. <u>General Overview</u>: The lesson plan in chart or table form gives me a quick way to check on key events and time allocations. During conduct of the lesson, a quick look at the chart can help manage the lesson within the given time frame. It also allows the instructor to make quick decisions about breaks, activity flow and whether or not additional or fewer activities are needed to balance the lesson plan.

C. <u>Teaching/Learning Activity Details</u>: These are detailed notes that help manage each segment of the lesson. They might include lecture notes, directions for an activity, questions for a discussion section, or additional material that might be needed during a lesson. Organize these to match the lesson overview. For example, if the lesson overview includes "Lecture Part 1," then the lecture notes can be labeled "Lecture Part 1."

The following lesson plan forms are provided to assist you in finding a form that works well for you. Note that different kinds of lessons may require a different form. Find or create a form that supports your planning and delivery of an effective learning experience for your target audience. Not all instructors want or need the same kind of support, so find what works for you.

Sample Form A: Lesson Plan

Instructor name _____ Date of lesson_____
Course name/number _____ Lesson/session number _____
Start time _____ End time _____   Room/Building _____
Number of participants _____   Room set-up _____
Equipment, materials, supplies:
Purpose and goal of lesson:

Objectives for lesson:

Activities to be completed before lesson begins:

Lesson Activities:

Time Allocation	Learning Event	Key Concepts	Activities	Notes
Time allocations may be listed in minutes (10') or time frame (5:35-5:45 pm)	List key learning events in order. Cluster around objectives. Include non-instructional events as well as instructional.	List content elements or identify source of concepts to be taught, such as chapter in book, article, or supplemental notes.	Might include lecture, discussion, small group work, projects, etc.	Reminders for instructor

Lesson Activities: Sample

Time Allocation	Learning Event	Key Concepts	Activities	Notes
5 minutes	Introduction to lesson	Purpose of lesson Objectives Main activities Linkages to prior learning	Lecture, supported with transparency of objectives	Read script
10 minutes	Objective one: definitions related to lesson planning	Terminology: Curriculum, unit of instruction, lesson plan, goals and objectives	Groups of 3 students use worksheet and text to develop definitions. Then two groups exchange to finalize definitions.	Work-sheets
7 minutes	Checking for understanding	Examples of terminology on transparency	Students "name" example using terminology	Samples
8 minutes	Practice	Linkages among concepts: curriculum, unit of instruction, lesson, goals, objectives	Students develop "curriculum sketch" including: curriculum, unit of instruction, lesson, goal and 2 objectives in content area of choice	Walk around and check on work
3 minutes	Summary & link to next lesson	Review of key terms Next lesson: kinds and level of objectives	Note reading for next week in syllabus.	

Sample Form B: Lesson Plan

Instructor name _____ Date of lesson_____
Course name/number _____ Lesson/session number _____
Start time _____ End time _____   Room/Building _____
Number of participants _____   Room set-up _____
Equipment, materials, supplies:
Purpose and goal of lesson:

Lesson Introduction:

Learning Objective	Teacher Activity	Student Activity	Time Allocation	Equipment and Material

Lesson Summary:

Transition to next session:

Evaluation procedures:

Notes and comments:

Sample Form C: Lesson Plan

Instructor Name:		Date of Lesson:		Number of Participants:		Course Name:
Start Time:	End Time:		Room/Building:			
Room Set Up Needs:						
Lesson Goals:						
How you'll introduce the Lesson:						

Framework for Lesson:

Learning Objective (each lesson must have at least one)	Teacher Activity	Student Activity	How You'll Assess Each Objective	Connection to Learning Theory (e.g., Kolb's Theory of Experiential Learning) and an explanation of what activities address what elements of the theory	UDL Principles Addressed (and an explanation of how any specific principle is addressed)	Time Allocation	Equipment and Material

How you'll summarize the lesson:	
How you'll prepare learners for the next lesson:	
CAT(s) you'll use:	
Notes and comments:	

Section 17: Lesson Plan Quality Indicators

Use the following checklist to judge the quality of your lesson plans. You might use a +/- scoring just to see how you are doing. Because the items are not equal in value, it is not really appropriate to give a "total" score. But as you strive to develop more complete and higher quality plans, this checklist can be of value to you. As you become more skilled in lesson planning, you may want to develop your own checklist that highlights the features that are critical to your particular teaching situation.

Lesson clearly states one or more learning outcomes
       Objectives are measurable
       Objectives are appropriate for audience
       Objectives move toward more complex learning
       Objectives can be attained in time allowed

Plan includes an introduction
       Designed to get audience's attention
       Shares lesson objectives
       Gives big picture and flow of lesson

Content included in lesson is essential for outcomes and audience characteristics
       Key content is included – no missing or extraneous information
       Additional content provided through readings, reference list, and appendices
       Alternative perspectives provided as appropriate

Content is relevant to audience and work environment
       Content ties to audience interests, intended use
       Examples are relevant for audience experience
       Content is current or historically appropriate

Content organized to maximize learning
       Sequencing is logical, defensible
       Grouping of content is logical and meets learner needs

Emphasis is on application and use of learning
       Activities provide balance of new information and making meaning
       Activities provide opportunity for clarification
       Activities provide opportunity for practice
       Feedback is given about performance, progress, skill gains
       Learning aids available to provide support as needed

Time allocations seem appropriate
       Time allocations noted in plan
       Objectives and activities can be accomplished within time allowances
       Time provided for transitions, breaks and other non-instructional events
       Time is balanced among different kinds of activities (active/passive; individual/group)

Time is flexible; contingency plans in place
Time allocations fit needs of audience

Plan incorporates variety of strategies, methods and techniques
Variety provides balance for learning styles
Variety provides accommodates instructional objective attainment
Variety does not overwhelm effectiveness of instruction
Variety intentional aligns with UDL principles:
Multiple Means of Representation
Multiple Means of Action and Expression
Multiple Means of Engagement

Instructional media supports learning and conduct of lesson
Media supports incorporation of UDL principles
Media appropriate for audience
Media appropriate for instructional objectives
Media appropriate for facility, budget, technical support, instructor ability

Plan incorporates strategies to assess and reinforce learning
Strategies allow learners to show what they know in different ways (UDL)
Practice opportunities include feedback
Learners "know they know"
Summarization of content and experience included in plan
Tests, quizzes and other assessment strategies used appropriately

Plan includes conclusion and transition
Conclusion stimulates further thinking, learning, and action and reflection
Conclusion provides useful summary, review
Conclusion supports transfer and application

Plan identifies materials and resources needed
Materials and equipment listed
Instructional supplies listed
Room layout, design, facility needs identified

Section 18: References

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