COMMON FACULTY DEVELOPMENT PROGRAM

DEVELOPER COURSE

AUTHOR’S HANDBOOK

The Army University
Faculty and Staff Development Division
Fort Leavenworth, Kansas 66027-1352

14 February 2017

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PREFACE

The Army University Common Faculty Development Program – Developer Course Author’s Handbook is intended as a reference for lesson authors who are preparing topic-based instructional material to use in educational institutions. Originally intended for use by curriculum developers, primarily lesson authors, of the U.S. Army Command and General Staff College (CGSC) resident and nonresident programs, the Handbook has also served as a useful tool for other curriculum developers in other Training and Education Institutions where topic-based lessons are developed. It describes the process for creating courseware for individual lessons that effectively support higher level module, block, and course objectives. Specifically, it guides the lesson author in the process of translating learning objectives into a sound instructional plan that will assist instructors in helping students learn.

Throughout TRADOC, developers must frequently revise curriculum in response to changes in mission, guidance, or resources. As a lesson author, for either a current lesson under revision or a new one in development, you should use the Accountable Instructional System (AIS) process as presented in this handbook. You will find it useful to revisit, review, rework, and reword as you progress through the AIS phases, especially after you get feedback from other sources, receive new guidance, and identify resource constraints.

This Handbook is the result of continuing revision and updates driven by changes in Army and TRADOC requirements. It reflects the latest guidance, as well as recommendations by other lesson authors based on their personal experiences. Thus, this revision of the Handbook includes significant changes to the content of chapters and to the content and sequencing of appendices:

- **Army Learning Model 2015 (ALM 2015).** Key information regarding ALM 2015 concepts has been added in the introduction and at applicable places throughout the chapters.

- **Assessment.** Greater emphasis has been given to the design and development of assessment plans. Assessment related components and steps have been added to Chapters 2 and 3; Appendix D has been expanded to provide more information regarding test construction; an extract of the CGSC Bulletin #903 addressing assessment has been included as Appendix E; assessment tools, including sample grading rubrics and CGSC Forms 1009 are provided in Appendix F; and a new Appendix G has been added to describe informal “checks on learning” appropriate for the apply step of the ELM.

- **Methods of Instruction.** Appendix H has been updated to include a more comprehensive listing of methods of instruction that lesson authors may use in the generalize new information step of the ELM. This list aligns with the methods of instruction available in the Army-wide Training Development Capability (TDC) system.

- **Concrete Experience.** Appendix I provides examples of concrete experiences for consideration by the lesson author.

- Except for their sequencing with other appendices, Appendices K through N are essentially unchanged from the previous version of the Handbook.

We hope you find this a useful resource in your lesson writing efforts.

All that is curriculum begins with a single lesson.
# ABBREVIATIONS

<table>
<thead>
<tr>
<th>AAR</th>
<th>After Action Review</th>
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</thead>
<tbody>
<tr>
<td>AIS</td>
<td>Accountable Instructional System</td>
</tr>
<tr>
<td>ASAT</td>
<td>Army Systems Approach to Training (replaced by TDC)</td>
</tr>
<tr>
<td>CE</td>
<td>Concrete Experience (a step of the ELM)</td>
</tr>
<tr>
<td>CGSC</td>
<td>Command and General Staff College</td>
</tr>
<tr>
<td>CMI</td>
<td>Classified Military Information</td>
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<tr>
<td>CUI</td>
<td>Controlled Unclassified Information</td>
</tr>
<tr>
<td>DC</td>
<td>Deputy Commandant</td>
</tr>
<tr>
<td>ELM</td>
<td>Experiential Learning Model</td>
</tr>
<tr>
<td>ELO</td>
<td>Enabling Learning Objective</td>
</tr>
<tr>
<td>GNI</td>
<td>Generalize New Information (a step of the ELM)</td>
</tr>
<tr>
<td>ILE</td>
<td>Intermediate Level Education</td>
</tr>
<tr>
<td>IMS</td>
<td>International Military Student</td>
</tr>
<tr>
<td>IPR</td>
<td>In-progress Review</td>
</tr>
<tr>
<td>JPME</td>
<td>Joint Professional Military Education</td>
</tr>
<tr>
<td>P&amp;P</td>
<td>Publish and Process (a step of the ELM)</td>
</tr>
<tr>
<td>PJE</td>
<td>Program for Joint Education</td>
</tr>
<tr>
<td>QAO</td>
<td>Quality Assurance Office</td>
</tr>
<tr>
<td>SME</td>
<td>Subject Matter Expert</td>
</tr>
<tr>
<td>TDC</td>
<td>Training Development Capability (new system to replace previous ASAT system)</td>
</tr>
<tr>
<td>TLO</td>
<td>Terminal Learning Objective</td>
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<tr>
<td>USACGSC</td>
<td>U.S. Army Command and General Staff College</td>
</tr>
<tr>
<td>DAPS</td>
<td>Defense Automation Printing Service</td>
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GLOSSARY

**Action Statement.** An element of the learning objective. The learning objective action statement specifies what a student is to be able to do as a result of the educational experience.

**Advance Sheet.** Derived from the lesson plan. The advance sheet provides the student with key information about the lesson scope, learning objectives, and study requirements. There are two types of advance sheets: block (or module) advance sheets and lesson advance sheets.

**Affective Domain.** One of three learning domains defined in Bloom’s Taxonomy. The affective domain deals with the emotional, or feeling, aspect of learning and offers the means for the student to internalize the new material that the teacher is presenting. Without this internalization the new material does not become part of the student. The affective domain consists of five levels: receiving, responding, valuing, organization, and characterization of a value or value complex. The progression through these five levels is from simply being aware through an organized internalization of an attitude or value which becomes the defining characteristics of that person.

**Analysis Phase.** First phase of the Accountable Instructional System (AIS). The analysis phase is the critical link between identifying the educational requirements and developing the instruction. The phase begins with the learning objective action statement or given topic. In this phase, the lesson author must determine what to teach, how much to teach, the students’ backgrounds, and the available resources.

**Apply.** Fifth and last step of the Army Experiential Learning Model; the “check on learning.” The *apply* is similar to the Assessment, in that it is linked to ELO standards; however, the *apply* should not be delayed. The *apply* serves as a means for the verification of students' achievement of the ELO standards before they leave the classroom. Instructors have significant latitude on how to accomplish this and may use such techniques as “muddiest point,” “one-sentence summary,” and other approaches. If the *apply* indicates that students are unclear about key aspects of the lesson content, the instructor can return to the *generalize new information* (GNI) step to readdress those key points and ensure the students are adequately prepared to complete any future assessments that may pertain to the lesson content.

**Assessment.** Measurement of student learning as defined in the Assessment Plan (Appendix A of the Lesson Plan). Assessment may be either formative or summative. Although similar to the *apply* step of the ELM, assessment is more formal, and is mandated by the institution to measure student achievement of the learning objectives. The assessment may be delayed, as with a writing assignment due at a future time or a future exercise that serves as the means to assess the mastery of skills taught in the lesson. Assessment should not be confused with evaluation, which examines programs and courses—not students.

**Classified Military Information (CMI).** CMI is classified information that an original classification authority has determined to be of such sensitivity that it requires special designation and protection in the interest of national security. Coordination is required with the local foreign disclosure office prior to release. There are three security classifications for CMI: Confidential, Secret, and Top Secret. CMI requires appropriate classification and foreign disclosure restriction statements.
**Cognitive Domain.** One of three learning domains defined in Bloom’s Taxonomy. The cognitive domain deals with the thinking aspect of learning: acquiring, recognizing, and manipulating facts, developing the intellectual skills to effectively break down these facts into their components, and to recognize the relationships of the components and how they are organized. The cognitive domain is described by six developmental levels: knowledge, comprehension, application, analysis, synthesis, and evaluation.

**Concrete Experience (CE).** First step of the Army Experiential Learning Model. The *concrete experience* serves as a trigger of past experience and knowledge, as a focusing mechanism for the lesson that follows, and as a support for teaching new content. The CE appeals to the student’s affective domain behavior of “valuing” or higher while providing a common “experience” that is connected to the new lesson content.

**Condition Statement.** An element of the learning objective. The condition statement describes the learning environment. It states what will be provided (a scenario, small group), what will be denied (without references, closed-book), and the time constraints, if any.

**Controlled Unclassified Information (CUI).** Unclassified information of such sensitivity as to warrant a degree of control over its use and dissemination. CUI requires appropriate classification and foreign disclosure restriction statements. Unclassified products are considered CUI and require an appropriate restriction statement unless determined and marked as “Public Domain.” Information subject to the Privacy Act of 1974 is CUI and usually qualifies for application of the marking FOR OFFICIAL USE ONLY. Another category of CUI is technical information related to research, development, engineering, test, evaluation, production, operation, maintenance, or employment of military equipment systems.

**Design Phase.** Second phase of the Accountable Instructional System (AIS). The design phase uses the results of the analysis phase to help identify the lesson components. Topic lists are translated into realistic enabling learning objectives (ELOs) and standards that define the ELO action statement.

**Development Phase.** Third phase of the Accountable Instructional System (AIS). In this phase, the ELO, standards, and lesson content outline are converted into an actual lesson plan and advance sheet.

**Develop.** Fourth step of the Army Experiential Learning Model. This step is student-centric. It provides students a final opportunity to express how the lesson content will be of value to them in the future.

**Evaluation.** Examination of the effectiveness of a course or program. Evaluation may be either formative or summative. Evaluation should not be confused with assessment, which measures the performance of students.

**Evaluation Phase.** Fifth phase of the Accountable Instructional System (AIS). Although depicted last in the AIS, this is actually a continuous process that consists of data collection and analysis to determine effectiveness and value of a course or program. It includes both formative and summative components. Summative evaluation may be internal (inside the schoolhouse) or external (outside the schoolhouse).
**Experiential Learning Model (ELM).** More precisely, the Army Experiential Learning Model (Formerly, the CGSC Experiential Learning Model). The ELM is based on the work of such prominent educational theorists as John Dewey, David Kolb, Jean Piaget, Kurt Lewin, and others and is the principle tool for the delivery of instruction in Army educational institutions. The ELM also serves as a framework for planning the conduct of a lesson. It consists of five steps: *concrete experience (CE), publish and process (P&P), generalize new information (GNI), develop* (value), and *apply* (check on learning).

**Foreign Disclosure.** The conveying of classified military information (CMI) and controlled unclassified information (CUI) through oral or visual means to an authorized representative of a foreign government.

**Foreign Disclosure Officer (FDO).** Member of the Department of the Army designated in writing to oversee and control coordination of specific disclosures of CMI and CUI. FDOs are authorized for appointment to the lowest command level that is the proponent for Army-created, developed, or derived CMI and CUI.

**Formative Assessment/Evaluation.** Conducted during the conduct of the lesson (assessment) or course (evaluation). Formative assessment or evaluation allows for intermediate feedback to permit the application of corrective action that will improve the final result. An example is a mid-term exam which can help students understand where they need to focus their efforts to improve their final grade.

**Gap Analysis.** A component of the Analysis Phase. Gap Analysis compares the desired educational outcome of the Topic Analysis with the student’s pre-instruction foundational knowledge as determined by the Target Audience Analysis.

**Generalize New Information (GNI).** Third step of the Army Experiential Learning Model. The GNI is where the lesson content is taught. The content to be taught must focus on those aspects that are essential to achieve the learning objective standards. Both content and methodology must be considered during GNI to ensure achievement of the appropriate learning level. GNI can include a wide variety of techniques, including lecture, discussion, demonstration, role-play, simulation, case study, and other approaches.

**Goal Analysis.** A component of the Analysis Phase. Goal analysis identifies the lesson goals and how the lesson supports the Block Terminal Learning Objective.

**Implementation Phase.** Fourth phase of the Accountable Instructional System (AIS). This phase has two distinct components. Component 1 ensures instructors understand the course vision, content, and delivery methodology, and are ready to teach. Component 2 of the implementation phase is the actual conduct of the course.

**Learning Level.** An element of the learning objective based on Bloom’s six cognitive domain levels of learning.

**Learning Objective.** A precise statement of the student’s expected performance (action), the learning environment (condition), and the required specificity (standards) for student performance.
Lesson Plan. The author’s means of communicating lesson intent to the instructors. The lesson plan organizes what is presented in the lesson as well as when and how it is to be presented.

Milestone Plan. A component of the Analysis Phase. The milestone plan defines deadlines associated with such tasks as obtaining copyrights and publication requirements and serves as a road map for managing the development process.

Public Domain. Information deemed to be actually or potentially in the public domain and suitable for release to the public at large (not only citizens of the U.S. and immigrant aliens, but also citizens of all foreign countries acting in a private capacity).

Publish and Process (P&P). Second step of the Army Experiential Learning Model. The publish and process step is the critical link between the concrete experience and the generalize new information. It consists of two distinct components: the publish surfaces the student reactions to the CE, reflecting their experience and knowledge of the topic, while the process initiates a reconciliation of where the student is and, where the student should be at lesson end. The P&P may also reveal student bias and other preconceptions that must be dealt with if learning is to occur. This is the first opportunity in the ELM for students to demonstrate critical thinking.

Rubric. A scoring tool that clarifies the specific expectations for an assignment and provides a detailed description of what constitutes acceptable or unacceptable levels of performance. A rubric answers these questions: By what criteria will the work be judged? What is the difference between good work and weaker work? How can we make sure our scores are valid and reliable? How can both students and faculty members focus their preparation on excellence? A basic rubric includes four components: a task description that clearly details the assignment or activity that the student needs to accomplish, a performance scale that describes each level of the performance or points to be assigned, criteria that define the conditions of successful performance, and standards that describe how well the criteria must be met.

Resource Analysis. A component of the Analysis Phase in which the author identifies resources and constraints.

Standard. An element of the learning objective. The standards help to define the action statement by specifying what constitutes successful accomplishment of the learning objective. Standards provide the criteria used to measure if and how well the student mastered the task.

Summative Assessment/Evaluation. Conducted at the conclusion of the lesson (assessment) or course (evaluation). Summative assessment or evaluation does not allow for changes or corrective action to the current situation, but may inform future changes to assessment instruments or curriculum. An example is a final exam—students have no opportunity to improve their grades following this summative assessment.

Target Audience Analysis. A component of the Analysis Phase. Target audience analysis describes the adult learners and their existing experiences, knowledge, and abilities.

Topic Analysis. A component of the Analysis Phase. Topic analysis identifies the behaviors and abilities students must master to meet the educational outcome described by the ELO action statement or assigned topic for an elective.
INTRODUCTION

This Author's Handbook describes lesson development as a component of the program planning process used at Army educational institutions such as the Command and General Staff College. It includes an introduction plus five chapters; each chapter corresponds to a phase of the Accountable Instructional System (AIS). Step-by-step procedures explain how to complete the various tasks in the process of writing topic-based instructional material. To aid the lesson author in this process, each phase-related chapter ends with a worksheet that may serve as a checklist or trigger list of things to do or to consider in completing the components of the phase. Appendices provide additional information applicable to all authors. To provide context regarding the instructional design and development, this introduction provides a brief overview of the foundations of the AIS process. It begins with a summary of the Army Learning Model that serves as the framework for all Army education and training and concludes with a description of the role and application of the AIS using the CGSC program planning and curriculum development as an example. Subsequent chapters will detail the specific components and steps used by lesson authors through each of the five phases of the AIS.

ARMY LEARNING MODEL 2015 (ALM 2015)

The Army Learning Concept for 2015 (ALC 2015) describes the current TRADOC initiative to improve Army education and training (Department of the Army, 2011). To convey its implementation in practice beyond the theoretical concept stage, the Army Learning Concept is now commonly described as the Army Learning Model 2015 (ALM 2015). The ALM 2015 integrates training and education in a continuum of learning rather than treating the two as distinct, mutually exclusive learning domains. (Appendix A provides additional information regarding ALM 2015 definitions and concepts). Specifically, ALM 2015 addresses some chronic challenges in Army education, including the following (Department of the Army, 2011):

- Instructors possess subject matter expertise but lack proficiency in teaching.
- Learning is typically instructor-led, passive lecture-based instruction that relies heavily on slide presentations.
- Training and lesson plans are timed to fit predetermined course lengths and are not necessarily synchronized or sequenced to meet individual learner needs.
- Distance learning tools are used ineffectively.
- Learner assessments do not measure actual learning levels or ability to apply knowledge to realistic scenarios.

To develop ALM 2015-based curriculum, lesson authors should strive to dramatically reduce or eliminate instructor-led slide presentation lectures. Converting most classroom experiences into collaborative problem-solving and application activities encourages learners to think and helps them understand the relevance and context of what they learn. Lesson authors are also encouraged to use a combination of blended learning approaches that incorporate simulations and gaming to provide realistic training and to more effectively assess students’ abilities to apply their knowledge in real-world settings.

ALM 2015-based curriculum should emphasize the relevance of what students learn by ensuring that the learning occurs when and where it is of most value to them. For example, at CGSC, this requires that lesson authors consider the broad range of settings in which CGSC courses are delivered including the following:
- Ft. Leavenworth resident course (face-to-face, Classroom XXI);
- Satellite courses (Ft. Belvoir, Ft. Lee, Ft. Gordon, and Redstone Arsenal);
- Reserve Component (TASS) face-to-face courses at numerous remote sites across the country and overseas (may not have Classroom XXI capabilities);
- Computer-based instruction as part of the self-paced distributed learning program for completion of the ILE Core Course; and
- Distributed learning Advanced Operations Course that incorporates both synchronous and asynchronous online delivery techniques.

**Key ALM 2015 Components**

The Continuous Adaptive Learning model, discussed in general on pages 16 and 17 of TP 525-8-2, contains the key components that apply to developing training and curriculum. It provides a “framework comprised of elements that together create a **learner-centric, career-long continuum of learning** that is **continuously accessible** and provides learning at the point of **need** in the learner’s career” [emphasis added]. For the lesson author, the Continuous Adaptive Learning model describes the importance of a flexible and adaptive infrastructure to enable “…the shift from a course-based, throughput-oriented, instructor-led model to one that is **centered on the learner**” [emphasis added]. It goes on to describe how “[t]he model presents the learner with **challenging content** through a **balanced mix of live and technology-delivered means**, available in **both resident and nonresident venues**” [emphasis added].

The Continuous Adaptive Learning model has five elements (p. 17):

2. Learner-centric 2015 learning environment.
5. Sustained adaptation.

The following paragraphs provide a summary of each of these elements. For a more comprehensive discussion of these elements, refer to TRADOC Pam 525-8-2, pages 17 to 29. Not all elements are relevant to all training/lesson development or teaching/training.

**21st Century Soldier Competencies**. Not **all** competencies may be included in every lesson, but **some** should probably be in every one.

1. Character and accountability.
2. Comprehensive fitness.
3. Adaptability and initiative.
4. Lifelong learner (includes digital literacy)
5. Teamwork and collaboration.
7. Critical thinking and problem solving
8. Cultural and joint, interagency, intergovernmental, and multinational competence
9. Tactical and technical competence (full spectrum capable).
**Learner-centric 2015 learning environment.** Instructional strategies, expert facilitators, and technologies that support the learner. These are the critical characteristics of an ALM 2015 lesson or training package.

2. Blended learning.
3. Regional learning centers (satellite schools at unit locations).
5. Mobile learning, dL modules.
6. Assessments, evaluations (rigor and relevance). [Refers to rubrics, feedback, etc.]
7. Tracking & feedback (Army Career Tracker). [leadership task, personnel related]
10. Performance support apps (mobile digital devices)
11. Soldier created content (wikis, blogs, apps, etc.).
12. Virtual training environments (e.g., JTCOIC-training brain).
13. Single portal to digital learning resources.

**Career span framework.** This section has minimal relevance to institutional curriculum development. It pertains more to coaching and counseling, and personnel management of an individual over his or her career.

**Adaptive development and delivery infrastructure.** Most of this section pertains to topics outside the training developer/instructor purview, such as the outdated school model, instructor selection and training programs, and the resourcing model. These topics are all important aspects of how the Army trains and educates. The paragraph on page 28, “Digitized learning content” may be worth reviewing for incorporation in topic-based courseware. According to TP 525-8-2, adaptive learning “endeavors to transform the learner from a passive receptor of information to a collaborator in the educational process” (p. 62). This is consistent with the Experiential Learning Model approach to education.

**Sustained adaptation.** This is a long-term philosophy of regular feedback, integrating lessons learned, and established a position of Chief Learning Innovation Officer (CLIO). This is generally accomplished through the effective application of the Accountable Instructional System (AIS).

**Potential “Checklists”**

Two sections serve effectively as checklists or memory aids for training developers and lesson authors: “Did I do this? Have I thought about this? Is this particular aspect of ALM 2015 addressed somewhere in my lesson?” These are extracted from TP 525-8-2.

**Instructional Guidelines Applicable across All Cohorts and Echelons (TP 525-8-2, p.25)**

- Convert most classroom experiences into collaborative problem solving events led by facilitators (vice instructors) who engage learners to think and understand the relevance and context of what they learn.
- Tailor learning to the individual learner’s experience and competence level based on the results of a pretest and/or assessment.

- Dramatically reduce or eliminate instructor-led slide presentation lectures and begin using a blended learning approach that incorporates virtual and constructive simulations, gaming technology, or other technology-delivered instruction.

- Use 21st century Soldier competencies as an integral part of all learning activity outcomes; establish metrics and standards for each competency by cohort and echelon.

- Examine all courses to identify learning content that can be transformed into performance support applications, develop applications, and introduce application use in the schoolhouse.

- Develop technology-delivered instruction incorporating adaptive learning and intelligent tutors with a goal of reducing learning time while maintaining effectiveness for resident and nonresident use.

- Integrate digital literacy skills appropriate at each career level and foster skills to enable and encourage a career-long learning mindset.

- Use virtual and game-based training to add realism and operational relevance at all levels.

- Integrate joint, interagency, intergovernmental, and multinational, culture, and comprehensive fitness goals into all courses at the level and degree that fits the learning audience.

- Establish a full spectrum frame of mind in all learners, while maintaining flexibility to adapt learning content to meet operational demands.

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**First Steps toward a Learner-Centric Model (TP 525-8-2, p. 30)**

- Convert most classroom experiences into collaborative problem-solving events led by facilitators (vs. instructors) who engage learners to think and understand the relevance and context of what they learn.

- Tailor learning to the individual learner’s experience and competence level based on the results of a pre-test/assessment.

- Dramatically reduce or eliminate instructor-led slide presentation lectures and begin using a blended learning approach that incorporates virtual and constructive simulations, gaming technology, or other technology-delivered instruction.

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**CGSC EDUCATIONAL PURPOSE**

The U.S. Command and General Staff College (CGSC) comprises four of the seven schools that make up CAC LD&E. CGSC incorporates Army Learning Model (ALM) 2015 Concepts and Principles to support the broad Educational Outcome defined by the CAC LD&E Vision and Mission—to **educate and develop leaders to adapt and dominate in Unified Land Operations**. The CAC LD&E Mission Essential Task List (METL) provides further insight regarding the “Commander’s Intent” for achieving the broad Educational Outcome. Along with the Frontier Imperatives, these help focus the educational curriculum and terminal learning objectives for the CGSC schools. The current CAC LD&E guidance is provided here for reference (Note the emphasis of ALM 2015 in the CAC LD&E METL):

**CAC LD&E Vision:** We are an innovative, versatile, and learning organization that inspires and strives for excellence in enabling Army leaders to adapt and dominate in Unified Land Operations (ULO) now and in the future.
CAC LD&E Mission: CAC LD&E educates and develops leaders to adapt and dominate in Unified Land Operations, assists TRADOC Commander in synchronizing Army Leader Development, supports strengthening of the Army Profession, and provides support to CAC, TRADOC, DA and Joint Staff as directed.

CAC LD&E Mission Essential Task List (METL)

- Provide premier Professional Military Education to inculcate leaders with the fundamentals of the art and science of war; ensure accreditation, quality assurance and assessment.
- Develop Army Leader Development Strategy and related concepts; synchronize Army Leader Development; manage the Army Leader Development Program; assess Army Leader Development to ensure Army training, education and experience develop the leaders we need to dominate in ULO.
- Develop Army Profession and Ethics doctrine, concepts and training support products; coordinate Army Profession and Ethics initiatives; assess Army Profession and Ethics to develop the character and commitment of Army Professionals.
- Assist TRADOC Commander in managing the Army Learning Coordination Council to ensure successful implementation of the Army Learning Model (ALM) 2015.
- Provide premier Cultural and Foreign Language education and training to enable the U.S. military to operate effectively across the globe.
- Develop leaders of sister services, government agencies, and Allies and partners and conduct visits, exchanges, and collaboration to promote joint, interagency, inter-government, and multinational understanding and improve capacity for unified action.
- Develop Faculty and curriculum to implement the ALM 2015 and inspire and strive for excellence in educating and training Army leaders.
- Conduct research, analysis, and concept development and publish articles, studies, and books to contribute to the Military’s Professional Body of Knowledge and support the needs of the Army, the Joint Force, or the Department of Defense.

Frontier Imperatives: "Frontier" is the Combined Arms Center call sign. As such, it is an appropriate motto to remind us of the leader behaviors which are essential to realizing our vision. Each imperative is what is expected of Leaders and members of CAC LD&E. Each imperative explains what we are, know, and do every day.

Faculty who are prepared professionals always; who practice the Army Learning Model; who develop and inspire their Students; who achieve learning outcomes; who seek self-improvement and contribute to curriculum improvement.

Role models who demonstrate Army Leader attributes and competencies (ADP 6-22), who live Army values (LDRSHIP) and embody the Warrior Ethos, who demonstrate the competence, character, and commitment of Army Professionals, and who are respected inside and outside the Army Profession.

Oriented outward and toward the future, seeking to understand the current operational environment and future trends, and focused on how to best improve the Army and Joint Force through our competencies, functions and contributions.

Never quit before reaching the standard or accomplishing the mission. Never accept substandard nor compromise our principles.
Team mates par excellence who cross talk, proactively share ideas and information, and who seek to achieve shared understanding and enable the success of our team mates in CAC, the Army and the Joint Force as well as among our Allies and key partners.

Innovators who are creative in our approach to education, strategy and concept development, and research and who are open to new ideas and different perspectives.

Experts in our assigned functions who are effective communicators, inspire confidence and emulation, and contribute to the Army and Military's professional body of knowledge.

Respect and protect one another; respect and promote the diversity of our individual team mates and their Families; reflect pride in our organization and a positive, enthusiastic and caring attitude toward others.

THE ACCOUNTABLE INSTRUCTIONAL SYSTEM (AIS) – A SYSTEMATIC APPROACH TO CURRICULUM DEVELOPMENT

The Accountable Instructional System (AIS) is the official process through which ALM 2015 concepts and principles are incorporated within CGSC curriculum planning and development. The AIS helps organize all course development activities by identifying the requirements for a lesson and guiding the lesson construction and delivery. It also includes the processes of determining student achievement, identifying needed course improvement, and incorporating emerging technologies.

The AIS is the College’s systematic approach to curriculum development and assessment. Following the AIS process provides lesson authors the framework to—

- identify the steps for developing student and instructor lesson materials,
- organize the lesson content logically,
- choose the most effective teaching methods and media for the content and educational environment, and
- collect and use student test results to improve the quality of the lesson.

The following presents an overview of the AIS phases. A more detailed description of each phase and its components is in the following five chapters.

Phase I. ANALYSIS. Analyze and determine required instruction.

- Goal Analysis. Identify the lesson goals and how the lesson supports the Block Terminal Learning Objective.
- Topic Analysis. Identify the behaviors and abilities students must master to meet the educational outcome described by the ELO action statement or assigned topic for an elective.
- Target Audience Analysis. Describe the adult learners and their existing experiences, knowledge, and abilities.
- Gap Analysis. Compare the desired educational outcome of the Topic Analysis with the student’s pre-instruction foundational knowledge determined in the Target Audience Analysis.
- Resource Analysis. Identify resources and constraints.
- Milestone Plan. Develop a course milestone plan.
Phase II. DESIGN. Design instruction to meet an identified requirement.

- **Write the Learning Objective.** Write an action statement, condition statement, and standards that define what students will be able to do as a result of your lesson.
- **Develop the Taxonomy of Educational Objectives.** Determine the cognitive domain level of your lesson. Consider ways to introduce affective domain behaviors into your lesson.
- **Conduct Preliminary Content Research for Possible Lesson Materials.** Identify information available to assist in meeting the objectives — resources, methodology, doctrine, publications, guidance, etc.
- **Develop an Assessment Plan Outline.** Determine how to assess the standards of the learning objective. Consider assessment reliability and validity, and time requirements or limitations for students and instructors. Outline an assessment plan.
- **Develop an Outline of Lesson Content.** Determine the content that directly supports the standards of the learning objective. Consider how learning events will be presented. Outline a plan for the conduct of the class.
- **Update Resource Analysis.** Continue the process of resource analysis begun in the analysis phase.
- **Update Milestone Plan.** Correct the milestone plan based on accomplishments in the design phase.

Phase III. DEVELOPMENT. Develop instructional material to support courseware requirements.

- **Develop Lesson Plan and Advance Sheet.** Identify the lesson goals and how the lesson supports the Block Terminal Learning Objective.
- **Develop the Assessment Plan.** Identify how student behaviors and abilities will be measured to ensure students have achieved the standards prescribed by the ELO.
- **Develop “Conduct of the Lesson.”** Identify the behaviors and abilities students must master to meet the educational outcome described by the ELO action statement or assigned topic for an elective.
- **Update Resource Analysis.** Continue the process of resource analysis begun in the analysis phase.
- **Update Milestone Plan.** Revise the milestone plan based on accomplishments in the design phase.

Phase IV. IMPLEMENTATION. Complete preparations for and delivery of instruction.

- **Conduct Final Preparations for Implementation.** Ensure the course has included plans for the instructor train-up and considered the nonresident learning environment.
- **Implement the Course or Lesson.** Conduct instruction, student assessment and feedback.

Phase V. EVALUATION. Evaluate the effectiveness of the educational process and product.

- **Conduct Formative Evaluation.** Conduct ongoing review and adjustment of course/lesson design, content and methodologies throughout the development and implementation phases.
- **Conduct Summative Evaluation.** Conduct a comprehensive, post-implementation review and adjustment of course/lesson based on assessment instruments and faculty and student feedback.

### Keys to using the AIS

The AIS model demonstrates the continuing nature of a systems approach to curriculum development and the interdependence of the processes of the five phases, Analysis, Design, Development, Implementation, and Evaluation, as depicted in Figure 1. This follows the TRADOC Systems Approach to Training (SAT) Model. The evaluation arrows in the center show that the activities of one phase may generate data or information that results in a revision of the products of another phase (or phases). For example, during the design phase, the course author may determine that some educational topics identified during the analysis phase are not realistic. The author should then return to the analysis phase for appropriate revisions. This act of continual evaluation provides the checks and balances that lead to a quality curriculum.

![Figure 1. Accountable Instructional System (AIS) Model](image)

### Hierarchy of Educational Outcomes, Objectives, and Standards

The AIS directly supports the CGSC mission by ensuring that graduates achieve the broad educational outcomes that will enable them to be successful throughout the next 5-10 years of their careers. In essence, these educational outcomes describe “what a CGSC graduate looks like.” More specifically, these outcomes loosely define the content focus for CGSC courses spanning the areas of leadership, adaptability in planning and operations, and competence in all aspects of Unified Land Operations. From these broad educational outcomes, Terminal Learning Objectives (TLOs) are then defined for blocks of instruction to fulfill the educational requirements in each area defined by the educational outcomes. The TLOs, in turn, define subordinate Enabling Learning Objectives (ELOs) that specify the individual lesson requirements that support the
block objectives. Finally, the standards of the ELOs define the specific content necessary to accomplish that discrete knowledge requirement within the broader context of the CGSC curriculum. Figure 2 depicts the hierarchical relationship of these important elements of the CGSC educational system.

**Figure 2. CGSC Educational Objectives Hierarchy**

**Responsibilities**

The *Deputy Commandant* (DC), CGSC, provides direction and guidance for the AIS process. The DC’s annual planning guidance provides the framework for course development.

The *Dean of Academics* ensures academic policy development and execution for the CGSC schools.

The *School and Academic Department Directors* play a key role in the AIS process. It is each school or academic department director’s responsibility to ensure that authors use the AIS process to develop courseware that supports the CGSC mission. To accomplish this goal, each director must—

- become personally involved in the AIS approach to courseware development,
- ensure lesson authors complete Faculty Development Phase 3 before performing lesson/course author duties and responsibilities,
- develop and publish annual school-specific curriculum development guidance that—
  - incorporates the DC’s annual planning guidance,
  - allows for course and lesson development upon identification of a valid need,
  - follows the AIS process, and
  - establishes reasonable suspense dates and milestones.

The *lesson author* is responsible for developing a lesson in accordance with the AIS process.
The author receives guidance and direction from the block or module author, and from academic department and school directors.

The *Faculty and Staff Development Division* is responsible for providing educational guidance.
Chapter 1

PHASE I. ANALYSIS

INTRODUCTION

The analysis phase is the critical link between identifying the educational requirements and developing the instruction. Analysis, at the lesson level, typically begins with the ELO action statement or topic given. The lesson author must then determine what to teach and how much to teach, the students’ backgrounds, and the available resources. Whether a lesson is new or pre-existing, a thorough analysis ensures its relevancy and necessity. The six components of the analysis phase include the following:

**COMPONENTS OF THE ANALYSIS PHASE**

<table>
<thead>
<tr>
<th>COMPONENT 1.</th>
<th>COMPONENT 2.</th>
<th>COMPONENT 3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal Analysis</td>
<td>Topic Analysis</td>
<td>Target Audience Analysis</td>
</tr>
<tr>
<td>COMPONENT 4.</td>
<td>COMPONENT 5.</td>
<td>COMPONENT 6.</td>
</tr>
<tr>
<td>Gap Analysis</td>
<td>Resource Analysis</td>
<td>Milestone Plan</td>
</tr>
</tbody>
</table>

- **Goal Analysis.** Identify the lesson goals and how the lesson supports the Block Terminal Learning Objective.
- **Topic Analysis.** Identify the behaviors and abilities students must master to meet the educational outcome described by the ELO action statement or assigned topic for an elective.
- **Target Audience Analysis.** Describe the adult learners and their existing experiences, knowledge, and abilities.
- **Gap Analysis.** Compare the desired educational outcome of the Topic Analysis with the student’s pre-instruction foundational knowledge determined in the Target Audience Analysis.
- **Resource Analysis.** Identify resources and constraints.
- **Milestone Plan.** Develop a course milestone plan.

**COMPONENT 1. GOAL ANALYSIS**

Phase I, Analysis, begins with Goal Analysis. Although block or course authors normally conduct the Goal Analysis, the lesson author must understand and preserve the relationship that exists between the lesson and the block or course goal. During the Goal Analysis, the lesson author clarifies the purpose of the lesson and how the lesson contributes to the established learning outcome.
How to Conduct a Lesson Goal Analysis

**STEP 1:** Develop a clear, concise lesson scope statement. If one already exists, review it to determine if it is appropriate. Does this statement clearly describe what you want the student to be able to do? Is it a clear description of the end state?

**STEP 2:** Determine if the lesson scope statement supports its block of instruction. If not, the block author or academic department must determine whether the lesson needs development or revision.

**STEP 3:** Determine how your lesson goal relates to, or interfaces with, the goals of other lessons. If the goals are related, coordinate with the other lesson authors to ensure that the lesson complements, not duplicates, other lessons.

---

**COMPONENT 2. TOPIC ANALYSIS**

Once you have determined that the lesson supports the block goal, identify exactly what the adult learner must accomplish to meet that goal. Given that lesson authors are normally provided an ELO, their focus must be on the standards that define the measurable educational outcomes of their lesson. It is imperative that the lesson author understands the following link: the action statement of the ELO is defined by the ELO standards and the standards are defined by the Generalized New Information (GNI) of the Army Experiential Learning Model (ELM). Occasionally, the lesson author will be given an ELO action statement without defined standards, which adds the requirement of developing those standards as well.

How to Conduct a Topic Analysis

**STEP 1:** Collect information about the lesson topic from all possible sources. Subject matter experts (SMEs), publications, libraries, internet, command directives, and previous course evaluations provide the lesson author a broad view of what is known about their topic. Consider the learning level for the material to be taught. Complete the basic research before you continue to other steps.

**STEP 2:** Develop a lesson topic list. Brainstorm and list all possible topics your lesson might cover. It is a good idea to involve SMEs in developing the topic list. Once you have brainstormed and refined your list, your focus becomes the educational outcome as defined by the enabling learning objective.

**STEP 3:** Identify which related topics are major topics and which are subtopics. The major topics will become the standards of your enabling learning objectives (ELOs) and the subtopics will become the basis of the lesson GNI.

**STEP 4:** Build a learning hierarchy of topics. Next, develop a topic hierarchy list. The hierarchy list places the topics in the sequence in which they should be taught. Start with the end state and ask yourself, “What must students be able to do before they can accomplish the requirement?”
COMPONENT 3. TARGET AUDIENCE ANALYSIS

Target Audience Analysis helps identify the skills, abilities, and experiences the adult learner brings to the lesson.

How to Conduct a Target Audience Analysis

**STEP 1:** Identify similarities and differences of resident and nonresident student experiences that may impact on student ability to achieve the lesson objectives.

**STEP 2:** Determine the type of target audience data you want to collect. For example, what does the target audience know about this topic? Will this knowledge be based on doctrine, experience, or a combination of the two?

**STEP 3:** Determine where to find target audience data. Personnel data forms and class demographics offer a wide range of information.

**STEP 4:** Develop a target audience profile. What is the range of knowledge and experience for students? What level of learning, course content, delivery methods, and instructional strategies would be appropriate for this range of knowledge and experience? The more variable aspect of this process is students’ experience.

COMPONENT 4. GAP ANALYSIS

Gap Analysis is essential to the process of instructional design. In this step, the lesson author compares the product of Topic Analysis to the product of Target Audience Analysis to determine not only what to teach, but also how much to teach in a given lesson. Without this analysis the author risks producing a lesson that neither advances student learning nor sustains student interest in the learning experience, or is beyond student capability.

How to Conduct a Gap Analysis

**STEP 1:** Analyze the target audience profile with respect to the topic list you developed. This analysis provides the lesson author with an understanding of what must be taught.

**STEP 2:** Refine the data from Step 1. The result of this analysis (what should they know and what do they already know) provides the information necessary for the learning objectives addressed in the design phase of lesson authoring.

**STEP 3:** Analyze the list with respect to the lesson goal. Do all the topics actually support the lesson goal? Are the topics critical for accomplishing the lesson goal?

COMPONENT 5. RESOURCE ANALYSIS

Resource requirements are critical factors in lesson development and authors must consider these throughout the entire process from the initial planning, through instructional development, to implementing and maintaining the lesson. While this component normally resides at the block author level, the lesson author should identify and forward unique resource requirements as necessary. The following questions will help focus resource requirements essential to block
It is not an all-inclusive list, but provides samples of the types of questions a lesson author should anticipate having to answer. Lesson authors should develop their own lists of resource questions based on their unique circumstances—circumstances that may differ between the resident and nonresident settings.

**How to Conduct a Resource Analysis**
(Normally, the block author conducts the Resource Analysis; however, elective authors may also find this useful.)

**STEP 1:** Determine the resources needed to support the lesson in a resident and a nonresident learning environment. Answer these questions:

<table>
<thead>
<tr>
<th>RESOURCE</th>
<th>QUESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>What specific equipment will you need (e.g., computers)? How will you use the equipment in the course? What quantities will you require?</td>
</tr>
<tr>
<td>Facilities</td>
<td>How much space will you require? What type? Are facilities available? Are there special environmental requirements?</td>
</tr>
<tr>
<td>Funds</td>
<td>What are the initial personnel, equipment, and facilities costs? What are the recurring costs associated with the course?</td>
</tr>
<tr>
<td>Personnel</td>
<td>What categories of personnel do you need to develop the lesson (for example, computer operators)? How many instructors do you need? What are the student requirements?</td>
</tr>
<tr>
<td>Time</td>
<td>What are the milestones? How much time do you need to develop the instruction? What is the estimated block or course length? When must you order material to meet course milestones?</td>
</tr>
</tbody>
</table>

**STEP 2:** Identify available resources. Available resources influence your planning for lesson design, development, and implementation. Answer these questions:

<table>
<thead>
<tr>
<th>RESOURCE</th>
<th>QUESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>What size computers are in the classroom? What size projection screen does the classroom have? Is the classroom on a computer network?</td>
</tr>
<tr>
<td>Facilities</td>
<td>How much work space does each student have? How large are the bulletin boards? How large is the classroom?</td>
</tr>
<tr>
<td>Funds</td>
<td>What is your printing budget? What is your copyright budget? Do you have funds to support a guest speaker?</td>
</tr>
<tr>
<td>Personnel</td>
<td>How many instructors does the school have available? How much administrative support does the department have? Who are the college resource personnel?</td>
</tr>
<tr>
<td>Time</td>
<td>How many hours do you have available to teach?</td>
</tr>
</tbody>
</table>
STEP 3: **Identify constraints.** Every lesson has constraints, such as maximum length, manpower, budget, and student load. Ignoring these constraints may lead to an instructional package that is either too large for the time allotted or that requires too large a share of resources compared to the relative importance of the lesson to the course and to the school/college mission. If faced with a resource constraint, select an alternative strategy or delivery approach. The following questions can help identify possible constraints.

<table>
<thead>
<tr>
<th>RESOURCE</th>
<th>QUESTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment</td>
<td>Will the available computers support the simulation you plan to run?</td>
</tr>
</tbody>
</table>
| Facilities | Is there room to post maps and overlays on the walls?  
Is there a student work area?  
Is there room to store reference materials in the classroom? |
| Funds | Are sufficient copyright dollars available in the department budget? |
| Personnel | Will you have to train all new instructors? |
| Time | How many other “non-author” duties take your time? |

**COMPONENT 6. MILESTONE PLAN**

During the initial lesson planning, develop milestones as a road map for managing the development process. Develop this plan early in the initial stages of lesson development. To meet deadlines, backward plan from the date the materials will be used in the resident classrooms. The following are general guidelines for accomplishing the steps to meet publication goals. Administrative days may vary by department. Identify any specific guidelines developed by your school or academic department.

**How to Develop a Course Milestone Plan**

(Normally, the course milestone plan is developed and managed by the block author; however, elective authors may also find this useful.)

**STEP 1:** Determine the date the materials are due in the classroom.

**STEP 2:** Identify any specific school/academic department administrative requirements and guidance. What are your school/department's specific milestones?

**STEP 3:** Determine the date the materials must be available in resident distribution.  
What materials do you require prior to class for instructor train-up?  
What is resident distribution's input to this milestone plan?

**STEP 4:** Contact the Defense Automation Printing Service (DAPS) for required lead times.

**STEP 5:** Determine the teaching department’s date for the formative evaluation of the teaching materials. All TLO’s, ELOs, course design, evaluation materials, and assessment instruments are reviewed.

**STEP 6:** Determine the date the materials are due to your department’s editor. Your editor reviews all the teaching materials for your department.
STEP 7: **Determine the time needed to obtain copyright permission.** Obtaining copyright permission can take up to 3 months depending on the request. The editor must have copyright permissions before releasing the materials. What are the budgetary implications of using copyright materials?

STEP 8: **Identify any specific milestones possibly missed.** Review school/department supplemental guidelines. Identify all key personnel and coordinate teaching materials.
# PHASE I – ANALYSIS 
## WORKSHEET

<table>
<thead>
<tr>
<th></th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. GOAL ANALYSIS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Lesson goal is clearly and concisely described in lesson scope statement.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Lesson scope statement supports its block of instruction.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Analysis identifies relationship to goals of other lessons.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2. TOPIC ANALYSIS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Contains information about the lesson from the following sources:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Subject Matter Experts.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Publications.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(3) Libraries.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(4) Internet.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(5) Command Directives.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(6) Previous Course Evaluations.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Contains a list of possible topics your lesson might cover.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Based on approved lesson goal.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Has input from other SMEs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Identifies which related topics are subtopics and which are major topics.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Contains a learning hierarchy of topics.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>3. TARGET AUDIENCE ANALYSIS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>a. Identifies relevant student experiences that may impact student ability to achieve lesson objectives. Considers similarities and differences of resident and nonresident students.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. Identifies what type of target audience data is needed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. Identifies where to find target audience data.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Contains a target audience profile.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. **GAP ANALYSIS**
   a. Compares target audience profile to topic list.
   b. Refines the data from the comparison of target audience profile and topic list.
   c. Contains comparison between target audience profile and topic list.
      (1) Do all topics actually support the lesson goal?
      (2) Are the topics critical for accomplishing the lesson goal?

5. **RESOURCE ANALYSIS - Remember both resident and nonresident**
   a. Identifies resources needed:
      (1) Equipment.
      (2) Facilities.
      (3) Funds.
      (4) Personnel.
      (5) Time.
   b. Identifies resources available:
      (1) Equipment.
      (2) Facilities.
      (3) Funds.
      (4) Personnel.
      (5) Time.
   c. Identifies constraints:
      (1) Equipment.
      (2) Facilities.
      (3) Funds.
      (4) Personnel.
      (5) Time.

6. **MILESTONE PLAN**
   a. Contains school-specific milestones.
   b. Contains additional administrative requirements and guidance specific to your lesson.
   c. Identifies the target dates for each milestone.
Chapter 2

PHASE II. DESIGN

INTRODUCTION

The design phase takes the products developed during the analysis phase to help identify the lesson components. At this point, the lesson author translates topic lists into realistic enabling learning objectives (ELOs)—if not provided by the block/course author—and the standards that define the ELO action statement. Verify that the order of learning is progressive and sequential through development of ELO standards. The following chart identifies the six components of this phase:

COMPONENTS OF THE DESIGN PHASE

<table>
<thead>
<tr>
<th>COMPONENT 1.</th>
<th>COMPONENT 2.</th>
<th>COMPONENT 3.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Write Learning Objectives</td>
<td>Develop Taxonomy of Educational Objectives</td>
<td>Conduct Preliminary Content Research</td>
</tr>
<tr>
<td>COMPONENT 4.</td>
<td>COMPONENT 5.</td>
<td>COMPONENT 6.</td>
</tr>
<tr>
<td>Develop Assessment Plan Outline</td>
<td>Develop an Outline of Lesson Content</td>
<td>Update Resource Analysis</td>
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<tr>
<td>COMPONENT 7.</td>
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<tr>
<td>Update Milestone Plan</td>
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</tbody>
</table>

- **Write the Learning Objective.** Write an action statement, condition statement, and standards that define what students will be able to do as a result of your lesson.

- **Develop the Taxonomy of Educational Objectives.** Determine the cognitive domain level of your lesson. Consider ways to introduce affective domain behaviors into your lesson.

- **Conduct Preliminary Content Research for Possible Lesson Materials.** Identify information available to assist in meeting the objectives — resources, methodology, doctrine, publications, guidance, etc.

- **Develop an Assessment Plan Outline.** Determine how to assess achievement of the learning objective standards. Consider assessment reliability and validity, and time requirements or limitations for students and instructors. Outline an assessment plan.

- **Develop an Outline of Lesson Content.** Determine the content that directly supports the standards of the enabling learning objective (ELO). Consider how to present learning events. Outline content for use in the generalize new information (GNI) step of the ELM.

- **Update Resource Analysis.** Continue the process of resource analysis begun in the analysis phase.
COMPONENT 1. WRITE LEARNING OBJECTIVES

The first component in the design phase is to write learning objectives based on the gap analysis conducted during the analysis phase. A learning objective is a precise statement of the student’s expected performance (action), the learning environment (condition), and the required specificity (standards) for student performance. While it is unusual to have multiple terminal learning objectives (TLOs) for a lesson, there are often multiple enabling learning objectives (ELOs) in a given lesson plan.

The learning objectives—

- are the contract between the students, instructors, and the school;
- serve as the foundation for instructional design;
- provide the basis for instructional strategy decisions;
- determine content of the instruction;
- establish the conditions for learning; and
- identify the standards for student performance.

Learning Objective Parts

All learning objectives must include an action, condition, standard, and level of learning. Other linkages may need to be described depending on the particular course requirements. For example, CGSC authors must include the Joint Professional Military Education (JPME) linkage to support tracking for joint accreditation.

**ACTION:** An action statement specifies what a student is to be able to do as a result of the educational experience. Authors must only use one action verb in an action statement. The action verb selected must be congruent with the learning level.

**CONDITION:** A condition statement describes the learning environment. It states what will be provided (a scenario, small group), what will be denied (without references, closed-book), and the time constraints, if any. It includes anything that affects student performance, for example, material, equipment, special environmental conditions, references, and the role the student is assuming. (See Step 4)

**STANDARD:** The standards define the action statement and provide the criteria used to measure if and how well the student mastered the task. The standards also help minimize subjectivity in measuring student attainment of the identified skills. (See Step 5)

**LEVEL:** Base the cognitive domain level of learning on Bloom’s six levels of learning. The designation of a specific level indicates the complexity of the learning experience. The desired level of learning dictates the selection of the action verb in the action statement and is reflected in the criteria used to measure satisfactory performance. (See Appendix B)

**JPME:** It is an ILE requirement to show the linkage between the lesson plan learning objective and the Joint Professional Military Education (JPME) objective it supports. (See Appendix C)

**21ST CENTURY SOLDIER COMPETENCIES SUPPORTED (Optional):** In the absence of official guidance regarding how and where 21st Century Soldier Competencies should be
identified, they may be listed here. This may aid future review by quality assurance or accreditation entities in evaluating ALM 2015 compliance. Only the most relevant competencies should be listed—as a guideline, no more than three or four. (See Appendix A)

The following step-by-step process guides you through the process for writing learning objective action, condition, and standard statements. The learning domain, learning level, and JPME learning objectives will be developed in Component 2 of the Design Phase.

How to Write Learning Objectives

**STEP 1:** Review the results of the gap analysis produced in the analysis phase. Eliminate redundancies or add topics based on new guidance.

**STEP 2:** Develop a topic hierarchy. Examine the topic relationships. Ask these questions:

- Are the topic priorities still valid?
- Are the topic relationships still valid?

**STEP 3:** If writing an ELO action statement, begin the sentence with a verb. For example, mission analysis becomes “conduct a mission analysis;” course of action development becomes “develop a course of action.” Placing the action verb at the beginning of the sentence converts a topic into a learning objective action statement. Appendix B contains examples of commonly used action verbs.

- Is the statement clear and concise?
- Does the statement have only one verb? (More than one verb means more than one action.)
- Does the verb clearly describe the achievable outcome?

**STEP 4:** Write the condition statement for each learning objective action statement. Condition statements set parameters. They describe the “condition” under which the task will be taught or measured. The condition statement includes such things as environment (individually, as a member of a group, in a role), resources (given a case study, specific reference material), and constraints (within 30 minutes). For example, “As a student G3, given a tactical scenario, higher headquarter intent, a written requirement, with references, in class.” The following questions will help you develop condition statements:

- Must the student perform the action alone or as part of a group?
- Will the assessment instrument use a pen and paper format?
- Will the assessment instrument be in a “take-home” format?
- Will the students be able to use references?
- Will the students receive new materials, such as a scenario?
- How much time is available?
- Where will the assessment activity occur?

**STEP 5:** Write the standard statement. The standard statement lists the criteria used to measure the accomplishment of the objective. Avoid using action verbs in the standard statement. This is merely restating the action or could actually be introducing new actions. For example, if the action is “explain mission analysis,” the standard would identify those things that indicate a mission analysis had been successfully explained. It may be stated as, “The explanation will address
weather, terrain, geography, enemy forces, be IAW ST XXX-X ....” In addition to defining “explain mission analysis,” the standards establish what must be taught during the generalize new information (GNI) step of the ELM. Ask these questions:

- What does the successful product look like?
- Quantity? How much is enough?
- Quality? To what extent?
- Requirements? What must be included, addressed, or considered?
- What determines successful completion of the action? How much time is allowed?

**COMPONENT 2. DEVELOP THE TAXONOMY OF EDUCATIONAL OBJECTIVES**

Once the desired outcome of your instruction is defined, the lesson author must focus on the domains of the taxonomy of the educational objectives. While there are three, we will concern ourselves only with the cognitive and affective domains. The cognitive domain has 6 learning levels and the affective domain has 5 behaviors. Both, along with the psychomotor, are described in Appendix B.

**How to Determine a Lesson's Learning Level and Desired Behavior**

**STEP 1: The Cognitive Domain.** In most cases, the lesson author will be provided the cognitive domain learning level for the lesson. Normally, the standard of the governing Terminal Learning Objective that applies to the lesson will have a verb that sets the learning level (list for the knowledge level, explain for comprehension, etc.). If this is not so, the lesson author must choose a cognitive domain learning level at or below the learning level of the TLO. Each action verb reflects a level of learning, and each part of the objective must reflect the same level of learning in order for it to be accurate. (Appendix B provides guidance for determining the objective’s learning level.) The following questions will help determine the learning level:

- Do the action, condition, and standard statements support each other?
- Must the students recall facts or generate a new product? (Knowledge or synthesis?)
- Can the students pull the required information from the readings or must they explain in their own words? (Knowledge or comprehension?)
- Must the students compare courses of action or develop a course of action? (Analysis or synthesis?)
- Must the students assess the value of something or make judgments? (Evaluation.)
- Must the students apply rules to a given situation? (Application.)

**STEP 2: The Affective Domain.** The use of the affective domain in lesson authoring is less obvious. Unlike the cognitive domain, the affective domain is not usually identified in the lesson plan; however, it is no less important. The central behavior of the affective domain is “valuing” and should be the focus of all lessons. In simple terms, the lesson must take the student past the subordinate behaviors
of “interest” and “appreciation” and convey why the new content is of value. (See Appendix B for a fuller discussion of the affective domain.)

**STEP 3:** *(ILE Only) Identify linkage between JPME and the learning objective.* Each JPME objective that relates to a learning objective should be identified. *(See Appendix C for the JPME objectives.)*

**STEP 4:** *(Optional) Identify linkage with 21st Century Soldier Competencies.* Only the most relevant competencies should be identified. *(See Appendix A for the 21st Century Soldier Competencies.)*

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**COMPONENT 3. CONDUCT PRELIMINARY CONTENT RESEARCH**

Conduct preliminary research for possible lesson materials when developing the enabling learning objectives.

**How to Conduct Preliminary Research for Possible Course Materials**

**STEP 1:** Select sources. Consult all possible sources to determine which are appropriate. The Combined Arms Research Library (CARL) has research librarians to assist. Some possible sources include:

- **Existing course materials.** *(Relevant existing materials save time, personnel, material, and funding.)*
- **DOD publications and personnel.** *Joint Publications.*
- **Publications and personnel from other federal agencies.**
- **Industry and commercial publications and personnel.**
- **College and university publications and personnel.**
- **Instructors and authors of previous versions of the course.**
- **External and internal evaluation reports.** *Student evaluations of the course.*
- **Libraries.** *Internet sources.*

**STEP 2:** Identify possible course materials and identify lesson learning objective supported. After selecting potential lesson materials, identify the lesson learning objective that the material appears to support. Compare the material to the developed objective. If learning objectives in the source materials match your lesson learning objective, identify the material as a possible for use in achieving that learning objective.

**STEP 3:** Evaluate material. Select your initial course/lesson materials at this time. If using copyrighted materials, you must work with the CARL to obtain permission from the publisher before using these. A user fee may be charged. Determine if the fee is within the school’s budget or if the material provides adequate benefit to the course to support the cost. If the material from which you are taking information is labeled “limited to US student only,” “no foreign,” or “no contractors,” or if the material is unclassified information from a classified source, you must clear its use with the CGSC foreign disclosure office. Clear all material (including unclassified material) through the CGSC foreign disclosure office before providing them to international military students (IMSs) or contractors. Ask these questions:
Does the material match the learning objectives?
Is the content level of the material appropriate for the planned level of instruction?
Is the material accurate and free of error? Is the material current?
Is the material copyrighted?
Does the material address motivational factors? Does the material encourage active learning?
Is the material well organized? Is the material properly sequenced?
Will the material be meaningful to the students? Will the material be appealing to the students?
Is the material at the appropriate level of difficulty and complexity?
Is the reading level appropriate? (See Appendix J.)
Can the available materials be used in part, modified, or combined with other materials to accomplish the desired goal?
Have you cleared materials for international military students (IMSs) or contractors?

COMPONENT 4. DEVELOP AN ASSESSMENT PLAN OUTLINE

“The importance of incorporating valid and reliable assessments in the 2015 learning model cannot be overstated. ... Post learning assessments provide both the supervisor and the learner certainty that learning has occurred to standard” (TP 525-8-2, p. 22). The assessment plan outline provides the framework for developing Paragraph 7 and Appendix A of the lesson plan. Appendix D of this handbook provides additional information regarding development of assessment instruments.

How to Develop an Assessment Plan Outline

STEP 1: Determine what must be measured to confirm achievement of the learning objective. The standards of the learning objectives are the basis for the development of the assessment instruments. Consider options that are appropriate for the learning level. Note: Do not automatically assume that essays must be used to assess higher-order thinking. Properly constructed multiple-choice tests can effectively measure higher levels of learning and critical thinking.

STEP 2: Select an assessment format appropriate for the context and level of learning required by the learning objective. (See Appendix D)

- Will lesson assessment be a separate assessment or incorporated within a comprehensive module or block assessment?
- Will assessment be conducted in class or outside of class?
- Will assessment be distributed via hard copy or online?
- How much time is available for students to complete assessment?
- How much time will be required of instructors to grade assessment?

STEP 3: Outline the assessment plan.
Select question types appropriate for the learning level specified in the learning objective.

Draft questions for each standard of the ELO.

Organize questions by type and align with standards of the ELO.

Estimate the amount of time required for students to complete the assessment.

Estimate the amount of time required for instructors to grade the assessment.

**STEP 4:** Evaluate the assessment plan outline.

- Are question types appropriate for the learning level specified in the learning objective?
- Do draft questions directly correlate with the standards of the ELO?
- Are all standards of the ELO addressed by the questions?
- Is the amount of time required for students to complete the assessment reasonable?
- Is the amount of time required for instructors to grade the assessment reasonable?

---

**COMPONENT 5. DEVELOP AN OUTLINE OF LESSON CONTENT**

The lesson content outline identifies the lesson design flow and provides the sequence of course events that will be further refined in the lesson development process.

**How to Develop an Outline of Lesson Content**

**STEP 1:** Determine what content directly supports the standards of the learning objective. Learning objectives are the outline guides. Put them in the sequence you plan to teach. Pay attention to the learning level.

**STEP 2:** Order content progressively and sequentially. The following guidelines may help rearrange or sequence the content.

- Place easily learned tasks early in the lesson.
- Introduce broad concepts and technical terms early in the lesson. Place the practical application of concepts and principles close to the point of initial development.
- Place prerequisite knowledge and skills in the sequence prior to the points where they combine with subsequent knowledge, skills, and application. Provide practice and review of skills and knowledge that are essential parts of later lessons.
- Introduce a skill concept in the lesson where it is most frequently used.
- Do not overload any lesson with materials that are difficult to learn.
- Provide practice of required skills and review concepts and principles in areas where transfer of identical or related ability is not likely to occur unaided.
- Place complex or cumulative skills late in the sequence.
STEP 3: **Emphasize a Learner-Centric approach.** The following steps may help move toward a Learner-Centric Model. (TP 525-8-2, p. 30)

- *Where possible, emphasize collaborative problem-solving activities. (ALM 2015)*
- *Tailor learning to the individual learner’s experience and competence level. (ALM 2015)*
- *Limit the use of instructor-led slide presentation lectures. (ALM 2015)*
- *Where appropriate, use blended learning approaches. (ALM 2015)*

STEP 4: **Evaluate the lesson content outline.**

- *Are enabling skills sequenced appropriately to effectively support the ELO(s)?*
- *Do lesson skills progress in cognitive levels?*
- *Have you allowed adequate time for each learning objective standard?*
- *Do the topics flow logically?*
- *Do classroom experiences engage learners to think and understand the relevance and context of what they learn? (ALM 2015)*
- *Are appropriate pre-tests/assessments used to identify individual learner’s experience and competence level? (ALM 2015)*
- *Does blended learning incorporate virtual and constructive simulations, gaming technology, or other technology-delivered instruction? (ALM 2015)*

<table>
<thead>
<tr>
<th>COMPONENT 6. UPDATE RESOURCE ANALYSIS</th>
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<tbody>
<tr>
<td>Resource needs may change throughout the AIS process. Review your resource estimate and make any necessary changes based on the design phase.</td>
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<table>
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<tr>
<th>COMPONENT 7. UPDATE MILESTONE PLAN</th>
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<tbody>
<tr>
<td>Review and update the milestone plan. This is a critical step because the milestone plan guides the course development process.</td>
</tr>
</tbody>
</table>
PHASE II – DESIGN WORKSHEET

1. WRITE LEARNING OBJECTIVES
   a. Based on gap analysis.
      (1) Topics support course goals or lesson scope. ________ ________
      (2) Redundancies are eliminated. ________ ________
   b. Includes a topic hierarchy.
      (1) Topic priorities are valid. ________ ________
      (2) Topic relationships are still valid. ________ ________
   c. Topic changed into a learning objective.
      (1) ACTION statement.
         (a) Is statement clear and concise? ________ ________
         (b) Contains only one action verb? ________ ________
         (c) Action verb clearly describes desired outcome? ________ ________
      (2) Contains a CONDITION statement.
         (a) Environment. ________ ________
         (b) Resources. ________ ________
         (c) Constraints. ________ ________
      (3) Contains the STANDARDS statement.
         (a) Sets the criteria for measuring the accomplishment of the objective. ________ ________
         (b) Does not introduce a new task (does not contain an action verb). ________ ________

2. DEVELOP THE TAXONOMY OF EDUCATIONAL OBJECTIVES
   a. Identifies the cognitive domain learning level.
      (1) Is congruent with the Action Statement. ________ ________
      (2) Is congruent with the Standards Statement. ________ ________
   b. Supports affective domain behaviors consistent with the cognitive domain learning level. ________ ________
   c. Identifies JPME objective linkages (ILE only). ________ ________
   d. Identifies relevant 21st Century Soldier Competencies (Optional). ________ ________
3. **CONDUCT PRELIMINARY RESEARCH FOR COURSE MATERIALS**
   a. Identifies sources of course material.
   b. Identifies possible course materials and supported learning objectives.
   c. Evaluates course materials for validity.
      (1) Content.
      (2) Copyright.
      (3) Cleared for classified status.

4. **DEVELOP AN OUTLINE OF ASSESSMENT PLAN**
   a. Determine what must be measured to confirm achievement of the learning objective.
   b. Select an assessment format appropriate for the context and level of learning required by the learning objective.
   c. Outline the Assessment Plan.
      (1) Select question types appropriate for the learning level specified in the learning objective.
      (2) Draft questions for each standard of the ELO.
      (3) Organize questions by type and align with standards of the ELO.
      (4) Estimate the amount of time required for students to complete the assessment.
      (5) Estimate the amount of time required for instructors to grade the assessment.
   d. Evaluate the Assessment Plan Outline.
      (1) Select question types appropriate for the learning level specified in the learning objective.
      (2) Draft questions for each standard of the ELO.
      (3) Organize questions by type and align with standards of the ELO.
      (4) Estimate the amount of time required for students to complete the assessment.
      (5) Estimate the amount of time required for instructors to grade the assessment.

5. **DEVELOP AN OUTLINE OF LESSON CONTENT**
   a. Identifies content that directly supports the standards of the learning objective.
b. Content is progressively and sequentially ordered.

c. Emphasize a learner-centric approach.

1. Where possible, emphasize collaborative problem-solving activities. (ALM 2015)

2. Tailor learning to the individual learner's experience and competence level. (ALM 2015)

3. Limit the use of instructor-led slide presentation lectures. (ALM 2015)

4. Where appropriate, use blended learning approaches. (ALM 2015)

d. Evaluates the lesson outline.

1. Enabling skills are sequenced to support ELO(s).

2. Lesson skills progress through cognitive levels.

3. Sufficient time is available for each learning objective standard.

4. Topics flow logically.

5. Classroom experiences engage learners to think and understand the relevance and context of what they learn. (ALM 2015)

6. Appropriate pre-tests/assessments are used to identify individual learner's experience and competence level. (ALM 2015)

7. Blended learning incorporates virtual and constructive simulations, gaming technology, or other technology-delivered instruction. (ALM 2015)

6. UPDATED RESOURCE ANALYSIS

7. UPDATED MILESTONE PLAN
Chapter 3

PHASE III. DEVELOPMENT

INTRODUCTION

Having completed the Design Phase, the lesson author, equipped with an ELO, standards, and lesson content outline, must now consider how to convert these products into an actual lesson plan. This chapter offers lesson plan formatting and ELM development as a means to accomplish this task. The four components of this phase are depicted below:

COMPONENTS OF THE DEVELOPMENT PHASE

<table>
<thead>
<tr>
<th>COMPONENT 1.</th>
<th>COMPONENT 2.</th>
<th>COMPONENT 3.</th>
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</thead>
<tbody>
<tr>
<td>Develop Lesson Plan and Advance Sheet</td>
<td>Develop the Assessment Plan</td>
<td>Develop “Conduct of the Lesson”</td>
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</table>

<table>
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<tr>
<th>COMPONENT 4.</th>
<th>COMPONENT 5.</th>
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</thead>
<tbody>
<tr>
<td>Update Resource Analysis</td>
<td>Update Milestone Plan</td>
</tr>
</tbody>
</table>

- **Develop Lesson Plan and Advance Sheet.** Identify the lesson goals and how the lesson supports the Block Terminal Learning Objective.
- **Develop the Assessment Plan.** Identify how student behaviors and abilities will be measured to ensure students have achieved the standards prescribed by the ELO.
- **Develop “Conduct of the Lesson.”** Identify the behaviors and abilities students must master to meet the educational outcome described by the ELO action statement or assigned topic for an elective.
- **Update Resource Analysis.** Continue the process of resource analysis begun in the analysis phase.
- **Update Milestone Plan.** Revise the milestone plan based on accomplishments in the design phase.

**COMPONENT 1. DEVELOP A LESSON PLAN AND ADVANCE SHEET**

How to Develop a Lesson Plan

The lesson plan is the critical component of the course development process. The lesson plan organizes what the lesson presents as well as when and how to present it. It is the author’s way of communicating lesson intent to the instructors. The lesson plan tells the instructor how to implement the lesson; it is the most critical document for instructors.

Institutional guidance will normally identify specific components that each lesson plan must contain. Most importantly, the lesson plan format should provide instructors a clear and logical flow that easily facilitates teaching and learning. Figure 3 shows the basic Army University lesson plan outline. A more detailed sample lesson plan can be found at Appendix K.
**THE ARMY UNIVERSITY**
**COURSE NUMBER – COURSE TITLE**
**LESSON NUMBER – LESSON TITLE**

| BLOCK AUTHOR: |
| LESSON AUTHOR: |
| DATE PREPARED: |
| 1. SCOPE: (Lesson Scope, Author's Intent, and Linkages) |
| 2. LEARNING OBJECTIVE(S): Action, Condition, Standards, Learning Level, and ILE JPME Objectives) |
| 3. ASSIGNED READINGS: |
| 4. INSTRUCTOR ADDITIONAL READINGS: |
| 5. CLASSROOM AIDS REQUIRED: |
| 6. CONDUCT OF LESSON: |
| a. Concrete Experience |
| b. Publish and Process |
| c. Generalize New Information |
| d. Develop |
| e. Apply |
| 7. ASSESSMENT: |

**Figure 3. The Army University Lesson Plan Outline**

**STEP 1:** Review your institution's required lesson plan components using the above example as a guide. Ensure you cover all components in your lesson plan.

**STEP 2:** Develop your lesson plan following additional guidance from your school or academic department.

**STEP 3:** Ask another instructor/author to review your lesson plan.

**STEP 4:** Finalize your lesson plan framework using the inputs you have obtained.

**How to Develop a Lesson Advance Sheet**

The lesson advance sheet, which derives from the lesson plan, provides the student with key information about the lesson scope, learning objectives, and study requirements.

There are two types of advance sheets—block advance sheets and lesson advance sheets. As with lesson plans, the institution provides guidance for including specific components in the advance sheets. Your school or academic department may have additional requirements. Figure 4 shows The Army University Advance Sheet outline while Appendix L contains detailed sample advance sheets.
Figure 4. The Army University Advance Sheet Outline

To develop advance sheets, you should complete the following steps:

**STEP 1:** Identify your institution’s advance sheet component requirements. Ensure you include all of the requirements in your advance sheet.

**STEP 2:** Develop a lesson advance sheet following additional guidance and your school or academic department.

**STEP 3:** Ask another instructor or author to review your advance sheet.

**STEP 4:** Finalize your material using input you obtained.

**COMPONENT 2. DEVELOP THE ASSESSMENT PLAN**

Although last in the implementation of the lesson plan, the *assessment* is the start point for lesson development. When the lesson author has received or developed the ELO standards, cognitive learning level, and the lesson plan framework, he or she can begin writing Paragraph 7 and Appendix A of the lesson plan that describes how verification of learning will be accomplished. In developing the assessment plan, the lesson author must consider the domain and learning level that accompanies the ELO. The cognitive domain learning level is assigned in the ELO and illustrated by the verb used in the ELO action statement. Remember from the Chapter 2 discussion on Bloom’s Taxonomy that the learning level serves as the controlling mechanism for the entire lesson. If the assigned learning level is “analysis,” then the *assessment* must measure at the “analysis” level.

It is recommended that the Assessment Plan be developed early in the process in order to focus the development of other parts of the lesson plan. However, as the assessment instrument will undoubtedly involve ongoing revision to maintain alignment with the course content, this component will often be completed concurrently—not sequentially—with other components of
As “checks on learning,” both the assessment and the apply step serve as a means of translating the standards of the ELO into something that is measurable. The difference is the purpose underlying the measurement. Specifically, the apply can be viewed as a check on the instructor’s success or effectiveness in teaching as well as confirmation for the students that they have learned what they should have learned. Thus, the apply is a reflective view of the learning process for both the instructor and the student. The apply is typically formative in nature. On the other hand, the assessment is more of an observation and examination of the learning process by the institution to ensure the learning has met the established standards. Typically, this is a summative assessment that results in the assignment of a grade. Table 1 compares some general characteristics of the two “checks on learning.”

Table 1. Comparison of General Characteristics of Apply and Assessment.

<table>
<thead>
<tr>
<th>Apply</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reflective</td>
<td>Observational</td>
</tr>
<tr>
<td>Formative</td>
<td>Summative</td>
</tr>
<tr>
<td>Ungraded</td>
<td>Graded</td>
</tr>
<tr>
<td>Immediate</td>
<td>Delayed</td>
</tr>
<tr>
<td>Qualitative</td>
<td>Quantitative</td>
</tr>
<tr>
<td>Informal</td>
<td>Formal</td>
</tr>
<tr>
<td>Flexible</td>
<td>Rigid</td>
</tr>
<tr>
<td>Subjective</td>
<td>Objective</td>
</tr>
<tr>
<td>Sensing</td>
<td>Measuring</td>
</tr>
</tbody>
</table>

| Described in Paragraph 6 of the lesson plan. (Conduct of the Lesson) | Described in Paragraph 7 and/or Appendix A of the lesson plan (Assessment Plan) |
| Results in local adjustments by individual instructors for their own students and classrooms | Results in global revisions by curriculum developers or program managers for all future classes |

Note: These should not be viewed as polar opposites; in fact, there may be significant similarity and overlap between the apply and the assessment. This comparison is presented only to show the general relationship between the two elements. That is, an apply tends to be more reflective and informal than an assessment.

STEP 1: Determine the context for the assessment.

- Will lesson assessment be a separate assessment or incorporated within a comprehensive module or block assessment?
- Will assessment be conducted in class or outside of class?
- Will assessment be distributed via hard copy or online?
- How much time is available for students to complete assessment?
- How much time will be required of instructors to grade assessment?
STEP 2: Plan the assessment instrument. (See Appendix D)

- Establish reliability and validity
- Identify content areas to be tested
- Determine number of assessment items
- Identify opportunities and challenges of delivery methods
- Determine item format

STEP 3: Create the assessment items. (See Appendix D)

- Write assessment items
- Align item cognitive level with that of standard being assessed
- Avoid bias and stereotyping
- Provide rationales for assessment items
- Provide justification for item keys

STEP 4: Create the assessment rubric.

A rubric is a scoring tool that clarifies the specific expectations for an assignment and provides a detailed description of what constitutes acceptable or unacceptable levels of performance for each of those parts. A rubric answers these questions:

- By what criteria will the work be judged?
- What is the difference between good work and weaker work?
- How can we make sure our scores are valid and reliable?
- How can both students and faculty members focus their preparation on excellence?

Figure 5 depicts the basic structure of a rubric. Sample rubrics are shown in Appendix F. To create the assessment rubric, develop the following components:

- Write the Task Description: a clear, detailed, and unambiguous description of the assignment/activity that the students need to accomplish.
- Define Assessment Criteria: What performance conditions must be met for the performance to be considered successful?
- Define Performance Element/Scale: What levels or points describe the range of possible performances (high to low)?
- Describe Standards: How well must the task be performed to achieve the performance criteria?
## Basic Rubric

<table>
<thead>
<tr>
<th>Task Description</th>
<th>Scale Level 1</th>
<th>Scale Level 2</th>
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</table>

**Figure 5. Basic Rubric**

**STEP 5:** Create the assessment form.
- Develop assessment directions
- Write assessment administrator directions
- Allocate sufficient time for the assessment
- Assemble the assessment instrument
- Set grading (passing) standards

**STEP 6:** Pilot the assessment instrument.
- Ensure security of assessment instrument
- Establish test-retest policies
- Control item exposure
- Maintain integrity and ethics

**STEP 7:** Evaluate the assessment instrument. Use item-level data to improve item quality
- Use test-level data to improve assessment instrument quality
- Establish reliability and validity of the assessment instrument
- Document the assessment design and development process
- Make necessary changes for implementation

COMPONENT 3. DEVELOP THE “CONDUCT OF THE LESSON”

When the lesson author has drafted the assessment plan and specified assessment instruments to be used, he or she can begin developing the “Conduct of the Lesson” described in Paragraph 6 of the lesson plan. As shown in Figure 6, the sequence used in writing the lesson is different than the ELM sequence used in teaching the lesson.

**Figure 6. Sequence for Writing a Lesson**

**STEP 1:** Develop the apply step of the ELM.

Similar to the development of the Assessment Plan described in Component 2, the apply is the start point for development of the conduct of the lesson. As with the assessment, the apply step of the ELM forces the author to translate the ELO standards into something that is measureable. However, unlike the assessment, the apply step belongs to the instructor, not the institution. This step is not intended to definitively prove that students have achieved the standards of the learning objective; more precisely, it is intended to provide a sense of their achievement of the learning objective. It provides some assurance for the instructor and students that the students will be able to succeed on the assessment that will follow.
Note that the apply may be as involved or as simple as necessary. It could be a practical exercise that permits a comprehensive instructor review of all standards of the learning objective, or it could be a few review questions that permit the students to demonstrate their knowledge. Examples of effective, simple tools include Muddiest Point, One-sentence Summary, Learning Audit, and other classroom assessment techniques that enable the instructor to discern whether he or she has adequately and effectively enabled student learning of the material and at the appropriate level.

As with assessment, the lesson author must again consider the domain and learning level that accompanies the ELO in order to develop an appropriate apply. And, although the apply may not yield a precise measurement of the students’ learning, it should still be a reasonable indicator of the attainment of the assigned learning level.

**STEP 2:** Develop the generalize new information step of the ELM.

If content mastery is measured in the assessment, and indicated in the apply step, then that content must be taught in the “GNI” step of the ELM. In this step, the lesson author is concerned with not only the content but also the methodology. The search for content began in the Analysis Phase and was further codified in the third step of the Design Phase. The task links to the apply because content must be taught before performance can be measured.

The other component of GNI is teaching methodology—how you present the content to the student. It includes such techniques as lecture, discussion, case study, and other approaches described in Appendix H. The task for the lesson author is to decide which is most appropriate. While the learning domain and level offer clues as to which methodology is more appropriate, student (cognitive) location also deserves consideration. If a lesson is at knowledge level, the lowest learning level of the cognitive domain, and the teaching methodology is lecture, the assumption is that the student has very little, if any, experience or knowledge of the content, which is seldom the case. As stated earlier, combinations of methods are appropriate and are dependent on student knowledge and experience. (See Appendix H)

**STEP 3:** Develop the concrete experience step of the ELM.

The concrete experience, or CE, serves as a trigger of past experience and knowledge, a focusing mechanism for the lesson that follows, and support for the teaching of new content. The CE’s role as a trigger is essential as it forces the students to connect the topic at hand with their understanding of it. This understanding is the result of experience, previous knowledge, and reflection.

Additionally, the CE brings the topic into focus for the entire group. More importantly, the CE is the first opportunity to appeal to the student’s affective domain behavior of “valuing” or higher, which is essential if the lesson content is to be internalized or learned.

Finally, the CE supports the teaching of the new content by providing a common “experience” that connects to the new content of the GNI. If the lesson is on decision making, then a CE of a poor decision might illuminate proper decision making.
The CE that is capable of all this can be a single word, such as “torture,” a short vignette, or short video clip. For the lesson author, the CE marks not only the beginning of the lesson, but also the start of the “marketing campaign” to sell the new content to the student. If done properly, the CE can create a situation where the student “pulls” the content from the teacher instead of having the teacher “push” the content to the student.

**STEP 4:** Develop the publish and process step of the ELM.

The first component of the P&P, publish, solicits the student’s reaction to the CE, typically with questions like, “what did you see?” or “what’s your reaction?” In publishing their reaction to the CE, students take the first step in their learning by saying something that reflects both their experience and knowledge of the topic at hand. The desired situation, and normally occurring, is a “publish” that produces a wide variety of student reactions, which is the foundation for the “process” component of the P&P. The “process” may very well be the most important aspect of the entire ELM process. It is here that the students begin a reconciliation of where they are and, if successful, where they will be at lesson end. Not so obvious, but perhaps more important, is that this reconciliation has the potential to reveal student biases and other preconceptions that may affect the learning.

**STEP 5:** Develop the develop step of the ELM.

This seems to be the most confusing ELM step for instructors, and perhaps students as well. A better word than develop might be “value.” Albeit a bit late, this step of the ELM serves to ensure that the student sees the relevance of the GNI just presented. Typical questions include, “how might you use this in the future?” or “how else could you use this?” Given that instructors can normally detect student interest long before the develop, use this step as an opportunity to reinforce the relevance of the lesson content.

### COMPONENT 4. UPDATE RESOURCE ANALYSIS

Identify resource needs. You may need to make methodology and media changes if required resources are not available to support the course as designed. If changes are necessary, return to the design phase.

### COMPONENT 5. UPDATE MILESTONE PLAN

Review and update the milestone plan developed during the analysis phase.
PHASE III – DEVELOPMENT WORKSHEET

1. DEVELOP LESSON PLAN AND ADVANCE SHEET
   a. Develop Lesson Plan.
      (1) Required lesson plan components are covered in lesson plan.  
      (2) Lesson plan incorporates additional guidance from school academic department as appropriate.  
      (3) Reviewed by another instructor/author.  
      (4) Lesson plan framework has been finalized using received inputs.
   b. Develop Advance Sheet.
      (1) Required advance sheet components are covered in advance sheet.
      (2) Advance sheet incorporates additional guidance from school academic department as appropriate.
      (3) Reviewed by another instructor/author.
      (4) Advance sheet material has been finalized using received inputs.

2. DEVELOP THE ASSESSMENT PLAN
   a. Determine the context for the assessment.
   b. Plan the assessment instrument.
   c. Create the assessment items.
      (1) Write assessment items.
      (2) Align item cognitive level with that of standard being assessed.
      (3) Avoid bias and stereotyping.
      (4) Provide rationales for assessment items.
      (5) Provide justification for item keys.
   d. Create the assessment rubric.
   e. Create the assessment form.
   f. Pilot the assessment instrument.
   g. Evaluate the assessment instrument.
3. DEVELOP THE “CONDUCT OF THE LESSON”
   a. Apply step effectively translates the ELO standards into something that is measurable.
   b. Generalize new information step
      (1) Includes what must be taught as defined by the apply step.
      (2) Incorporates appropriate methodology.
   c. Concrete experience step.
      (1) CE serves as a trigger of past experience and knowledge.
      (2) Appeals to the student’s affective domain behavior of “valuing” or higher.
      (3) Provides a common “experience” that connects to the new content of the GNI.
   d. Publish and process step.
      (1) Publish allows a wide variety of student reactions.
      (2) Process enables student reconciliation of where they are and where they will be at the end of the lesson. Allows for student recognition of bias and other preconceptions.
   e. Develop step confirms that students see the relevance of the GNI.

4. UPDATE RESOURCE ANALYSIS
   a. Identify the resource needs.
   b. Are resources used wisely?
   c. Is the media selected appropriate for the materials?
   d. If changes are necessary, return to design phase.

5. UPDATE MILESTONE PLAN
CHAPTER 4

PHASE IV. IMPLEMENTATION

INTRODUCTION

This phase has two distinct components as shown below. Component 1 ensures instructors understand the course vision, content, delivery methodology, and are ready to teach. This component also includes ensuring the materials are available and everything is ready for the course. Component 2 of the implementation phase is the actual conduct of the course.

COMPONENTS OF THE IMPLEMENTATION PHASE.

| COMPONENT 1. Conduct Final Preparations for Implementation |
| COMPONENT 2. Implement the Course or Lesson |

- **Conduct Final Preparations for Implementation.** Ensure the course has included plans for the instructor train-up and considered the nonresident learning environment.

- **Implement the Course or Lesson.** Conduct instruction, student assessment and feedback.

COMPONENT 1. FINAL PREPARATIONS FOR IMPLEMENTATION

Make final checks before teaching the lesson. Preparation is essential for successful instruction. The type of instruction determines how you prepare for the lesson. Ensure the course has included plans for the instructor train-up and that train-up requirements for the nonresident learning environment have been adequately addressed. Some of the last-minute preparation steps are discussed below:

**How to Prepare for Course/Lesson Implementation.**

**STEP 1:** Make final coordination.

**Equipment**

- Have you identified equipment needed to support the course needs?
- Is the equipment available in adequate numbers and in operational condition?

**Facilities**

- Have you ensured the appropriate facilities are available and have been reserved?
- Do you need to request modifications to existing facilities?

**Personnel (for course authors)**

- Do you have enough instructors available to facilitate the course?
- Have you scheduled the resident course on the School Calendar?
- Have you coordinated with the Directorate of Distance Education (DDE)?
Have you scheduled adequate time for instructor train-up?

If the course is an elective, have you ensured the students have been enrolled in the course?

Ensure materials and supplies are available in adequate quantities to support instruction.

**STEP 2: Conduct author-instructor training session.** Instructors learn how to teach a lesson during instructor train-up (FDP-2 Lesson Implementation Workshops). Each CGSC school conducts instructor train-up sessions prior to implementing a course. The train-up can take many forms; however, the closer you can fashion the training session to the actual instructional situation, the more beneficial it will be to the instructors. At a minimum, each lesson should be reviewed with the instructors. Cover the critical points of the course. Explain how the instructors will conduct the course, and how they will assess student performance. If possible, require instructors to interact as students and to complete all student requirements (at a minimum, have them participate in exercises).

*What plans have you made for the nonresident instructor train-up? Video Teletraining? Detailed written instructions? Recorded train-up sessions made available, etc.?*

*Have the instructors received the materials in sufficient time to review the lesson prior to attending the train-up session?*

**STEP 3: Conduct “in-progress” reviews (IPRs) with instructors.** When schedules and time permit, it is extremely helpful to conduct IPRs of each lesson after it has been taught. Both experienced and new instructors should participate.

**COMPONENT 2. IMPLEMENTATION**

If adequate preparations throughout the development process and last-minute check of each phase have been made, there should be few problems encountered during implementation. During implementation, the instructor should focus on conducting effective and efficient instruction. Ongoing activities described below help ensure course quality.

**How to Implement the Course/Lesson**

**STEP 1: Conduct instruction.** No matter what has been done to this point, the lesson can fail if it is not properly conducted. The instruction should—

- follow the course/lesson plan,
- be conducted in a professional manner and environment,
- be conducted by qualified instructors, and
- be conducted using the appropriate method.
**STEP 2:** Assess student accomplishments of learning objectives. All of the following should be used:
- Assessment instruments
- Instructor feedback
- Daily instructor record

**STEP 3:** Review student assessment results and instructor feedback information. How well did the students achieve the learning objectives? How many As, Bs, and Cs, were assigned? This information transitions you into an evaluation cycle. Analyze the information to improve the course when it is revised.
## PHASE IV – IMPLEMENTATION
### WORKSHEET

### 1. FINAL PREPARATION FOR COURSE IMPLEMENTATION.

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<td>(1) Equipment (quantity, condition, support).</td>
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<td>(2) Facilities (adequate and reserved).</td>
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<td>(3) Personnel schedule.</td>
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<td>b. Conduct author-instructor training session. (Instructor Train-up)</td>
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<td>(1) Trains to actual instructional situation.</td>
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<td>(2) Reviews each lesson and its critical points.</td>
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<td>(3) Includes lesson/course methodology.</td>
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<td>(4) Includes student assessment techniques.</td>
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<td>(5) All student requirements are completed by instructors.</td>
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<td>(6) Both new and experienced instructors participate.</td>
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<tr>
<td>c. Conduct in-progress reviews (IPRs) with instructors.</td>
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<tr>
<td>(1) Both new and experienced instructors participate.</td>
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<td>(2) Assess accomplishment of learning objectives.</td>
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<td>(3) Note areas within curriculum that the students may find difficult.</td>
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### 2. IMPLEMENTATION

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<tr>
<td>(2) Conduct in professional manner and environment.</td>
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<td>(3) Conduct by qualified instructors.</td>
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<td>(4) Conduct using the appropriate method.</td>
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<td>b. Assess student accomplishments of learning objectives.</td>
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<td>(2) Instructor feedback.</td>
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<td></td>
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<td>(3) Daily instructor record.</td>
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<tr>
<td>c. Review student assessment results and instructor feedback information.</td>
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Chapter 5

PHASE V. EVALUATION

INTRODUCTION

Evaluation in the AIS is a continuous process that consists of data collection and analysis to determine effectiveness and value of a course or program. Do not confuse course evaluation with student assessment (Chapters 3 and 4). Course evaluation consists of both formative and summative evaluation components as shown below. Formative evaluation includes an assessment of the course during course development and implementation. Summative evaluation occurs after course completion. The two types of summative evaluation are internal (inside the schoolhouse) and external (outside the schoolhouse).

Although the Quality Assurance Office is the primary evaluator for course material, the block/lesson authors also have major responsibilities. The block/lesson author should solicit input and feedback from a number of sources including peers, co-workers, objective observers, curriculum advisers and, ideally, a sample target audience during the course development process.

COMPONENTS OF THE EVALUATION PHASE

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<td>Formative Evaluation</td>
<td>Summative Evaluation</td>
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- **Formative Evaluation.** Conduct ongoing review and adjustment of course/lesson design, content and methodologies throughout the development and implementation phases.

- **Summative Evaluation.** Conduct a comprehensive, post-implementation review and adjustment of course/lesson based on assessment instruments and faculty and student feedback.

COMPONENT 1. FORMATIVE EVALUATION

Formative evaluation is ongoing during the entire AIS process. It involves making adjustments during the course/lesson development process. The formative evaluation process enables improvement of the course/lesson before and during implementation. It answers questions such as: Does this methodology accomplish the objective? Do the assessment instruments measure the learning objectives? Can users understand the material?

How to Conduct a Formative Evaluation

**STEP 1:** Review the results of any previously conducted evaluation(s) of the course.

**STEP 2:** Collect data to provide specific feedback about the block/lesson components. The following examples are ways you can collect data:

- Have someone outside your department or school read the learning objectives and tell you what the learning objectives mean to him or her. If the feedback is not as expected, rewrite the learning objectives.
• Have someone outside your department or school read the assessment instrument instructions and assessment items. Have that person tell you specifically what it means to him or her. If the person doesn’t understand what you want, make changes.

• Have someone who is a representative of the target audience complete the assessment instrument and give you specific feedback on the instructions and items. If the person doesn’t tell you what you expect to hear, you need to revise the assessment instrument.

**STEP 3:** Make changes to improve the block/lesson based on feedback in Step 2.

**STEP 4:** Conduct a “pilot” of your block/lesson. Sample your target audience to use as “guinea pigs.” Use instructor train-up sessions to pilot your course/lesson. Although instructors are not truly representative of the target audience, they can provide feedback about a number of things, to include the following:

• Time. *Is there enough time for the block/lesson content, practical exercise, and student assessment instrument?*

• Materials. *Are the materials clear? Do they teach the point you intended?*

• Content. *Is the content accurate?*

• Methodology. *Is the methodology used for instruction and assessment appropriate?*

**STEP 5:** Conduct in-progress reviews during implementation. After implementing each lesson, meet with instructors to see what is working and what is not.

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**COMPONENT 2. SUMMATIVE EVALUATION**

Summative evaluation takes place after implementation. It answers questions such as: Was the course worth the effort? Did the block/lesson accomplish what it set out to do?

**Internal Summative Evaluation**

The college conducts an internal summative evaluation of a course. This internal assessment focuses on how effectively the course did what it was intended to do. It identifies course strengths and weaknesses and solicits feedback from the students. The schools, departments, and the Quality Assurance Office all participate in internal course evaluations. The course author leads this process.

**How to Conduct an Internal Summative Evaluation**

**STEP 1:** Select survey items. The QAO will work with departments and schools to develop in-house surveys. The survey questions will be based on the following course structure: mission, goals, and scope; the TLOs and ELOs; and the assessment criteria and instruments. Although some survey questions are mandatory for all courses, QAO will work with departments and schools within CGSC to identify others questions that will help meet evaluation needs. In choosing survey items, consider these questions:

• *Do you want feedback about particular pieces of the course?*

• *Are you introducing a new technique?*
• Are you determining whether or not to delete a topic or material?
• Are you trying out new material?
• Is there too much homework?
• Is the methodology effective?
• What do you want to know specifically about your course?
• Do you want to know about the quality of the instruction?

STEP 2: Review survey data. The QAO will analyze the survey data and provide summarized results in a written report. When you review the results, look for exceptional ratings (lower or higher than the others); these serve as flags. For example, if 60 percent of the students thought the assessment instrument did not measure the objective, it may not have. Review the assessment instrument and determine if it does what was intended. Did it accurately measure the learning objectives and did it measure them at the appropriate cognitive level? Student comments can also flag other things. Compare ratings with student comments to help clarify the ratings. For example, if students rated the assessment instrument low and student comments indicated that they ran out of time, then the problem may not be the construction of the assessment instrument but its administration. As another example, if 15 students out of 1,200 say the PE was worthless, perhaps it was just one staff group.

STEP 3: Conduct after-action reviews (AARs). There are two types of AARs—informal and formal. The AAR provides information about how well students were able to accomplish the course objectives. It is part of the course evaluation process.

• Informal – Get the instructors together to discuss the course. They can give feedback about what worked and what didn’t work. If possible, conduct this type of AAR immediately after implementation while the instructors have their comments clearly in mind.

• Formal – The institution will also have a formal course review process. One component of this formal process is the end-of-course AAR. Have an AAR for each course.

STEP 4: Analyze all collected data. A comprehensive review of all the data will help you answer questions such as the ones below.

• Did the course meet its objectives?
• Was the course worth the effort and resources?
• Was the course worthwhile to the students?
• Was the course worthwhile to the Army?
• Should the course be deleted?
• How can the course be improved?

External Summative Evaluation

The QAO conducts external evaluations by soliciting input from course graduates, their supervisors, peers, and subordinates. The purpose of an external survey is to determine if, and
how well, the course meets the Army’s needs. Request a copy of the external survey from the QA0; they are not automatically provided to course authors. The feedback, analysis, and recommendations from external evaluations can help you in developing or revising your course.
PHASE V – EVALUATION WORKSHEET

1. FORMATIVE EVALUATION
   a. Reviewed previous courses evaluations. _______ _______
   b. Collected data collected to provide specific feedback about the lesson components. _______ _______
   c. Incorporated changes to lesson based on feedback. _______ _______
   d. Conducted a “pilot” of lesson. _______ _______
   e. Conducted in-progress reviews during implementation. _______ _______

2. SUMMATIVE EVALUATION
   a. Survey items selected. _______ _______
   b. Survey data reviewed. _______ _______
   c. After-action Review (AAR) conducted. _______ _______
   d. All collected data analyzed. _______ _______
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Appendix A

ALM 2015 DEFINITIONS AND CONCEPTS

The purpose of this document is to capture the doctrinal definitions and concepts that will be used in the Work Group 1 efforts. They are extracted from TRADOC Pam 525-8-2, *The U.S. Army Learning Concept for 2015*. While they are intended to be all-inclusive, if any errors occurred in the compilation of this document they are errors of omission, and additions or corrections to this document based on a closer reading of the TRADOC Pamphlet are welcome.

Items with an asterisk (*) are taken verbatim from Section II, *Terms*. All others are derived from the text and may be edited for brevity or clarity. Page numbers are included to facilitate referring back to the source document for greater detail and understanding.

1. **Adaptability** (p. 16). To support the qualities of operational adaptability in the force, the Army learning model must be adaptive on several levels.
   a. The ALM must develop adaptable Soldiers and leaders who have the cognitive, interpersonal, and cultural skills necessary to make sound judgments in complex environments.
   b. The Army must have an adaptive development and delivery system, not bound by brick and mortar, that extends knowledge to Soldiers at the operational edge, is capable of updating learning content rapidly, and is responsive to Operational Army needs.
   c. The ALM must be capable of sustained adaptation that includes a capacity to routinely explore and integrate advanced technologies and learning methods to remain competitive and engage learners.

2. **Adaptive development and delivery infrastructure** (pp. 26-28).
   a. **School model.** The school shifts from a mostly internally focused resident training and education center to one that is more externally focused through worldwide-networked connections to learners.
   b. **Digitized learning content.** The continuous adaptive learning model must be supported by a robust capability to rapidly develop and update engaging technology-delivered instructional modules that will be used in the schoolhouse as part of a blended learning approach, distributed to the force for job-related sustainment learning, and as performance support applications. CoE and PME institutions will become the Army's “factories” for producing digitized learning content. The workforce will form multidisciplinary teams comprised of experts in subject content, educational theory, instructional systems design, and media development.
   c. **Instructor selection and training.** Instructors will be facilitators who ask probing questions as the “guide on the side” in a learner-centric model, rather than dominate the class as the “sage on the stage.” The mix of faculty will include subject matter experts skilled in facilitating adult learners, augmented by military personnel with relevant operational experience. Facilitators will also serve in an adjunct role to technology-delivered content, using a blended learning approach both in the schoolhouse and through distributed means.
   d. **Temporary duty for education (TDE).** A proposed policy change that differentiates the time spent on mandatory learning from unit duty time; a forcing function that demonstrates the Army's commitment to a lifelong learning culture.
   e. **Resourcing model.** Schools must be resourced to support instructor student ratios for both resident and nonresident delivery of blended learning and problem-centered instruction. It
must account for the optimum learning cycle for students supported by learning science that defines the amount of time required to maximize learning outcomes.

3. **Adaptive learning.** A method that endeavors to transform the learner from a passive receptor of information to a collaborator in the educational process.

4. **Augmented reality.** A live direct or indirect view of a physical real world environment whose elements are augmented by virtual computer-generated imagery.

5. **Blended learning.** Combines face-to-face classroom methods with technology delivered instruction that can be delivered either in a resident or nonresident environment to form an integrated instructional approach.

6. **Career span framework** (pp. 23-24).  
   a. Individual career guidelines and options for divergence will be available online to empower Soldiers to assume more responsibility for individual career development. The relationship between learner and schoolhouse ceases to be an episodic event, but is instead a career-long partnership.
   
   b. This partnership extends to the unit supervisor who will possess tools to guide learning experiences tailored to the Soldiers’ experience level and unit performance requirements.

7. **Continuous adaptive learning model** (pp. 16-17). A framework comprised of elements that together create a learner-centric, career-long continuum of learning that is continuously accessible and provides learning at the point of need in the learner’s career. Integral to the model is a supporting infrastructure that includes subject matter experts and facilitators from the Centers of Excellence (CoEs), a digitized learning media production capability, knowledge management structures, and policies and resourcing models that are flexible enough to adapt to shifting operational and learner demands. The infrastructure is critical to enabling the shift from a course-based, throughput-oriented, instructor-led model to one that is centered on the learner. The model presents the learner with challenging content through a balanced mix of live and technology-delivered means, available in both resident and nonresident venues.

   a. **Two major themes.**

      1) Improving the quality, relevance, and effectiveness of face-to-face learning experiences through outcome-oriented instructional strategies that foster thinking, initiative, and provide operationally relevant content.

      2) Extending learning beyond the schoolhouse in a career long continuum of learning through the significantly expanded use of network technologies.

Underpinning both themes are learning technologies and instructional strategies that best fit the learning audience and range of desired outcomes.

   b. **Five elements.**

      1) Learning outcomes: 21st century soldier competencies.

      2) Learner-centric 2015 learning environment.

      3) Career span framework.

      4) Adaptive development and delivery infrastructure.

      5) Sustained adaptation.

8. **Continuous adaptive learning model elements** (pp 17-29).
a. **21st Century Soldier Competencies.**
   1) Character and accountability.
   2) Comprehensive fitness.
   3) Adaptability and initiative.
   4) Lifelong learner (includes digital literacy)
   5) Teamwork and collaboration.
   6) Communication and engagement (oral, written, negotiation).
   7) Critical thinking and problem solving.
   8) Cultural and joint, interagency, intergovernmental, and multinational competence
   9) Tactical and technical competence (full spectrum capable).

b. **Learner-centric 2015 learning environment.** Instructional strategies, expert facilitators, and technologies that support the learner.
   1) Context-based, collaborative, problem-centered instruction.
   2) Blended learning.
   3) Regional learning centers (satellite schools at unit locations).
   4) Adaptive learning, intelligent tutors.
   5) Mobile learning, dL modules.
   6) Assessments, evaluations (rigor and relevance).
   7) Tracking & feedback (Army Career Tracker).
   8) Self-structured learning.
   9) Peer-based learning (digital social networks).
   10) Performance support apps (mobile digital devices)
   11) Soldier created content (wikis, blogs, apps, etc.).
   12) Virtual training environments (e.g., JTCOIC-training brain).
   13) Single portal to digital learning resources.

c. **Career span framework.** Provides general guidelines (ways) to develop 21st century Soldier competencies (ends) across the career span by applying elements of the 2015 learner-centric learning environment (means). The career span framework includes a blend of relatively standardized foundational learning and personalized learning that fit the Soldier’s specific career needs. The goal is to provide the Operating Force with a standardized set of foundational competencies that can be further tailored to suit operational and position needs as determined by the learner and unit commander.

d. **Adaptive development and delivery infrastructure.** Essential to achieving the vision of the continuous adaptive learning model is developing the supporting learning infrastructure that includes building knowledge management enabling capabilities, systems, and networks; workforce skills; facilitator training courses; resourcing models; digitized learning resources; policies and processes; and administrative tools.
e. **Sustained adaptation.** The continuous adaptive learning model is not static, but is responsive to operational changes and evolving trends in learning technologies and methods. It is not sufficient to introduce methods and tools to create a learner-centric, career-long learning model without creating an underlying support structure that is committed to continuous adaptation of the learning system. Processes must be in place to continually assess outcomes in meeting the needs of the force, adjust to operational demands, and incorporate advances in learning science and emerging technologies.

9. **Distributed learning.** Delivery of standardized individual, collective, and self-development training to soldiers and DA civilians, units, and organizations at the right place and time through the use of multiple means and technology; may involve student-instructor interaction in real time (for example, via two-way audio and video television) and non-real time (for example, via computer-based training). May also involve self-paced student instruction without benefit of access to an instructor (for example, correspondence programs).

10. **First steps toward a learner-centric model** (p. 30).
    a. Convert most classroom experiences into collaborative problem-solving events led by facilitators (vs. instructors) who engage learners to think and understand the relevance and context of what they learn.
    b. Tailor learning to the individual learner's experience and competence level based on the result of a pre-test/assessment.
    c. Dramatically reduce or eliminate instructor-led slide presentation lectures and begin using a blended learning approach that incorporates virtual and constructive simulations, gaming technology, or other technology-deliver instructions.

11. **Functional courses.** Courses designed to qualify leaders, Soldiers, and DA civilians for assignment to duty positions that require specific skills and knowledge.

12. **Instructional guidelines applicable across all cohorts and echelons** (p. 25).
    a. Convert classroom experiences into collaborative problem solving events.
    b. Tailor learning to the individual learner's experience and competence based on pretest or assessment.
    c. Reduce or eliminate instructor-led slide presentation lectures; begin using a blended learning approach.
    d. Integrate 21st century Soldier competencies in all learning activity outcomes.
    e. Identify learning content that can be transformed into performance support applications.
    f. Develop technology-delivered instruction incorporating adaptive learning and intelligence tutors to reduce learning time.
    g. Integrate and foster digital literacy skills to enable and encourage a career-long learning mindset.
    h. Use virtual and game-based training to add realism and operational relevance.
    i. Integrate joint, interagency, intergovernmental, multinational, culture, and comprehensive fitness goals into all courses.
    j. Establish a full spectrum frame of mind in all learners.

13. **Key implications** (p. 15).
a. The learning model must seize opportunities to use technology as an enabler to engage and appeal to digital age learners. It must permit the learning system to expand beyond the confines of brick and mortar to deliver learning to Soldiers at the point of need.

b. Technology-enable learning must be balanced with higher quality face-to-face learning experiences that employ learning strategies that foster critical thinking and problem solving skills needed for operational adaptability.

14. **Learning environment factors** (pp. 11-14).

a. **Generational and learner differences.** The 2015 learning environment will include a range of learners whose pre-Army educational experiences, mastery of digital technology, and operational experience will vary considerably. However, generational changes in society have not changed cognitive learning functions. The Army learning model must provide more individually tailored instruction to Soldiers that accounts for prior knowledge and experience through assessments of competencies.

b. **Technology opportunities.** Emerging technologies likely to have the greatest effect on the learning environment include mobile computing, open content, electronic books, augmented reality, gesture-based computing, and visual data analysis. Adaptive learning, intelligent tutoring, virtual and augmented reality simulations, increased automation and artificial intelligence simulation, and massively multiplayer online games (MMOG), among others, will provide Soldiers with opportunities for engaging, relevant learning at any time and place.

c. **Inputs to the Army.** Some educators believe an unintended consequence of compliance with the *No Child Left Behind Act* is a generation of high school graduates who do not possess essential survival skills to succeed in the workforce, such as critical thinking, collaboration, adaptability, effective communication, problem solving, and others. Army leadership doctrine identifies many of the same skills as essential for operational adaptability. The Army will need to take steps to identify baseline skill levels essential for operational adaptability and outcome measures for each cohort and echelon.

d. **Learning science.** Research shows there is no single learning strategy that provides the most effective solution to every learning problem. Adult learning is promoted when the learner's prior knowledge is activated prior to learning new knowledge and when the learner integrates new knowledge into everyday practices. Well-designed learning must incorporate strategies to ensure learning transfers from the learning environment to the operational environment.

e. **Lifelong learning.** Soldiers must become expert, self-motivated learners capable of asking good questions and with digital literacy skills that enable them to find, evaluate, and employ online knowledge in both a learning and operational environment. The Army learning model can facilitate lifelong learning culture by encouraging critical thinking, complex problem solving, and providing tools that allow Soldiers to access relevant performance-related information.

15. **Operational adaptability.** The ability to shape conditions and respond effectively to changing threat and situations with appropriate, flexible, and timely actions.

16. **Operational factors** (pp. 10-11). Described in TRADOC Pam 525-3-0, they have profound implications for the Army’s learning model.

a. **Full-spectrum operations.** Offensive, defensive, and stability or civil support operations. The learning model must provide opportunities to experience full spectrum challenges through a mix of live, virtual, constructive, and gaming environments.
b. **Adaptability.** Leaders’ critical thinking, willingness to accept prudent risk, and ability to make rapid adjustments based on a continuous assessment of the situation; comfortable with ambiguity; adept at framing ill-defined problems and making decisions with less than perfect information. The learning model must develop adaptability at all levels through a foundation of operational competencies and then increase the type and intensity of stressors and ambiguity.

c. **Decentralization.** Lower echelons of command empowered with greater capabilities, capacities, authority, and responsibility. Requires leaders who can think independently and act decisively, morally, and ethically. Current and future operations demand increasing understanding of geopolitical, cultural, language, technical, and tactical knowledge for leaders at all levels.

d. **Mastering fundamentals.** Mastering and sustaining core fundamental competencies better support operational adaptability than attempting to prepare for every possibility. Fundamental competencies must be clearly identified to support executing future full-spectrum operations and time must be allotted to attain proficiency through repetition and time on task. The Army learning model must provide opportunities for the Army to continuously assess and build mastery of fundamental competencies.

e. **Culture and language.** Soldiers and leaders need to learn general cultural skills that may be applied to any environment as well as just-in-time information that is specific to their area of operations. The Army culture and foreign language strategy requires both career development and predeployment training to achieve the culture and foreign language capabilities necessary to conduct full-spectrum operations.

f. **Capitalizing on experience.** The learning model must account for prior knowledge and experience by assessing competencies and tailoring learning to the Soldier’s existing experience level and adjust to take advantage of changes in Soldier and leader experiences over time.

17. **Program of instruction.** A requirements document that covers a course and/or phase. Provides a general description of the course content, the duration of instruction, the methods of instruction, and the delivery techniques; lists resources required to conduct peacetime and mobilization training.

18. **Sustained adaptation** (pp. 28-29). Processes must be in place to continually assess outcomes in meeting the needs of the force, adjust to operational demands, and incorporate advances in learning science and emerging technologies

   a. Performance feedback.

   b. Integration of operational lessons.

   c. Campaign of learning.

   d. Chief learning innovation officer (CLIO).
Appendix B

RELATIONSHIPS BETWEEN LEARNING DOMAINS, LEVELS OF LEARNING, AND LEARNING OBJECTIVES

INTRODUCTION

Objectives are the cornerstones of learning. Objectives are developed for all levels of instruction where measurement of learning is required.

LEARNING DOMAINS

One of the most common ways to categorize types of learning is according to the following learning domains:

*Cognitive Domain:* The cognitive domain refers to intellectual skills. Intellectual skills consist of discrimination, concept, rule-using, and problem-solving capabilities. Educational environments commonly focus on intellectual skills.

*Psychomotor Domain:* The psychomotor domain refers to motor skills.

*Affective Domain:* The affective domain concentrates on emotions, beliefs, attitudes, values, and feelings.

RELATIONSHIP BETWEEN LEARNING DOMAINS AND LEVELS OF LEARNING

Each of the learning domains is broken down into identifiable levels that progress from the lowest level through increasingly more complex levels, and finally to the highest complexity level.

For the cognitive domain (the focus of most topic-based learning), Bloom et al, in *Taxonomy of Educational Objectives, Handbook I: Cognitive Domain*, identified six levels: knowledge, comprehension, application, analysis, synthesis, and evaluation. The progression is from the simple recall or recognition of facts at the lowest level, through increasingly more complex and abstract mental levels, to the highest order that is classified as evaluation.

The affective domain is also divided into levels of learning that progress from receiving at the lowest level to characterizing by value or value complex at the highest level.

RELATIONSHIP BETWEEN LEARNING OBJECTIVE ACTION VERB AND LEVEL OF LEARNING

Certain words tend to imply certain types of behavior. “Name,” for instance, requires the student to recall the name of a person, place, or thing (PPT). “Describe” requires the student to not only know what the PPT is but also go one step higher and give examples of the PPT. “Give examples” requires a higher level of cognition on the part of the student and this elevates the learning level.

Select the appropriate action verb for each objective being taught. The action verb tells what behavior the student is expected to demonstrate. Although action verbs are an indication of the level of learning expected, look at the total behavioral statement (action statement, condition, and standard) in order to accurately determine the learning objective level. Figure A-1 shows the relationship between the Learning Objectives, Learning Domains and Levels of Learning.
The cognitive domain deals with acquiring, recognizing, and manipulating facts; developing the intellectual skills to effectively break down these facts into their components; and recognizing the organization and relationships of the components. These developmental levels are knowledge, comprehension, application, analysis, synthesis, and evaluation.

1. **Knowledge.** The recall/remembering of previously learned materials (facts or theories) in essentially the same form as taught.

   **Example:** The student will list the steps of the Military Decision Making Process (MDMP).

<table>
<thead>
<tr>
<th>Action Verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrange</td>
</tr>
<tr>
<td>List</td>
</tr>
<tr>
<td>Reproduce</td>
</tr>
</tbody>
</table>

2. **Comprehension.** Seeing relationships, concepts, and abstractions beyond the simple remembering of the material.

   **Example:** The student will explain the steps of the MDMP.
3. **Application.** The ability to use the appropriate learned material in new and concrete situations.

   **Example:** Given a situation, the student will produce a decision using the MDMP.

4. **Analysis.** The ability to break down material into its constituent parts and determine how the parts relate to one another and the overall structure and purpose.

   **Example:** The student will examine the MDMP.

5. **Synthesis.** The ability to put parts together to form new patterns or structures, such as a unique set of abstract relations used as a scheme for classifying information.

   **Example:** Using the product of the analysis learning level, other previous learning, and experience, the student will design a new decision making process.
6. **Evaluation.** The ability to judge, using internal standards and external criteria, the value of material for a given purpose. Learning in this area is the highest in the cognitive hierarchy because it involves elements of all the other categories, plus conscious value judgments based on clearly defined criteria.

**Example:** Using the MDMP and other available processes, the student will judge the effectiveness of the new process created in the synthesis learning level.

<table>
<thead>
<tr>
<th>Action Verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appraise</td>
</tr>
<tr>
<td>Assess</td>
</tr>
<tr>
<td>Criticize</td>
</tr>
<tr>
<td>Decide</td>
</tr>
<tr>
<td>Judge</td>
</tr>
<tr>
<td>Justify</td>
</tr>
<tr>
<td>Rate</td>
</tr>
<tr>
<td>Validate</td>
</tr>
</tbody>
</table>

For the lesson author, the cognitive domain serves as a controlling mechanism for the entire lesson. In using the learning levels discussed above, the lesson author not only sets the intellectual depth for the content to be taught but also establishes student assessment of learning requirements as well. The learning level of content taught must match the learning level of the assessment. Another less obvious cognitive domain controlling feature is the matter of time required to teach the class. What is possible at the knowledge level in two hours is quite impossible at the analysis level given a similar time constraint. A final controlling aspect is that the learning level of the lesson also defines success. If the content requires an analysis of MDMP, then all students must be able to accomplish this when their learning is assessed.

**AFFECTIVE DOMAIN**

*(Levels of Learning)*

For the affective domain, Krathwohl, Bloom, and Masia, in their book *Taxonomy of Educational Objectives, Handbook II: Affective Domain* identified five levels: receiving, responding, valuing, organization, and characterization of a value or value complex. The progression among these five levels is from simply being aware through an organized internalization of an attitude or value which becomes the defining characteristics of that person.

1. **Receiving (Attending).** The getting, holding, and directing of the student’s attention, from the simple awareness that a thing exists to selective attention on the part of the learner. Receiving (by the student) has three sublevels: Awareness, willingness to receive, and controlled or selected attention.
Table B-1. Characteristics for Affective Domain, Receiving

<table>
<thead>
<tr>
<th>Sublevel</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Awareness</td>
<td>Observes, with increasing recognition, the differences in....</td>
</tr>
<tr>
<td></td>
<td>Awareness of the attitudes of others....</td>
</tr>
<tr>
<td></td>
<td>Recognizes the nuances of the written or spoken word...</td>
</tr>
<tr>
<td></td>
<td>Recognizes nonverbal behaviors....</td>
</tr>
<tr>
<td>Willingness to receive</td>
<td>Listens to other points of view....</td>
</tr>
<tr>
<td></td>
<td>Attends to the surroundings....</td>
</tr>
<tr>
<td></td>
<td>Accepts differences in cultures....</td>
</tr>
<tr>
<td>Controlled or selected attention</td>
<td>Listens to and remembers....</td>
</tr>
<tr>
<td></td>
<td>Preference for....</td>
</tr>
<tr>
<td></td>
<td>Keeps informed on....</td>
</tr>
</tbody>
</table>

2. **Responding.** The student not only attends to a particular phenomenon, but also reacts to it in some way, such as reading the assignment or reading for enjoyment. The instructional objectives relate to “interests.” The three sublevels of responding are *acquiescence in responding, willingness to respond, and satisfaction in responding.*

Table B-2. Characteristics for Affective Domain, Responding

<table>
<thead>
<tr>
<th>Sublevel</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acquiescence in responding</td>
<td>Willingness to comply....</td>
</tr>
<tr>
<td></td>
<td>Observes the rules....</td>
</tr>
<tr>
<td>Willingness to respond</td>
<td>Voluntarily reads....</td>
</tr>
<tr>
<td></td>
<td>Responds with active interest....</td>
</tr>
<tr>
<td></td>
<td>Participates actively in....</td>
</tr>
<tr>
<td>Satisfaction in responding</td>
<td>Finds pleasure in....</td>
</tr>
<tr>
<td></td>
<td>Discovers many new areas or ways of...</td>
</tr>
</tbody>
</table>

3. **Valuing.** The worth or value a student attached to a particular object, phenomenon, or behavior ranging from acceptance of a value to commitment. Instructional objectives relate to “attitudes” and “appreciation.” The three sublevels of valuing are *acceptance of a value, preference for a value, and commitment or conviction.*
Table B-3. Characteristics for Affective Domain, Valuing

<table>
<thead>
<tr>
<th>Sublevel</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceptance of a value</td>
<td>Feels as a member of a group....</td>
</tr>
<tr>
<td></td>
<td>Continuing desire to develop the ability to....</td>
</tr>
<tr>
<td>Preference for a value</td>
<td>Encourages other to...</td>
</tr>
<tr>
<td></td>
<td>Assumes an active role in....</td>
</tr>
<tr>
<td></td>
<td>Initiates group action for the improvement of....</td>
</tr>
<tr>
<td>Commitment or conviction</td>
<td>Loyalty to....</td>
</tr>
<tr>
<td></td>
<td>Faith in the methods of....</td>
</tr>
<tr>
<td></td>
<td>Devotion to....</td>
</tr>
</tbody>
</table>

4. **Organization.** The bringing together of different values, resolving conflicts between them, and beginning to build an internally consistent value system. Instructional objectives relate to a “philosophy of life.” The two sublevels of organization are *conceptualization of a value* and *organization of a value system.*

Table B-4. Characteristics for Affective Domain, Organization

<table>
<thead>
<tr>
<th>Sublevel</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conceptualization of a value</td>
<td>Attempts to identify the characteristics of....</td>
</tr>
<tr>
<td></td>
<td>Synthesizing the basic assumptions of....</td>
</tr>
<tr>
<td></td>
<td>Symbolic or abstract thought is shown by....</td>
</tr>
<tr>
<td>Organization of a value system</td>
<td>Weighs alternatives between....</td>
</tr>
<tr>
<td></td>
<td>Develops techniques for resolving disparate values....</td>
</tr>
</tbody>
</table>

5. **Characterizing by a Value or Value Complex.** Pervasive, consistent, and predictable behavior (lifestyle) developing from a value system which controls behavior for a significant period of time. Instructional objectives focus on personal, social, and emotional adjustments are in this category. The two sublevels are *generalized set* and *characterization.*

Table B-5. Characteristics for Affective Domain, Characterizing by a Value or Value Complex

<table>
<thead>
<tr>
<th>Sublevel</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalized set</td>
<td>Readiness to revise judgments....</td>
</tr>
<tr>
<td></td>
<td>Willingness to change opinion when facts and conclusions indicate....</td>
</tr>
<tr>
<td>Characterization</td>
<td>Develops a consistent philosophy of....</td>
</tr>
<tr>
<td></td>
<td>Develops behaviors based on ethical principles consistent with....</td>
</tr>
</tbody>
</table>
THE RELATIONSHIP OF THE AFFECTIVE DOMAIN STRUCTURE AND COMMON AFFECTIVE TERMS

The foregoing offers a foundational summary for the use of the affective domain in lesson authoring. Why should the lesson author care about the affective domain? Simply put, an examination of the affective domain may be more important to the lesson author than a similar treatment of the cognitive domain. This is because the affective domain offers the means for the student to internalize the new material. Without this internalization, the new material does not become part of the student. Internalization can only be accomplished through Bloom’s development of a “value complex” to guide the student’s behavior or, similarly, Piaget’s modification of the student’s “organization” through accommodation and/or assimilation of the new material. In the end, internalization is key as it is both a destination and journey of student learning.

As shown in Figure A-2, Krathwohl, Bloom, and Masia add terms that represent student reaction-to-content, or behavior, that a teacher might see in the classroom. The terms that represent student behavior—interest, appreciation, attitude, value, and adjustment—offer the teacher a sense of student location in the internalization process. They are defined by the range of objectives they cover; they move from simple to complex and from concrete to abstract (Krathwohl, 1964). Less obvious is the role of emotions in the continuum; emotions are low at either end of the continuum and peak near the center. The center of the continuum offers the greatest opportunity for emotions to contribute to internalization as represented by terms such as satisfaction, acceptance, preference, and commitment.

### Affective Terms for the Internalization Process

<table>
<thead>
<tr>
<th>1.0 RECEIVING</th>
<th>2.0 RESPONDING</th>
<th>3.0 VALUING</th>
<th>4.0 ORGANIZATION</th>
<th>5.0 CHARACTERIZATION BY A VALUE COMPLEX</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1 AWARENESS</td>
<td>2.1 ACOUSSION IN</td>
<td>3.1 ACCEPTANCE OF A VALUE</td>
<td>4.1 CONCEPTUALIZATION OF A VALUE SYSTEM</td>
<td>5.1 GENERALIZED SET</td>
</tr>
<tr>
<td>1.2 RECEPTIVENESS</td>
<td>2.2 WILLINGNESS TO RESPOND</td>
<td>3.2 PREFERENCE FOR A VALUE</td>
<td>4.2 ORGANIZATION OF A VALUE SYSTEM</td>
<td>5.2 CHARACTERIZATION</td>
</tr>
<tr>
<td>1.3 Willingness to</td>
<td>Satisfactory</td>
<td>Acceptance</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The range of meaning typical of commonly used affective terms measured against the Taxonomy continuum.


**Figure B-2. The Meaning of Affective Terms Measured against Bloom’s Taxonomy Continuum**
The lesson author’s role in the process of internalization is tied to his or her use of the ELM in the lesson plan. Think of the concrete experience and the publish and process as the marketing plan of the lesson plan to be developed. The concrete experience, which must support the generalize new information, primarily acts as a trigger to ignite the student’s past experiences related to the lesson topic. The publish and process then gets these experiences into the open and allows, or in some cases forces, student reconciliation of his or her own perspective with those expressed by other students. If done properly, these first two steps of the ELM will move the student through the “interest” and “appreciation” phases of the internalization process (Figure A-2). With the integration of the content of the generalize new information step of the ELM into the discussion, the student potentially moves into the “attitudes” and “value” phases of the internalization process. The develop step of the ELM serves to strengthen “value” phase and prepares the student for the “adjustment” phase of the internalization process. The apply phase of the ELM serves the teacher as a means to determine if the student is sufficiently prepared to embark on the “adjustment” journey necessary for the internalization that produces true learning.

THE PSYCHOMOTOR DOMAIN

The psychomotor learning domain applies predominately to a training environment and is not normally addressed in topic-based lesson plans for educational institutions. Thus, these lesson plans should focus on the cognitive and affective domains as reflected in the learning objectives and should identify expected cognitive and affective learning levels as appropriate.
Appendix C

EXTRACT OF CJCSI 1800.01D, 15 JULY 2009

ENCLOSURE E JOINT PROFESSIONAL MILITARY EDUCATION

1. **General.** This enclosure provides common educational standards, taxonomy of desired levels of learning achievement, and joint learning objectives for the five levels of PME.

2. **Common Educational Standards.** The following describes educational standards common to all PME schools and colleges that the Chairman considers essential. Each standard is described primarily in qualitative terms, since no particular organizational pattern or application strategy applies in all settings.

   a. **Standard 1 – Develop Joint Awareness, Perspective, and Attitudes.** JPME curricula should prepare graduates to operate in a joint, interagency, intergovernmental, and multinational environment and bring a joint perspective to bear in their tactical, operational, strategic, and critical thinking as well as professional actions. The missions of schools and colleges, as well as their goals, objectives, educational activities, and the mix of students and faculty should reflect joint educational requirements, encourage critical analyses of current and emerging national strategies from a joint perspective, and foster a commitment to joint and interagency cooperation. The leadership, faculty, and students should demonstrate an appropriate commitment to jointness.

   b. **Standard 2 – Employ Predominately Active and Highly Effective Instructional Methods.** Instructional methods should be appropriate to the subject matter and desired level of learning and should employ active student learning whenever feasible. The goals of the educational offerings are rigorous and challenging, requiring students to engage in critical thinking and active interaction.

   c. **Standard 3 – Assess Student Achievement.** Each school/college should aggressively assess its students’ performance. Educational goals and objectives should be clearly stated and students’ performance should be measured against defined standards by appropriate assessment tools to identify whether desired educational outcomes are being achieved.

   d. **Standard 4 – Assess Program Effectiveness.** Schools and colleges should conduct surveys of students, graduates, and their supervisors to determine the educational effectiveness of their academic programs. Schools and colleges should ensure G/FO leadership periodically assess the intended educational outcomes of the JPME accredited programs for currency, relevancy and completeness. Results of these analyses should be used to refine or develop curricula that continue to meet evolving mission requirements in the context of an ever-changing world. Curricula should be the product of a regular, rigorous, and documented review process.

   e. **Standard 5 – Conduct Quality Faculty Recruitment; Selection, Assignment, and Performance Assessment Program.** Faculty should have the academic credentials, teaching skills, and experience in joint and professional matters needed to teach in the schools and colleges. Faculty roles and responsibilities should be clearly documented. Schools and colleges should hold faculty accountable to clearly defined and measurable performance criteria and standards.
f. **Standard 6 – Conduct Faculty Development Programs For Improving Instructional Skills and Increasing Subject Matter Mastery.** Each school and college should have a faculty development program to refine teaching skills, improve instructional methods, maintain currency in subject areas, and encourage further professional development. Policy and resources must support the faculty development program.

g. **Standard 7 – Provide Institutional Resources to Support the Educational Process.** Each institution must have a library or learning resource center, informational resources, financial resources, and physical resources that meet the needs of all users and supports the mission and programs of the institution.

3. **Levels of Learning Achievement.** See Appendix A to Enclosure E.

4. **Learning Outcomes.** Outcome of the joint learning process is a descriptive process to be undertaken by each JPME accredited college or school. Learning outcomes assist curricula development, program assessment, and the student learning process through statements of what is expected that a student will be able to do as a result of the learning activity. JPME graduates should be appropriately prepared for positions of leadership within the capabilities-based joint force.
1. **Overview.** The Service ILCs’ curricula focus is warfighting within the context of operational art.

2. **Mission.** The Service ILCs’ joint mission is to expand student understanding, from a Service component perspective, of joint force employment at the operational and tactical levels of war.

3. **Learning Area 1 – National Military Capabilities, Command Structure, and Strategic Guidance**

   a. Comprehend the capabilities and limitations of U.S. military forces to conduct the full range of military operations in pursuit of national interests.

   b. Comprehend the framework within which joint forces are created, employed, and sustained in support of JFCs and their component commanders.

   c. Comprehend the purpose, roles, functions, and relationships of the President and the Secretary of Defense, National Security Council, Homeland Security Council, Chairman of the Joint Chiefs of Staff, Joint Chiefs of Staff, combatant commanders, JFCs, Service component commanders, and combat support organizations or agencies.

   d. Comprehend joint force command relationships.

   e. Comprehend how the U.S. military is organized to plan, execute, sustain, and train for joint, interagency, intergovernmental, and multinational operations.

   f. Comprehend strategic guidance contained in documents such as the national security strategy, the Quadrennial Defense Review, national military strategy, Guidance for Deployment of the Force, and Guidance for Employment of the Force.

4. **Learning Area 2 – Joint Doctrine and Concepts**

   a. Comprehend current joint doctrine.

   b. Comprehend the factors and emerging concepts influencing joint doctrine.

   c. Apply solutions to operational problems using current joint doctrine.
d. Comprehend the interrelationship between Service doctrine and joint doctrine.

e. Comprehend the fundamentals of traditional and irregular warfare.

5. Learning Area 3 – Joint and Multinational Forces at the Operational Level of War

a. Comprehend the considerations for employing joint and multinational forces at the operational level of war.

b. Comprehend the interrelationships among the strategic, operational, and tactical levels of war.

c. Comprehend how theory and principles of war pertain to the operational level of war across the range of military operations to include direct and indirect approaches.

d. Comprehend the relationships among national objectives, military objectives and conflict termination, as illustrated by previous wars, campaigns, and operations.

e. Comprehend the relationships between all elements of national power and the importance of the whole of government response, multinational cooperation, and building partnership capacity in support of homeland security and defense.

f. Analyze a plan for employment of joint forces at the operational level of war.


a. Comprehend the relationship among national objectives and means available through the framework provided by the national level systems.

b. Comprehend the fundamentals of joint operation planning.

c. Comprehend the mix of joint functions appropriate to an operational planning problem.

d. Comprehend how IO and cyberspace operations are integrated at the operational level.

e. Comprehend the effect of time, coordination, policy changes, and political development on the planning process.

f. Comprehend the roles that factors such as geopolitics, geostrategy, society, region, culture, and religion play in shaping planning and execution of joint force operations across the range of military operations, to include traditional and irregular warfare.

g. Comprehend the role and perspective of the combatant commander and staff in developing various theater policies, strategies, and plans, to include weapons of mass destruction/effects (WMD/E); IO; cyberspace operations; Stability, Security, Transition and Reconstruction (SSTR); intelligence; logistics; and strategic communication.

7. Learning Area 5 – Joint Command and Control

a. Comprehend the C2 options available to joint force commanders.
b. Comprehend the factors – to include mission objectives, forces available, and associated capabilities – that support the selection of a C2 option.

c. Comprehend the opportunities and vulnerabilities created throughout the range of military operations by reliance on networks and information technology in cyberspace.

8. **Learning Area 6 – Joint Operational Leadership**

   a. Comprehend the skills needed to lead a joint, interagency, intergovernmental, multinational task force in accomplishing operational-level missions across the range of military operations, to include traditional and irregular warfare.

   b. Comprehend critical thinking and decision-making skills needed to implement change and sustain innovation.

   c. Comprehend the ethical dimension of operational leadership and the challenges that it may present.
Appendix D

ASSESSMENT INSTRUMENTS

Assessment instruments should effectively measure the standards of the course learning objectives. The determining factor influencing the development of an appropriate assessment instrument is the learning level of the tested objective. For example, if the level is “comprehension,” then an assessment item measuring student understanding is required. An appropriate assessment could be to ask students to describe or to summarize a concept.

DESCRIPTION OF ASSESSMENT INSTRUMENTS

Assessment measures that are designed to determine how well the student achieves a given standard are criterion referenced instruction (CRI) measures. The three main types of CRI assessments are written products, simulations, and performance-based measures. Below are detailed descriptions and guidelines for constructing and using these types of assessments.

WRITTEN ASSESSMENT INSTRUMENTS

General Guidelines for Constructing Written Assessment Instruments

The following are some general guidelines for constructing the most common types of “pen and paper” assessment instruments.

Assessment instruments must be—

- **Valid.** They must measure the objective they are supposed to measure.
- **Reliable.** They must consistently measure the same knowledge or performance.
- **Comprehensive.** They must include enough assessment items or questions to ensure students have mastered all objectives.
- **Objective.** They must be free of opinions and other biases caused by wording, grading, etc.
- **Relevant.** They must directly relate to learning elements, skills, and knowledge of the learning objectives.
- **Differentiating.** They must discern between students who have mastered the training objectives and those students who have not mastered the training objectives.
- **Usable.** The instrument can be produced, administered, and scored at reasonable cost.
- **Focused.** They must assess only essential information, not unimportant details.

Additionally, assessment instruments should emphasize learning rather than a rote response to a question. They should require students to apply knowledge and reason and to organize ideas. Each item should be written to avoid problems related to grammar, phrasing, and format. (Example: Each alternative in a multiple-choice item should be phrased in the same manner so attention is not drawn to one particular response.)
Types of Written Assessment Items

Problem-Situation Items

A problem-situation item provides a realistic problem and asks the student to find a solution. When using the problem-situation, require the student to think reflectively. Problem-situation items may measure the student’s ability to—

- classify data,
- accurately interpret data,
- determine relationships,
- apply scientific principles and laws of logic to new or different situations, and
- test conclusions.

A problem-situation item, when properly constructed, is characterized by the following advantages:

- The item is effective in obtaining evidence of the student’s degree of understanding.
- The item can be written to test and measure the student’s ability to reason, either deductively or inductively.
- The item tests the student’s skill in the application of principles to a new situation. In other words, it can be used to effectively measure the degree of transfer of knowledge.

General Construction Guidelines for Problem-Situation Items. There are two major parts to every problem-situation assessment item: (1) the situation that sets the stage and (2) the problem that the students must solve, given the situation. The situation must be carefully designed to provide the student with the basis to find a solution. Add charts, maps, sketches, or diagrams to the situation to increase clarity or realism. In developing problem-situation items, consider the following points:

- Make both the situation and the problem realistic. When possible, use an actual situation.
- Be specific in both the problem and the situation, to minimize confusion regarding details or student requirements.
- Limit the time allotted to respond to the problem.
- Require the use of the same principles and ideas previously presented to the student.
- The problem should enable assessment of the student’s achievement of the standards identified within the learning objective.
- Prepare a complete scoring key.

Examples of Problem-Situation Assessment Items. Three categories of problem-situation items are application of general principles to a specific situation, memo outline, and interpretation of numerical data.

Application of general principles to a specific situation. There are two formats for the application of general principles to a specific situation category of problem-situation items—essay essay and alternate formats. When using essay items, a major problem may arise because equally competent instructors score the responses differently. This difficulty might be overcome by—
• limiting the responses required,
• preparing a complete scoring key, or
• putting the problem in multiple-choice rather than essay form.

Specific Situation Example

Captain Jones is a management analyst at Sky High. You are the comptroller. Five months ago, the maintenance squadron commander requested a study of his maintenance control system. You gave Captain Jones the assignment. He is young and aggressive and, although he had no maintenance experience, you felt he could handle the job. A recent check on his progress showed the following developments.

He had not completed any studies but reported varying degrees of progress on seven different studies with “three more in the planning stages.” Of the seven, two were held up because of a deadlock between Captain Jones and the officers in charge of the areas who stated that Captain Jones did not understand maintenance problems and that his recommendations were faulty. The other five studies were apparently stagnant.

Captain Jones had established requirements for nine temporary reports from maintenance activities to provide him with data in various maintenance areas. The requests for these reports had been initiated at different times.

Response Options for Specific Situation Example

a. Essay format. (Remember that scoring may be a problem for this type of problem unless the responses are clearly limited. A scoring key should be prepared or another format used.)

In what respect did Captain Jones err most seriously?
In the present situation, how can the two studies that have been held up because of nonconcurrence be best completed?

b. Alternate format. The item can, for example, be put in the multiple-choice form:

In light of the situation just described, where in the process of analysis did Captain Jones show the greatest weakness?

A. planning the analysis
B. establishing reports
C. interpreting deviations from standards
D. selling his final product

In the situation just described, what action should be taken concerning studies that were held up by nonconcurrence?

A. Captain Jones should be transferred to another area in the comptroller organization where he will not have direct contact with other offices.
B. The analysis should be withdrawn and the officers permitted to “cool off” before another analysis is requested.
C. The officers concerned (the maintenance officer and the comptroller) should sit down and discuss their differences of opinion.
D. If the reports show a factual soundness, they should be forwarded to the Deputy of Material without concurrence.

Memo outline. The memo format for the problem-situation item represents an attempt to present both a realistic situation and to guide the student’s responses. The following is an example of this assessment technique.

MEMO PAGE
Fred L. Jones, Brigadier General
1 March 201X

TO: Comptroller

Joe,

Recently, I spent time at Fort Leavenworth with the post commander. Among other things, he showed me a copy of his post financial plan, which he said his comptroller had developed.

What is it?
How is it prepared?
How is it used?
What records are needed to prepare such a plan?
What steps and methods are used in developing the plan?
What benefit could be derived from the plan?
How could we go about initiating one here?

Interpretation of numerical data. Interpretation of numerical data provides an opportunity for the author to evaluate the student’s problem-solving abilities in a realistic situation. The following example illustrates that job related information adds realism to both the situation and the problem.

Example: You are the Director of Material of an Aviation unit. You are to estimate the supplies needed for operation within the next 30 days. The following planning data is available:

- Assigned aircraft: 45
- Engine hours between overhaul: 1,000
- Sortie rate per month: 68
- Estimated average length of sortie (in hours): 12
Essay Items

Essay items work well when students need to think reflectively or creatively, to organize knowledge in the solution of a problem, and to express their solutions in writing. The essay item encourages a wider range of study and learning than other assessment items. Although some essay items may be rather comprehensive, they do not generally require the student to develop an extended logical or factual argument for more than a few hundred words. However, in some areas, longer essay responses are common. The essay response may embody a number of elements, including comparisons, relationships, explanations, analyses, illustrations, criticisms, summaries, and/or descriptions. The most common objection to the essay item is that it lacks reliability because of its subjective nature. This objection can be largely overcome by proper phrasing of the item and by employing a checklist for scoring. While this can also improve validity, it is usually not possible to administer a highly valid and comprehensive assessment instrument in a short time period. Before an essay item is written, the instructor must know the background and experience of the students and the objectives to be measured.

General Construction Guidelines for Essay Items

- State the item clearly so the student knows exactly what is expected.
- The essay item should ask for comparisons, decisions, solutions, cause-effect relationships, explanations, or summaries.
- When possible, use more essay items and limit the discussion on each.
- Set limits on essay items, such as time or number of words.
- Inform students prior to administering the assessment instrument (or as part of the instructions for the instruments) what weight each item will have on the final score.
- Avoid basing the solution of one problem on the correct solution to another.

Examples of Essay Items

The following are examples of the different types of essay items:

Comparison

Compare the range of operation of jet aircraft and propeller-driven aircraft with regard to fuel.

Compare the effects of the initial blast, shock wave, and heat wave in a nuclear explosion.

Compare the effects of a nuclear detonation with an airplane that breaks the sound barrier.

Explanation of definition

Explain the principles of airfoil lift.

Describe the functions of each block in the radio transmitter.

Define the term “state of alert.”

State the purpose of the Hawk guided missile system.
Decision

Which of the two methods of organization is better in the following situation? Why? (The instructor describes a specific situation).

Causes, effects, or relationships

What is the proper questioning technique? Why is this technique important?

Why do cirrus rather than cumulus clouds form under the following conditions? (The instructor describes a set of atmospheric conditions).

What is the effect if a sealed 1-gallon gasoline can explodes in the following situation (The instructor describes location, population, and other criteria).

Summary

In about 50 words, summarize the functions of management.

In the space allocated below, summarize the purpose of the unit readiness report.

Illustration

Illustrate, in the form of an organizational chart, the staff positions in TRADOC.

Given the following situation, diagram where you would place your units to best halt the enemy attack (The instructor describes the specific situation).

Multiple-Choice Items

Multiple-choice items can be used to measure knowledge learning outcomes at various levels of learning. They are commonly used for measuring knowledge, comprehension, and application learning levels; however, when thoughtfully constructed, they can also accurately assess critical thinking and learning at higher levels, including analysis, synthesis, and evaluation. Additionally, multiple-choice tests often exhibit higher reliability and validity than the more subjective essay format.

Strengths

- Learning outcomes from simple to complex can be measured.
- Highly structured and clear tasks are provided.
- A broad sample of achievement can be measured.
- Incorrect alternatives provide diagnostic information.
- Scores are less influenced by guessing than true-false items.
- Scores are more reliable than subjectively scored items (e.g., essays).
- Scoring is easy, objective, and reliable.
- Item analysis can reveal how difficult each item was and how well it discriminated between the strong and weaker students in the class.
- Performance can be compared from class to class and year to year.
- Can cover a lot of material very efficiently (about one item per minute of testing time).
- Items can be written so that students must discriminate among options that vary in degree of correctness.
• Avoids the absolute judgments found in True-False tests.

Limitations
• Constructing good items is time consuming.
• It is frequently difficult to find plausible distractors.
• This item is ineffective for measuring some types of problem solving and the ability to organize and express ideas.
• Real-world problem solving differs – a different process is involved in proposing a solution versus selecting a solution from a set of alternatives.
• Scores can be influenced by reading ability.
• There is a lack of feedback on individual thought processes – it is difficult to determine why individual students selected incorrect responses.
• Students can sometimes read more into the question than was intended.
• Often focus on testing factual information and fails to test higher levels of cognitive thinking.
• Sometimes there is more than one defensible “correct” answer.
• They place a high degree of dependence on the student’s reading ability and the instructor’s writing ability.
• Does not provide a measure of writing ability.
• May encourage guessing.

General Construction Guidelines for Multiple-Choice Items
• Base each item on an educational or instructional objective of the course, not trivial information.
• Try to write items in which there is one and only one correct or clearly best answer.
• The phrase that introduces the item (stem) should clearly state the problem.
• Test only a single idea in each item.
• Be sure wrong answer choices (distractors) are at least plausible.
• Incorporate common errors of students in distractors.
• The position of the correct answer should vary randomly from item to item.
• Include from three to five options for each item.
• Avoid overlapping alternatives.
• The length of the response options should be about the same within each item (preferably short).
• There should be no grammatical clues to the correct answer.
• Format the items vertically, not horizontally (i.e., list the choices vertically)
• The response options should be indented and in column form.
Examples of Multiple-Choice Items

The following are examples of the multiple-choice items for each of the levels of Bloom’s Taxonomy (Reference: Gronlund, N. E. (1998). *Assessment of student achievement*. Boston: Allyn and Bacon).

**Knowledge Items**

*Outcome: Identifies the meaning of a term.*

1. **Reliability is the same as:**
   *A. consistency.
   B. relevancy.
   C. representativeness.
   D. usefulness.*

*Outcome: Identifies the order of events.*

2. **What is the first step in constructing an achievement test?**
   A. Decide on test length.
   *B. Identify the intended learning outcomes.
   C. Prepare a table of specifications.
   D. Select the item types to use.
Comprehension Items

*Outcome: Identifies an example of a term.*

3. Which one of the following statements contains a specific determiner?
   A. America is a continent.
   B. America was discovered in 1492.
   *C. America has some big industries.
   D. America’s population is increasing.

*Outcome: Interprets the meaning of an idea.*

4. The statement that “test reliability is a necessary but not sufficient condition of test validity” means that:
   A. a reliable test will have a certain degree of validity.
   *B. a valid test will have a certain degree of reliability.
   C. a reliable test may be completely invalid and a valid test completely unreliable.

*Outcome: Identifies an example of a concept or principle.*

5. Which of the following is an example of a criterion-referenced interpretation?
   A. Derik earned the highest score in science.
   B. Erik completed his experiment faster than his classmates.
   C. Edna’s test score was higher than 50 percent of the class.
   *D. Tricia set up her laboratory equipment in five minutes.

*Outcome: Predicts the most probable effect of an action.*

6. What is most likely to happen to the reliability of the scores for a multiple-choice test, where the number of alternatives for each item is changed from three to four?
   A. It will decrease.
   *B. It will increase.
   C. It will stay the same.
   D. There is no basis for making a prediction.
Application Items

*Outcome: Distinguishes between properly and improperly stated outcomes.*

7. Which one of the following learning outcomes is properly stated in terms of student performance?
   A. Develops an appreciation of the importance of testing.
   *B. Explains the purpose of test specifications.
   C. Learns how to write good test items.
   D. Realizes the importance of validity.

*Outcome: Improves defective test items.*

Directions: read the following test item and then indicate the best change to make to improve the item.

Which one of the following types of learning outcomes is most difficult to evaluate objectively?
   1. A concept.
   2. An application.
   3. An appreciation.
   4. None of the above.

8. The best change to make in the previous item would be to:
   A. change the stem to incomplete-statement form.
   B. use letters instead of numbers for each alternative.
   C. remove the indefinite articles “a” and “an” from the alternatives.
   *D. replace “none of the above” with “an interpretation.”

Analysis Items

Directions: Read the following comments a teacher made about testing. Then answer the questions that follow by circling the letter of the best answer.

“Students go to school to learn, not to take tests. In addition, tests cannot be used to indicate a student’s absolute level of learning. All tests can do is rank students in order of achievement, and this relative ranking is influenced by guessing, bluffing, and the
subjective opinions of the teacher doing the scoring. The teacher-learning process would benefit if we did away with test and depended on student self-evaluation.”

**Outcome: Recognizes unstated assumptions.**

9. Which one of the following unstated assumptions is this teacher making?
   A. Students go to school to learn.
   B. Teachers use essay tests primarily.
   *C. Tests make no contribution to learning.
   D. Tests do not indicate a student's absolute level of learning.

**Outcome: Identifies the meaning of a term.**

10. Which one of the following types of test is this teacher primarily talking about?
    A. Diagnostic test.
    B. Formative test.
    C. Pretest.
    *D. Summative test.

**Synthesis Item** (See paragraph for analysis items)

**Outcome: Identifies relationships.**

11. Which one of the following propositions is most essential to the final conclusion?
    *A. Effective self-evaluation does not require the use of tests.
    B. Tests place students in rank order only.
    C. Test scores are influenced by factors other than achievement.
    D. Students do not go to school to take tests.

**SIMULATIONS**

Simulations allow students to practice required learning in a protected environment that closely approximates the actual environment. Students learn from their errors without negatively affecting personnel or resources. When used appropriately, simulations can promote enthusiasm for learning. (Simulations often make use of the computer as the media for instruction.)

**Benefits of Simulations**

In order for students to receive maximum benefit from the use of simulations, allow enough time for processing and feedback, ensure that the simulation matches and enhances course objectives, and ensure that instructors and students know how to use the simulation properly. Simulations challenge students to think and to—

- practice skills (e.g., counseling, active listening),
- learn to work as teams,
• enhance or learn problem-solving skills, and
• visualize problems or issues from their reading assignments.

Using Simulations as Assessment Instruments

The purpose of the simulation determines how students are assessed. For example, if students play roles, you may assess the student’s performance based on how realistically he or she portrayed the assigned role (especially if the student had to research the role), or assess student performance based on both the way product(s) were developed to perform the role and the performance. Decide if you are evaluating the process (way in which the student goes about a simulation), evaluating the product (what is produced as a result of the simulation), or evaluating a combination of both product and process. Regardless of the assessment measure, instructors and students must know what is being assessed and how the student’s performance is being measured. Types of simulations include: Role-play, Simulation Exercises, Simulation Games, and Computer Models.

Role-play

Role-play provides an opportunity for students to try out theories and techniques that they may know only from lectures, readings, etc. The purpose of the role-play determines the types of roles and how the roles are played. Generally, some of the class (and often the instructor) participate in the role-play while others in the class observe and evaluate the performance.

Simulation Exercises and Simulation Games

Simulation exercises and simulation games most often involve the total class with each member assuming a different role and the whole class acting out a scenario. Normally, the scenarios are designed to either teach a concept or allow students to put theory into practice. Simulation exercises more closely resemble role-play, while simulation games most often resemble board games and packages. With simulation games, you most often have “winners” and “losers.” The facilitator may have to control the competition when it interferes with the purpose of the game.

Computer Models

Computer models are simulation exercises packaged and designed to be used on computers. Computer simulations allow for more interaction than paper-based exercises and allow students to deal with situations that involve practice of skills and problem solving. Computer simulations allow students to perform tasks that are too dangerous or too expensive to deal with directly.

PERFORMANCE-BASED MEASURES

The most effective way to determine whether or not a student has accomplished a “hands-on” type objective is to observe the student performing a sample of the actual behavior you are trying to develop. Written types of assessment measures do not adequately ensure skill performance.

Performance-based assessment requires the student to be active and participate in an observable requirement. There are two types of performance-based methods of assessment--process and product.
**Process Assessment**

The student is assessed based on his ability to perform a task. For example, the instructor assesses the student’s ability to use a computer-based exercise. In this case, the instructor is focusing on the process the student goes through rather than the final product.

The process approach to student assessment is used less frequently than the product assessment approach. However, the process approach is a very valuable assessment technique and should be considered whenever safety or quality is an issue. Under the process assessment approach, the student is evaluated based on his or her ability to perform an action. Process assessment techniques are most often used when the product requires that procedural steps are performed in the proper order and at a certain level of proficiency, such as in problem analysis.

Incorporating a checklist with the scoring key is an effective means of providing guidelines for assessing student attainment of the learning objectives.

**Product Assessment**

In product assessment situations, the student is assessed based on the quality of the product. For example, the instructor assesses the student’s solution to a computer-based exercise rather than how he/she went about solving the exercise.

The product assessment approach also makes use of a checklist. However, when using the product assessment method, the instructor assesses the correctness, completeness, quality, etc., of the product. You, as an author, must identify the characteristics that distinguish an acceptable product from an unacceptable product and provide the needed guidance to the instructors.

**DEVELOPMENT OF ASSESSMENT BOOKLETS**

It is important to follow specific guidance when developing assessment packages. Typically, institutional guidance will include sufficient information to ensure students clearly understand the intent and processes associated with the assessment. At a minimum, the assessment booklet instructions must clearly convey the—

- purpose of the assessment,
- time allowed to complete the assessment,
- procedure for recording answers, and
- penalty points assigned for wrong answers.

**Assembling the Assessment Instrument.** The assessment instrument is as important as developing the items. Unless the assessment instrument is put together properly, students could experience unnecessary frustration. Following are some rules that may help you assemble an assessment instrument.

- Provide adequate space for an answer. The answer must appear on the same page as the item or, if absolutely necessary, on a facing page.
- Include copies of supporting materials (maps, overlays, sketches, etc.) that are necessary to complete assessment items.
- The assessment instrument should be assembled by a single author using the above rules and the resources described below.

**Mechanical Features of an Assessment Booklet**

**Item format**
Are items in the assessment instrument numbered?
Is each item complete on a page?
Does the information pertaining to an item appear on the same page as the item or on a facing page?
Are the item alternatives arranged to achieve both legibility and economy of space?

**Scoring Arrangements**

Has consideration been given to the practicality of a separate answer sheet?
Are answer spaces placed in a vertical column for easy scoring?
If answer spaces are placed at the right of the page, is each answer space clearly associated with its corresponding item?
Are the answer symbols to be used by the students free from possible ambiguity due to careless penmanship or deliberate hedging?
Are the answer symbols to be used by the students free from confusion with the substance or content of the alternatives?

**Grouping and arranging items**

Are items of the same type requiring the same directions grouped together in the assessment?
Where juxtaposition of items of markedly dissimilar content is likely to cause confusion, are items grouped by content within each type of item grouping?
Are items generally arranged from easy to more difficult within the assessment as a whole within each major subdivision of it?

**Designating credit allowances**

Is the amount of credit to be given indicated for the major parts of the assessment?
Is credit allowed for each item clear to the student?
Where items have subdivisions, especially in essay items, are credits indicated for each of the items?

**Directions for answering items**

Are simple, clear, and specific directions given for each different type of assessment item?
Are instructions clearly set off from the assessment by appropriate spacing or type style?
Is effective use made of sample items to help clarify instructions for unusual types of items?

**Deduction for guessing**

If deductions are to be made only for wrong answers, are students instructed not to guess?
If deductions are to be made for unanswered items and wrong answers, are students advised to answer every question according to their best judgment?

**Allowing choices of items**

Are the directions covering choice prominent and explicit?
Is choice exercised within relatively small groups of items?
Printing and duplicating

*Is the assessment instrument free of annoying and confusing typographical errors?*

*Is the assessment instrument legible (i.e., adequate type size, adequate spacing, and clarity of print)?*

*Is the assessment instrument printed on yellow paper?*
5. ACADEMIC STUDENT ASSESSMENT

a. General. The overall purpose of academic assessment is to measure students’ success in achieving the educational learning objectives in a program of study. Each school will measure student achievement judged against published and measureable educational learning objectives. School directors will include education on student assessment policies and procedures as part of their faculty development and continuing education programs.

b. Assessment Policy.

(1) Schools may use a variety of assessment instruments to evaluate a student’s learning. These instruments may include student writing, examinations, assessment of student performance in the classroom for participation, contribution to group work, presentations, and practical exercises.

(2) Each Transcript Recorded Item (TRI) will have an assessment plan which details the assessment instruments to be used and necessary implementing and administering instructions for faculty. A TRI is defined as any block, theme, course, elective, or plan of study that is listed on a student’s Academic Evaluation Report (AER), or equivalent, and transcript record (i.e., C100 theme grade) as part of an overall program of study.

(3) Schools will establish policies and procedures for recording and safeguarding assessment instruments.

(4) Student grades are confidential. Faculty and students will not publicly post grades identifiable by name, or provide a student’s grades to any other student.

(5) Timely and effective feedback is a key element of the assessment process and enhancing students’ learning. Schools will establish policies for providing timely results and feedback to students. School directors may establish student portfolios or other means of consolidating assessment feedback to aid consistency of student coaching and counseling across multiple blocks/themes/phases of a program of study.

(6) Schools will insure that at the beginning of the instructional period for each TRI, faculty will review with students the TRI assessment plan, assessment instruments, and the manner in which students’ performance will be assessed.

(7) Schools will design assessment instruments to:

(a) Provide feedback to students on academic performance.

(b) Inform the faculty about what students have and have not learned.

(c) Improve the capacity of students to identify good work, thus improving their self-assessment or discrimination skills with respect to work submitted.

(d) Select students for recognition through academic and/or performance awards.
(e) Assess student work and participation in a manner that is fair and equitable.

(f) Provide feedback to personnel management systems.

(g) Establish quality assurance measures for graduation requirements.

(8) TRI assessment results will be recorded in a system as directed and provided by the College. Schools will coordinate with the college to establish policies and procedures for faculty access to a student’s grades so faculty are able to effectively monitor a student’s overall academic progress.

(9) Guidelines on academic ethics and academic misconduct (e.g. cheating, plagiarism, unauthorized collaboration, etc.) are covered in CGSC Bulletin No. 912, CGSC Academic Misconduct Investigations and Student Dismissal/Release Procedures, and CGSC Bulletin No. 920, “Academic Ethics Policy.”

c. Student Grading System.

(1) Each school will implement the college-wide grading standards and system described below which includes numerical/letter grades and Pass/Fail. CGSC assigns grading standards to serve as a clear and consistent basis for student assessment of clearly specified learning objective standards.

(2) Each school will establish criteria for approval of extensions of time to submit required assessments, and establish criteria for deduction of points for late submissions that are consistent across the school’s programs of study.

(3) Assessment Standards. Schools will award grades based on how well students achieve course learning objectives. The following definitions and corresponding numerical grades are the standard for all schools within CGSC:

A+ (97-100) = Exceptional — In all cases, individual work meets the highest standards for the assignment or course. Work represents the complete integration of critical reasoning, creative thinking, and evaluative skills as the student achieves course learning objectives. The student has demonstrated a mastery of course content. There is abundant evidence of this integration in both individual and group activities and products. Contributions in seminar are highlighted by insightful thought, understanding, and original interpretation of complex concepts; the student typically leads and facilitates group discussions. Student demonstrates exceptional ability to clearly and effectively communicate ideas and information in writing and verbally. Written or verbal communication is understandable in a single reading or hearing and free of errors in grammar, mechanics, and usage.

A (94-96.99) = Outstanding — In all cases, individual work meets the highest standards for the assignment or course. Work represents the complete integration of critical reasoning, creative thinking, and evaluative skills as the student achieves course learning objectives. The student has demonstrated a mastery of course content. There is abundant evidence of this integration in both individual and group activities and products. Contributions in seminar reflect an outstanding understanding of the material, and are highlighted by insightful thought and original interpretation of complex concepts. Student is fully engaged in discussions. Student demonstrates outstanding ability to clearly and effectively communicate ideas and information in writing and verbally. Written or verbal communication is understandable in a single reading or hearing and free of errors in grammar, mechanics, and usage.
A- (90-93.99) = Excellent — In the majority of cases, individual work represents the complete integration of critical reasoning, creative thinking, and evaluative skills as the student achieves course learning objectives. There is significant evidence of this integration in both individual and group activities and products. Contributions in seminar reflect an excellent understanding of the material, and have an insightful quality; student is fully engaged in discussions; student demonstrates excellent ability to clearly and effectively communicate ideas and information in writing and verbally. Written or verbal communication is understandable in a single reading or hearing and generally free of errors in grammar, mechanics, and usage.

B+ (87-89.99) = Very Good — Meets the standards for the assignment or course. Work represents consistency in the application of critical reasoning skills as the student achieves course learning objectives. The student is competent in the application of course content. There is frequent evidence of this application in both individual and group activities and products. Contributions in seminar reflect a good understanding of material; student joins in most discussions. Student demonstrates very good ability to clearly and effectively communicate ideas and information in writing and verbally. Written or verbal communication is generally understandable in a single reading or hearing and contains only a few minor errors in grammar, mechanics, and usage.

B (84-86.99) = Satisfactory — Meets most of the standards for the assignment or course. Work represents some consistency in the application of critical reasoning skills as the student achieves course learning objectives. The student is competent in the application of course content. There is frequent evidence of this application in both individual and group activities and products. Contributions in seminar reflect a good understanding of material; involvement in discussions is satisfactory. Student demonstrates satisfactory ability to clearly and effectively communicate ideas and information in writing and verbally. Written or verbal communication is generally understandable in a single reading with some sentences or paragraphs that are not clear or are vague, and may contain numerous minor or a few major errors in grammar, mechanics, and usage.

B- (80-83.99) = Slightly Below Average — Shows slightly below average command of the material for the assignment or course; work represents a limited consistency in the application of critical reasoning skills as the student achieves course learning objectives. Contributions in seminar reflect an adequate, but slightly below average understanding of material; involvement in discussions is limited. Student demonstrates acceptable, but slightly below average ability to clearly and effectively communicate ideas and information in writing and verbally. Written or verbal communication requires more than a single reading or hearing to be understood and contains numerous sentences or paragraphs that are not clear or are vague and contains numerous major errors in grammar, mechanics, and usage.

C (70-79.99) = Marginal — Meets some of the basic standards for the assignment or course. Work represents low comprehension of course content and is inconsistent in its application of critical reasoning skills. Contributions in seminar reflect a marginal understanding of material and show minimal preparation; involvement in discussions is minimal; frequently needs to be encouraged. Student demonstrates marginal ability to clearly and effectively communicate ideas and information in writing and verbally. Written or verbal communication requires multiple readings or hearings to be
understood and contains numerous unclear or vague paragraphs and major errors in grammar, mechanics, and usage that distract reader or listener.

U (<70) = Unsatisfactory — Failed to address the basic standards in most or all areas for the assignment or course. Work represents a consistent failure to achieve course learning objectives and lack of critical reasoning. Contributions in seminar reflect substandard preparation; limited participation even when called upon or encouraged. The student rarely, or minimally, demonstrates comprehension of course content and is not competent in its application. Student demonstrates significant weakness in ability to clearly and effectively communicate ideas and information. Written or verbal communication is consistently vague or unclear and contains excessive errors in grammar, mechanics, and usage.

I (Incomplete)= Instructors may award a temporary grade of Incomplete if a student for reasons or circumstances judged acceptable, was unable to complete TRI requirements on time. A grade of Incomplete will not be awarded to students who do not complete course requirements or fail to turn in assignments due to substandard time management. An "I" is given as a temporary grade when a student’s academic performance assessment may be influenced by proceedings of an alleged violation of academic ethics, pending resolution of the case. An "I" is given as a temporary grade for approved absence such as medical leave, college approved Temporary Duty, emergency leave, family problems or other similarly justifiable circumstances. The faculty member will provide make-up guidance and make arrangements with the student for completion of the work required at the earliest possible date. Students cannot graduate with a final TRI grade of "I." If the work is not completed by the agreed upon due date, the faculty member will award a final grade of "U."

Pass = Achieved course, program, or assessment educational outcomes or objectives at level set by respective school.

Fail = Did not meet course, program, or assessment educational outcomes or objectives at level set by respective school.
Appendix F

ASSESSMENT TOOLS
SAMPLE GRADING RUBRIC FOR WRITTEN ASSIGNMENT

The following rubric describes the performance standards for the criteria listed in the left column.

<table>
<thead>
<tr>
<th>Performance Level</th>
<th>Unsatisfactory 0</th>
<th>Unsatisfactory 1</th>
<th>Marginal 2</th>
<th>Marginal 3</th>
<th>Satisfactory 4</th>
<th>Exceptional 5</th>
<th>Score (0 – 5)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>addresses all aspects of the assignment shows original thought and critical reflection considers implications and consequences connected to the literature; supported by evidence</td>
<td>Does not address all aspects of the assignment; does not show original thought or critical reflection; does not consider implications and consequences; is not connected to the literature; arguments are not supported by evidence.</td>
<td>Addresses most important aspects of the assignment; displays some superficial analysis; may include some critical reflection or consideration of implications and consequences, but not both; makes a few obligatory connections to textbook content; presents evidence, but ignores counterpoints.</td>
<td>Addresses all aspects of the assignment; shows original thought and critical reflection; considers implications and consequences; connected to the literature; supported by evidence.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Organization</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>well-organized provides a strong summary and conclusion</td>
<td>Not well-organized; does not provide a strong summary or conclusion</td>
<td>Points are clear. In general, points establish a logical line of reasoning. May lack a good introduction or summary/conclusion</td>
<td>Well-organized; clearly and logically presents key points to be most understandable by the audience; provides a solid introduction, strong evidence in the body, and a clear summary or conclusion</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Style</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>concisely and precisely written smooth flow with effective transitions</td>
<td>Not concisely or precisely written; awkward flow with no transitions</td>
<td>Some language is imprecise but generally understandable. Style is adequate but lacks polish and directness.</td>
<td>Concisely and precisely written; smooth flow with effective transitions; tone is appropriate for the purpose. Active voice predominates</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Correctness</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>complies with APA standards; sources properly cited generally devoid of spelling and grammar errors</td>
<td>Does not comply with APA standards; sources not properly cited; numerous errors in spelling or grammar that confuse or distract the reader</td>
<td>A few departures from the published APA standard, a few spelling and grammar errors but not enough to confuse or distract the reader.</td>
<td>Complies with APA standards; sources properly cited; generally devoid of spelling and grammar errors</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Score (Max. 20 pts.) _______
## SAMPLE GRADING RUBRIC FOR GROUP PRESENTATION

The following rubric describes the performance standards for the criteria listed in the left column.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Part</th>
<th>Individual (2/3 of Total Grade)</th>
<th>Group (1/3 of Total Grade)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content/Correctness</td>
<td>Addresses all aspects of the assignment</td>
<td>Addresses all aspects of the assignment; includes paraphrased information, not just quotes from other sources; considers implications and consequences; connected to the literature; supported by evidence; generally devoid of spelling and grammar errors</td>
<td>Addresses all aspects of the assignment; supported by evidence; complies with APA standards; sources properly cited; includes annotated bibliography; generally devoid of spelling and grammar errors</td>
</tr>
<tr>
<td>Content Score</td>
<td>(0 – 25 points)</td>
<td></td>
<td>(0 – 25 points)</td>
</tr>
<tr>
<td>Organization</td>
<td>Content is organized in a logical manner; references to other sources are clearly identified and properly referenced.</td>
<td></td>
<td>Presentation is organized in a logical manner that would be understandable to a global audience (not just members of this class); provides a summary of key ideas and concepts.</td>
</tr>
<tr>
<td>Organization Score</td>
<td>(0 – 25 points)</td>
<td></td>
<td>(0 – 25 points)</td>
</tr>
<tr>
<td>Style</td>
<td>Effectively and appropriately incorporates graphics to contribute to the presentation of content; avoids jargon or colloquial language</td>
<td>Integrate a variety of graphics to present content in an effective and visually appealing way; includes appropriate references to other reputable sources on the topic.</td>
<td></td>
</tr>
<tr>
<td>Style Score</td>
<td>(0 – 25 points)</td>
<td></td>
<td>(0 – 25 points)</td>
</tr>
<tr>
<td>Collaboration</td>
<td>Actively and equitably contributed to the content and design of the presentation; applied personal strengths and expertise in ways that contributed positively to the quality and appeal of the presentation.</td>
<td>Integrates the collective efforts of the entire group without distracting or obvious differences in organization or style by individual contributors.</td>
<td></td>
</tr>
<tr>
<td>Collaboration Score</td>
<td>(0 – 25 points)</td>
<td></td>
<td>(0 – 25 points)</td>
</tr>
<tr>
<td>Total Score (Sum of Components)</td>
<td>(0 – 100 points)</td>
<td></td>
<td>(0 – 100 points)</td>
</tr>
<tr>
<td>Final Presentation Score</td>
<td>(2/3 X Individual Score + 1/3 X Group Score)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
CGSC FORM 1009C ASSESSING CONTRIBUTION TO LEARNING

STUDENT NAME:  
STAFF GROUP:  
DATE:  

COURSE TITLE:  
ASSIGNMENT:  

INSTRUCTOR:  
DEPARTMENT:  

Contribution to Learning Standards: Communicates ideas effectively, demonstrating critical thinking that contributes to group learning.

Overall Grade:

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>97+</td>
<td>A+</td>
</tr>
<tr>
<td>96-94</td>
<td>A</td>
</tr>
<tr>
<td>93-90</td>
<td>A-</td>
</tr>
<tr>
<td>86-84</td>
<td>B+</td>
</tr>
<tr>
<td>83-80</td>
<td>B</td>
</tr>
<tr>
<td>79-70</td>
<td>B-</td>
</tr>
<tr>
<td>&lt;70</td>
<td>U</td>
</tr>
</tbody>
</table>

Total:

Critical Thinking Assessment

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Usually</th>
<th>Sometimes</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not hesitant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supported</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not make</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tied thoughts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communicated</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respectfully</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approached</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Approach</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Logic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comments</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encouraged</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Instructor Comments:

Cognitive Level Attained

<table>
<thead>
<tr>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>EVALUATION (Judging or weighing by building and using criteria and standards)</td>
</tr>
<tr>
<td>SYNTHESIS (Integrating parts into a new whole)</td>
</tr>
<tr>
<td>ANALYSIS (Breaking material down into component parts to determine structures and relationships)</td>
</tr>
<tr>
<td>APPLICATION (Use of knowledge to solve problems)</td>
</tr>
<tr>
<td>COMPREHENSION (Understanding of the material)</td>
</tr>
<tr>
<td>KNOWLEDGE (Recall of specific information)</td>
</tr>
</tbody>
</table>

Universal Intellectual Standards

<table>
<thead>
<tr>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clarity</td>
</tr>
<tr>
<td>Accuracy</td>
</tr>
<tr>
<td>Precision</td>
</tr>
<tr>
<td>Relevance</td>
</tr>
<tr>
<td>Depth</td>
</tr>
<tr>
<td>Breadth</td>
</tr>
<tr>
<td>Logic</td>
</tr>
<tr>
<td>Significance</td>
</tr>
<tr>
<td>Fairness</td>
</tr>
</tbody>
</table>
CGSC FORM 1009S ASSESSING SPEAKING AND PRESENTATIONS

STUDENT NAME:                      STAFF GROUP:                      DATE:

ASSIGNMENT/COURSE TITLE:

INSTRUCTOR/DEPARTMENT:

ARMY STANDARD: Transmits a clear, concise, organized message that communicated the speaker’s intent.

<table>
<thead>
<tr>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>U</td>
</tr>
<tr>
<td>C</td>
</tr>
<tr>
<td>B-</td>
</tr>
<tr>
<td>B</td>
</tr>
<tr>
<td>B+</td>
</tr>
<tr>
<td>A-</td>
</tr>
<tr>
<td>A</td>
</tr>
<tr>
<td>A+</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>5</td>
</tr>
<tr>
<td>Unsatisfactory</td>
</tr>
<tr>
<td>Marginal</td>
</tr>
<tr>
<td>Satisfactory (Average)</td>
</tr>
<tr>
<td>Outstanding</td>
</tr>
<tr>
<td>Exceptional</td>
</tr>
</tbody>
</table>

Instructions: Immediately following the end of the presentation ask the student(s) to assess their own performance using the questions below as a guide.

Student Assessment of Performance:

Student Question: How do you think you did?

Briefing Start: ________

Briefing Stop: ________

Total Time: ________

Did you practice/rehearse? ________

Overall: 1 2 3 4 5

Content: 1 2 3 4 5

Delivery: 1 2 3 4 5

Describe one thing that you did well in this presentation.

Describe one thing that you would change about your preparation of this presentation and do differently next time.

Synopsis of Instructor's Comments:

CGSC Form 1009s
June 2011 (Supersedes CGSC Form 1009s dated Jun 2002) © USACGSC
Instructions: Use the following scale to assess the student’s performance for each criterion below:
1 = Unsatisfactory; 2 = Marginal; 3 = Satisfactory (Average); 4 = Outstanding; 5 = Exceptional

<table>
<thead>
<tr>
<th>SUBSTANCE/ORGANIZATION</th>
<th>STYLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Discernible, balanced plan of presentation)</td>
<td>Physical Behavior</td>
</tr>
<tr>
<td>Introduction</td>
<td>Eye Contact (maintains with audience, natural, avoids excessive reference to slides or notes)</td>
</tr>
<tr>
<td>Greeting (poised, confident)</td>
<td></td>
</tr>
<tr>
<td>Purpose (presents BLUF, relevant, focused, clearly and concisely stated controlling idea/thesis)</td>
<td></td>
</tr>
<tr>
<td>References (current, meaningful)</td>
<td></td>
</tr>
<tr>
<td>Procedure/Outline (logical, posted and/or embedded throughout brief)</td>
<td></td>
</tr>
<tr>
<td>Body</td>
<td></td>
</tr>
<tr>
<td>Accuracy/Completeness (all major points, facts/assumptions precisely stated, information is relevant and accurate, no major points omitted, level of detail suitable)</td>
<td></td>
</tr>
<tr>
<td>Support/Significance (appropriate use of facts; ample evidence and other perspectives/examples/opinions, offered; answers the “So what?” and/or “Therefore…”; demonstrates analysis)</td>
<td></td>
</tr>
<tr>
<td>Sequence (conveys information in clear, logical, and meaningful sequence; easy to follow)</td>
<td>Gestures (meaningful, appropriate, well timed, provided emphasis)</td>
</tr>
<tr>
<td>Transitions (appears rehearsed, present logical flow, maintains appropriate tempo)</td>
<td></td>
</tr>
<tr>
<td>Closing</td>
<td></td>
</tr>
<tr>
<td>Summary (emphasizes main point, no new information)</td>
<td></td>
</tr>
<tr>
<td>Ask for Questions</td>
<td></td>
</tr>
<tr>
<td>Conclusion (appropriate, meaningful, clear and concise)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CORRECTNESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transitions (appears rehearsed, present logical flow, maintains appropriate tempo)</td>
</tr>
<tr>
<td>Visuals/Slides/Graphics</td>
</tr>
<tr>
<td>Format (sequencing, numbering, font, centering, abbreviations)</td>
</tr>
<tr>
<td>Content (relevant, appropriate use of pictures/graphics, not to busy)</td>
</tr>
<tr>
<td>Handouts/Video-clips, etc. (introduced, relevant)</td>
</tr>
</tbody>
</table>

CGSC Form 1009s
June 2011 (Supersedes CGSC Form 1009s dated Jun 2002) © USACGSC
CGSC FORM 1009W ASSESSING WRITING

<table>
<thead>
<tr>
<th>STUDENT NAME:</th>
<th>STAFF GROUP:</th>
<th>DATE:</th>
</tr>
</thead>
<tbody>
<tr>
<td>COURSE TITLE:</td>
<td>ASSIGNMENT:</td>
<td>DEPARTMENT:</td>
</tr>
<tr>
<td>INSTRUCTOR:</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Requirement:** Write effectively as defined by the Army standard as “understandable in a single, rapid reading and generally free of errors in grammar, mechanics, and usage.”

**Standard:** Writing includes—
1. Substance;
2. Organization;
3. Style; and,

**OVERALL GRADE:**

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>97+:</td>
<td>A+</td>
</tr>
<tr>
<td>96-94:</td>
<td>A</td>
</tr>
<tr>
<td>93-90:</td>
<td>A-</td>
</tr>
<tr>
<td>89-87:</td>
<td>B+</td>
</tr>
<tr>
<td>86-84:</td>
<td>B</td>
</tr>
<tr>
<td>83-80:</td>
<td>B-</td>
</tr>
<tr>
<td>79-70:</td>
<td>C</td>
</tr>
<tr>
<td>&lt;70:</td>
<td>U</td>
</tr>
</tbody>
</table>

Total:

**INSTRUCTOR COMMENTS**

---

Cognitive Level Attained
(Higher levels include characteristics of lower levels)

| **EVALUATION** (Judging or weighing by building and using criteria and standards) |
| **SYNTHESIS** (Integrating parts into a new whole) |
| **ANALYSIS** (Breaking material down into component parts to determine structures and relationships) |
| **APPLICATION** (Use of knowledge to solve problems) |
| **COMPREHENSION** (Understanding of the material) |
| **KNOWLEDGE** (Recall of specific information) |

**Elements of Thought**

- Points of View we need to consider
- Purpose of the Thinking
- Implications and Consequences of our thinking
- Questions we are trying to answer
- Information we need to answer the question
- Assumptions or ideas we are taking for granted
- Concepts or key ideas we are using in our thinking
- Inferences we are coming to

**Universal Intellectual Standards**

- Clarity
- Accuracy
- Precision
- Relevance
- Depth
- Breadth
- Logic
- Significance
- Fairness

CGSC Form 1009W, May 2011. (Supersedes CGSC Form 1009W dated May 2009) © USACGSC
**Instructions:** The rubric below integrates the Elements of Thought and Universal Intellectual Standards, IAW Paul and Elder, with the four standards of effective writing: Substance, Organization, Style, and Correctness. Substance is further divided into Content and Analysis/Problem-Solving/Conclusions. The underlined and bolded words directly correspond with Elements of Thought and Universal Intellectual Standards and demonstrate the relationship between effective writing and critical thinking. This rubric provides a means to explicitly assess critical thinking while assessing writing. Faculty should assign points based on the requirements of the assignment. Assess writing based on the descriptions in the Exceptional, Satisfactory and Unsatisfactory blocks.

<table>
<thead>
<tr>
<th><strong>Student Self-Assessment</strong></th>
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<td><strong>Thesis</strong> is clear and concise. Content is fully compliant with the assigned requirement and the needs of the reader; everything is accurate, level of detail is suited to the needs of the assigned requirement and reader. Explanations and descriptions of content are clear and precise. Quantitative information is relevant and accurate, expressed with appropriate examples, and well integrated into the text.**</td>
<td><strong>No thesis, Information (facts, assumptions, concepts/theories) are not accurate, and/or content is irrelevant, missing, or misrepresented, and/or insufficient detail, and/or inaccurate or ineffective management of quantitative information.</strong></td>
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<td><strong>Remains at a low cognitive level. Analysis superficial; little or no relation between conclusions and evidence; ethical/legal issues ignored; fails to address alternative points of view or counter evidence.</strong></td>
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<td><strong>Words are precise; language is concise and without wordiness; writer’s tone is appropriate to the audience and purpose; sentences track clearly even to the rapid reader; transitions lead smoothly from one idea to the next. Active voice predominates. Sources, as relevant, are appropriately cited.</strong></td>
<td><strong>The language is awkward, hard to read. The reader must backtrack to understand the writer’s meaning, or the reader cannot understand the meaning. Language is extremely wordy; or primarily in passive voice, or inappropriate in tone. Citation of sources is missing or inaccurate.</strong></td>
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<td><strong>Few if any departures from the published standard (grammar, punctuation and usage).</strong></td>
<td><strong>Departures from the published standard (grammar, punctuation and usage) significantly confuse or distract the reader.</strong></td>
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Appendix G

CLASSROOM “CHECKS ON LEARNING”

INTRODUCTION

Confusion often exists between the terms apply and assessment. They are similar and, in fact, may use the same instruments. However, they have very distinct purposes: assessment refers to determining how well the course learning objectives, usually described in TLOs, were achieved while apply refers to the step in the ELM during which the instructor conducts a check on learning: did the students learn what the instructor intended for them to learn to whatever standard he or she had in mind? Formal assessment techniques are described in Appendix D. This appendix addresses the less formal “checks on learning” that could be employed in the apply step of the ELM as part of the conduct of the lesson.

A good resource for simple, informal in-class “checks on learning” is Classroom assessment techniques: A handbook for college teachers (Angelo and Cross, 1993). Examples of commonly-used classroom assessment techniques that are effective as an apply are described in subsequent sections.

PURPOSE

Classroom assessment helps instructors obtain useful feedback on what, how much, and how well their students are learning. Through close observation of students in the process of learning, the collection of frequent feedback on students’ learning, and the design of modest classroom experiments, instructors learn much about how their students learn and how they respond to particular teaching approaches. This information can be used to refocus teaching to help students make their learning more efficient and more effective.

There is no such thing as effective teaching in the absence of learning. Teaching without learning is just talking. Too often, students have not learned as much or as well as was expected, and there are gaps between what was taught and what has been learned. By the time an instructor notices these gaps in knowledge or understanding, it is frequently too late to remedy the problems.

To avoid unhappy surprises, instructors need better ways to monitor learning throughout the academic year; they need a continuous flow of accurate information on student learning. For example, if the goal is for students to learn points A through Z, an instructor first needs to know whether all students are really starting at point A and, as the course proceeds, whether they have reached intermediate points B, G, L, R, and so forth. (Angelo and Cross, 1993, p. 3) It is not enough to test students when the lesson plan has arrived at a particular point. Classroom assessment is useful for determining how well students are learning at initial and intermediate points, and all points in between. Instructors are better able to understand and promote learning, and increase their students’ ability to become more effective, self-assessing, self-direct learners.

Characteristics

- **Learner-centered.** Focuses the attention on observing and improving learning, rather than on observing and improving teaching.

- **Teacher-directed.** Respects the autonomy, academic freedom, and professional judgment of instructors. The instructor decides what to assess, how to assess, and how to respond to the information gained through the assessment. (Angelo and Cross, 1993, p. 4)
• **Mutually beneficial.** Because it is focused on learning, classroom assessment requires the active participation of students. By cooperating in assessment, students reinforce their grasp of the course content and strengthen their own skills at self-assessment. Their motivation increases when they begin to realize their instructors are interested and invested in their success as learners.

Instructors sharpen their teaching focus by continually asking themselves three questions:

• “What are the essential skills and knowledge I am trying to teach?”
• “How can I find out whether students are learning them?”
• “How can I help students learn better?” (p. 5)

**Seven basic assumptions of classroom assessment (Angelo and Cross, 1993)**

1. The quality of student learning is directly, although not exclusively, related to the quality of teaching. Therefore, one of the most promising ways to improve learning is to improve teaching. (p. 7)

2. To improve their effectiveness, teachers need first to make their goals and objectives explicit and then to get specific, comprehensible feedback on the extent to which they are achieving those goals and objectives. (p. 8)

3. To improve their learning, students need to receive appropriate and focused feedback early and often; they also need to learn how to assess their own learning.

4. The type of assessment most likely to improve teaching and learning is that conducted by instructors to answers questions they themselves have formulated in response to issues or problems in their own teaching. (p. 9)

5. Systematic inquiry and intellectual challenge are powerful sources of motivation, growth, and renewal for instructors, and Classroom Assessment can provide such challenge.

6. Classroom assessment does not require specialized training; it can be carried out by dedicated instructors from all disciplines. (p. 10)

7. By collaborating with colleagues and actively involving students in Classroom Assessment efforts, instructors and students enhance learning and personal satisfaction.

**CLASSROOM ASSESSMENT TECHNIQUES**

**Misconception/Preconception Check**

The greatest obstacle to new learning is often not the students’ lack of knowledge, but rather the existence of prior knowledge. It is often much harder for students to unlearn incorrect or incomplete knowledge than to master new knowledge (p. 132). Identify some of the most troublesome common misconceptions or preconceptions students bring to your course. Brainstorming may be a good technique to use (p. 135). Select a handful of these troublesome ideas and beliefs, and focus on them. Create a simple questionnaire to elicit information about students’ ideas and beliefs in these areas. Have another instructor read the questions to ensure they are not patronizing, threatening, or obvious. Think through how you will respond to several likely outcomes; delete any questions you are not prepared to deal with. Explain rationale for Classroom Assessment Technique (CAT) to students, reinforce anonymity, and explain how you plan to use their feedback. (p. 136)
This Classroom Assessment Technique is a quick way to uncover likely barriers to learning. Anonymity contributes to likelihood of students truthfully revealing their own ideas and beliefs. A disadvantage may be that students do not enjoy having their certainties questioned (p. 137).

**Minute Paper**

End class a few minutes early and ask students to respond to some variation on the following two questions: “What was the most important thing you learned during this class?” and “What important question remains unanswered?” Students write their responses on index cards or half-sheets of paper and hand them in. Minute Papers provide manageable amounts of timely and useful information from minimal investment of time and energy. They assess more than mere recall. To select the most important of significant information, students must first evaluate what they recall, and then self-assess by asking themselves how well they understand what they should have just learned. (p. 148)

**Muddiest Point**

The simplest and most efficient Classroom Assessment Technique. Technique consists of asking students to jot down a quick response to one question: “What was the muddiest point in _______?” Focus might be a lecture, discussion, homework assignment, guest speaker, or some other learning activity. Instructors can use feedback on what students found least clear or most confusing to guide their teaching about what may require more emphasis or time. Students must employ some high-order thinking in order to identify what they do not understand and articulate those points quickly. (p. 154)

**One-Sentence Summary**

Requires students to answer the questions “Who does what to whom, when, where, how, and why?” about a given topic, and then synthesize those answers into a single informative, grammatical, and long summary sentence. This CAT enables instructors to find out how concisely, completely, and creatively students can summarize a large amount of information on a given topic. An advantage is that it allows faculty to scan and compare response quickly and easily. It also gives students practice in “chunking” information – condensing it into smaller, interrelated bits that are more easily processed and recalled. (p. 183)

**Critical Incident Questionnaire (CIQ)**

Brookfield (2006) describes another effective tool for classroom assessment. The Critical Incident Questionnaire (CIQ) is an instrument that helps find out how students are experiencing their learning and your teaching. It helps embed our teaching in accurate information about students’ learning that can be solicited on a regular basis in an anonymous manner. It is a quick and revealing way to discover the effects an instructor’s actions are having on students and to find out the emotional highs and lows of their learning. Using the CIQ provides a running commentary on the emotional tenor of each class an instructor teaches.

The CIQ is a single-page form handed out to students on a regular basis, typically at the end of the last class you have with them that week or at the end of a block or module. It comprises five questions, each of which asks students to write down some details about events or actions that happened in the class that week. Its purpose is not to ask students what they liked or didn’t like about the class, although that information inevitably emerges. Instead, students are asked to focus on specific events and actions that were engaging, distancing, confusing, or helpful. Having this highly concrete information about particular events and actions is much more useful than reading general statements of preferences.
The CIQ takes about five minutes to complete, and students are told not to put their names on the form. If nothing comes to mind as a response to a particular question, they are told to leave the space blank. They are also told that at the next class meeting the group’s responses will be shared.

Critical Incident Questionnaire (CIQ) Advantages
- They alert us to problems before they become disasters.
- They encourage students to be reflective learners.
- They build a case for diversity in teaching.
- They build trust.
- They suggest possibilities for our development.
- They us model critical thinking. (pp. 41-52)
Appendix H

GENERALIZE NEW INFORMATION

INTRODUCTION

This appendix contains general descriptions of teaching methods that can be used to develop the generalize new information (GNI) step of the Army Experiential Learning Model. Presented first are descriptions, including uses, advantages, disadvantages and characteristics, for nine methods commonly used for small group instruction in educational settings. These are followed by brief summaries, including a description and typical uses, for 25 additional methods of instruction that lesson authors may choose. This comprehensive list of methods of instruction aligns with the choices available in the Army-wide Training Development Capability (TDC) automated system.

While the exact way each method is applied will vary somewhat with the subject matter, learning objectives, and target audience of different courses, it is the cognitive learning level that holds the most sway. Another less significant consideration in teaching method selection is variety. If the lesson under development falls in the middle of a week-long exercise, the author might consider a teaching method other than a practical exercise as he develops the GNI step of the ELM. The following are available to the lesson author for use in most steps of the ELM.

Each of these methods potentially supports all learning levels of the cognitive domain through their discovery of factual information, principles, recognition, discrimination, creation, and evaluation. They all offer a means for the internalization required for the affective domain in the exchange of ideas and the potential for changing attitudes necessary for adjustment, the goal of all teaching.

METHODS OF INSTRUCTION INDEX

Common Methods

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NINE COMMON METHODS OF INSTRUCTION

1. Discussion Method (Instructor/Group Directed)

In debates we can win only by excluding other points of view whereas in discussions we can achieve only by inclusions.

(Lindeman, 1926)

At its best, discussion greatly expands our horizons and exposes us to whole new worlds of thought and imagining. It improves our thinking, sharpens our awareness, increases our sensitivity and heightens our appreciation for ambiguity and complexity.

(Brookfield & Preskill, 2005)

In their book, Discussion as a way of teaching, Brookfield and Preskill (2005) describe the purposes of discussion:

- To help participants reach a more critically informed understanding about the topic or topics under consideration,
- To enhance participants’ self-awareness and their capacity for self-critique,
- To foster an appreciation among participants for the diversity of opinion that invariably emerges when viewpoints are exchanged openly and honestly, and
- To act as a catalyst to helping people take informed action in the world.

Discussion is an exploration of a specific topic by a sharing of ideas, opinions, and experiences of a group of students. The instructor does not present theory, principles, doctrine, or ways of handling problems, but serves as the catalyst and moderator. The role of the instructor is not to supply answers or information, but to help the group define problems and develop solutions by guiding the discussion so that it is constantly directed toward the course objectives. Kinds of discussions can range from the tightly-controlled to the uncontrolled problem-solving discussion.

Discussion uses learner's knowledge and attitude concerning a specific topic as a means to review, clarify, or summarize homework, case studies, or other work assignments. It also develops the learner's ability to learn deductively, encourages learning through group participation, stimulates interest and thinking, and prepares students for the application of theory or procedures to specific situations.

To prepare for a discussion, ensure students have the required level of subject matter expertise in order for the method to be effective. Instructor preparation includes planning carefully and having a thorough knowledge of the subject matter. The instructor must also anticipate situations and problems that may arise during the discussion; must have some sort of timetable for effective utilization of time; and must have thoughtfully considered how to most effectively introduce material, provoke discussion, and guide thinking toward the planned conclusions as defined by the learning objectives.
Discussion Advantages

- Increases **students' interest** by offering an opportunity to express their own opinions.
- Pools the **knowledge and experience of the group**, and allows the instructor to make effective use of the groups' backgrounds.
- Increases **students' acceptance** and commitment by allowing the students to participate in developing the lesson and solving the problem.
- Enhances more **permanent learning** because of the increased participation and internalization.

Discussion Disadvantages

- Provides the opportunity for **domination** by a few students.
- Requires a **highly skilled instructor** to monitor and facilitate without dominating; someone who can draw out the experience of the students by asking probing questions; and someone who can keep the discussion on track.
- Requires **participation** by the students. This can backfire if the class is being given right after lunch.
- Degenerates, occasionally, into **polarization** of ideas and students.
- Bogs down, at times, on unimportant points or **diverts** attention from the main issue to be discussed.
- Consumes a significant amount of **time**.
- Limits the size of the group.

Characteristic of a Good Discussion

- Can use a method of recording the outcome of the group discussion (e.g., flip chart, recorder, chalkboard, computer, or computer-generated graphics).
- Seats the group so that all group members can see each other.
- Keeps the group size between 10 to 25 participants for the most effective learning.
- Explains objectives and gives a well-prepared agenda to the group so that the session does not become a "bull session."
- Keeps the group on track, without stifling participation, by periodically paraphrasing good points and summarizing where the group has been and where it is headed.

2. Case Study Method (Instructor/Group Directed)

A Case Study is an oral, written, or computerized account of a realistic situation with sufficient detail to make it possible for the learners to determine, through analysis, the problems involved and produce possible solutions. There is no one right answer. The instructor plays an active but nondirective role in stimulating discussion and encouraging mature analysis. This method is useful in developing thinking, problem identification, and decision-making skills. It also provides realistic practical experience and assesses student learning while validating analytical knowledge and abilities.

Preparation includes students having a complete background reading in content area. It is helpful if they are required to submit a written case analysis prior to the case discussion.
Preparation for instructors include reading the case and preparing a case analysis prior to the class meeting, indicating references for use during class discussion. Instructors are more successful when they have previous experience using non-directive methods.

**Case Study Advantages**
- Emphasizes the individual's role in the learning situation by involving him/her in the process.
- Keep interest levels high because of student activity and relevancy to real-world situations. This may be a problem the student will encounter later.
- Blends well with other methods (e.g., lecture, discussion, or brainstorming).
- Helps to create new and novel solutions to old problems.

**Case Study Disadvantages**
- Takes a large block of time for the student to apply the knowledge and to formulate it into a solution.
- Demands much time to write because it can have so many variables and can become outdated easily.
- Fosters timidity and lack of confidence in an already timid and withdrawn student.

**Characteristics of a Good Case Study**
- Case study contains enough facts to be completed without making up information. The information is organized in such a way that the solution is not obvious. (Incomplete or incorrect information, extraneous or confusing information, and cute or funny names often detract from the effectiveness of a case.)
- Instructor links the case study to the "real world," thereby adding credibility to the case.
- Instructor works the case and becomes thoroughly prepared to answer any questions that arise.
- Instructor revises the case study periodically to keep it up-to-date with new procedures and techniques.

3. **Practical Exercise Method (Instructor/Group Directed)**

   The practical exercise (PE), through a short problem, skill, operation, or movement, focuses on a specific learning point. The method stresses joint effort and collective decision making in group problem-solving and research. Exercises that are assigned may be such that they can be completed within one class session, in which case they are selected so as to parallel or illustrate ongoing instruction. Alternatively, group exercises that require extensive work, and research may be assigned to extend over weeks or even a term. In either approach, all facts and information relevant to the problem must be available to students or accessible through research. PE is learning by doing.

   There are four types of PEs:
   - **Group performance-controlled exercises.** Students work together, step-by-step, at a fixed rate that the instructor sets.
   - **Coach-pupil practical exercises.** Students pair up and perform alternately as instructor and student.
   - **Independent exercises.** Students act and work by themselves.
- **Team practical exercises.** Group performs as a team.

The PE demonstrates newly learned procedures and principles prior to applying the knowledge in a more complex environment much like a *concrete experience* (CE); reinforces team skills; reinforces safety procedures; and gauges understanding of the concepts taught by the instructor.

Students do not require prior experience with the method or preparation. Instructor requirements include: content expertise (moderate knowledge of the content field and/or expert knowledge of information sources), experience (helpful but not essential) and method proficiency.

**PE Advantages**

- **Builds confidence** when the student can accomplish the task by helping to make the transition between conceptualization and application.
- **Actively involves** the participants.
- Enables **learning assessment.** The instructor can identify whether learning has occurred and pinpoint problem areas.
- Promotes **safety** because student performs the task in a controlled environment, which prevents accidents.

**PE Disadvantages**

- May require **tools and equipment** that may be hard to obtain.
- Requires a **large block of time** because of the various rates of completion and practice time necessary.
- May require **more instructors** to keep a constant check on the progress of each student, to give assistance when needed, and to evaluate the quality of the performance.

**Characteristics of a Good PE**

- Limited to one concept or procedure. Keep it as simple as possible.
- Neither too long nor too complex.
- Validated ahead of time to assure it will produce the desired result.

4. **Role-Play Method (Instructor/Group Directed)**

Role-Play is a method of portraying human interaction in imaginary situations in such a manner that elicits realistic behavior. A situation is presented to the group and some members are asked to assume roles and to enact the situation toward some resolution. Other students observe the behavior of the actors. The scene may be carried to a resolution or the instructor may stop it at some critical point. Following the scene, observations of the audience, as well as thoughts and feelings of the actors, are reported and discussed by the group. In this way, faulty diagnoses, alternative actions, and discrepancies between diagnoses and action can be identified. Alternative ways of handling the situation may be tried by replaying the scene.

Instructors must be thoroughly familiar with the situation and should prepare an analysis of possible responses prior to class. It is recommended that instructors practice role-play prior to class. They must be flexible and prepared to cope with unanticipated events and outcomes. Student preparation is not essential.
Role-Play can be useful in practicing skills learned, such as problem solving, counseling, and interviewing. It also promotes understanding of the viewpoints and feelings of other people, and encourages insight into attitudes and behaviors of themselves and others.

**Role-Play Advantages**

- Allows students to experiment with new learning and receive immediate feedback.
- Totally involves the student.
- Is relatively easy to develop.
- Provides some "real world" experience to the learning process.
- Is economical unless expensive equipment or costumes must be rented.

**Role-Play Disadvantages**

- Requires close monitoring by the instructor to ensure that the role-play is following a pattern toward the objectives of the lesson.
- Requires much time. Most role-plays are 7 to 10 minutes in duration with a critique that takes an additional 10 to 15 minutes.
- Requires the concentration and dedication of the students. The students must also understand the purpose of the role-play.

**Characteristic of a Good Role-Play**

- The instructor properly introduces the procedure and its objectives.
- The instructor introduces and explains the situation, careful to allow for the creative expression of the players.
- The instructor sets a climate in which the participants are comfortable enough to role-play and are not embarrassed or threatened.
- The instructor limits distractions that might break the concentration of the players.

5. **Gaming Method (Instructor/Group Directed)**

Gaming is a structured competition between two or more participants in a game. Each game has its own set of rules. Subjects can range from strategy to finance. Its uses include developing leadership skills, improving technical performance, foster cooperation and teamwork, improving decision making ability, evaluating learning.

Prior experience with the method is not required of students, but students must know the game rules and procedures. Content knowledge is a requirement when it is a fundamental component of the game.

Instructors should practice the game prior to using it in class. They must know the game rules and procedures and have content knowledge when it is a component of the game.

**Gaming Advantages**

- Motivates participants to be highly involved.
- Promotes interest and application of the learned material as well as fun.
- In days or weeks, provides the experience that would take years to gain on the job.
• Involves participants in the game and causes them to undergo the stresses associated with real-world situations.

• Adapts, in an infinite variety of ways, to all types of learning from orientation to experiential.

**Gaming Disadvantages**

• Requires proper construction to avoid placing participants in a win/lose or lose/lose competition.

• Requires a significant amount of time.

• Requires considerable research to ensure that the learning outcomes are achieved.

• Becomes expensive if computers are used because the cost can far outweigh the benefits.

**Characteristics of a Good Game**

• Fun and accomplishes the objective of the lesson.

• Instructor with the sound understanding of the method and the skill of a facilitator to accomplish the discussion after the game.

• Absorbs the players, but not to the extent that they forget the objective of the game.

• Involves a set of structured decision making tasks typical of a real-life situation, and provides a systematic means of observing and evaluating participants.

• Comprises 1 to 20 participants. The larger number can be organized into teams.

**6. Brainstorming Method (Instructor/Group Directed)**

Brainstorming is a problem-solving or problem determining situation in which participants are given a scenario and asked to bring into the discussion any ideas that come to mind, no matter how outlandish. All ideas are gathered and recorded, without assessment, before any are discussed. Idea gathering is usually limited to 5 to 15 minutes, followed by a discussion of the presented ideas. Normally, the instructor does not participate in the brainstorming session, but may serve as the recorder. Its uses include identifying a problem, developing novel or creative solution to problems, developing creativity, and stimulate participation by all group members.

Students must be familiar with the brainstorming rules and procedures. Content knowledge is required when content is an essential part of the brainstorm outcome. Instructors must be knowledgeable about brainstorming rules and procedures. They must have content knowledge when it is an essential part of the brainstorming activity.

**Brainstorming Advantages**

• Encourages problem identification and solutions.

• Breaks mind-sets and allows new approaches.

• Maintains interest because of the fast-moving pace of the session.

• Develops valuable ideas.

• Encourages participation by all the group members because of the accepting atmosphere.
**Brainstorming Disadvantages**

- Requires a **skilled instructor** to keep the session moving, the ideas coming, and to refrain from judging group-member responses.
- Requires the participants’ **understanding** of the process in order to maintain the productivity of the group.
- Requires a very **nonthreatening** environment.

**Characteristics of a Good Brainstorming Session**

- Group members are familiar enough with each other to create a trusting environment.
- Rules are well-explained to the group, and they understand the purpose and conduct of the session.
- Instructor is skilled in keeping the session moving and the ideas flowing.

7. **Lecture Method (Instructor/Group Directed)**

In his book *The Skillful Teacher*, Stephen Brookfield discusses how to “Lecture Creatively.” He says the lecture is the “most frequently abused” method of teaching adults. Fortunately, this does not have to be the case. Lecturing as a method of teaching does not necessarily equate to mind-numbingly boring, although some lecturers seem to assume their right to do just that. The content and dynamism of the lecture and the teacher’s approach to the learning objective can illuminate a subject even if a teacher lectures. The challenge teachers face is to make lectures as enlivening and critically stimulating as possible.

It is paramount for an instructor to be clear about why he or she chooses to lecture, and there are a handful of legitimate, acceptable reasons to lecture. For example, a lecture may be appropriate to establish the broad outlines of a body of material. A lecture may be an effective method to set guidelines for independent study. A teacher may use a lecture to model intellectual attitudes that are encouraged in students, or to set the moral culture for future discussions. A final reason to lecture may be simply to encourage the students’ interest in a particular topic.

One of the keys to a successful lecture is to research the audience, the students who are about to receive the benefit of the teacher’s wisdom and oration. Target audience analysis doesn’t have to be overly complicated, but it would be a mistake to deliver a lecture as if the audience were irrelevant. Their prior knowledge or experience, level of interest, and academic ability may all play a role in a teacher’s creative lecture.

The instructor should think about how to lecture, how long to be the sole voice in the classroom, and how much time to allow before asking for feedback or response from the class. A lecture should be paced so that there are not long periods in which the only sound in the classroom is the teacher’s voice. The average attention span for listening to an uninterrupted lecture is between 12 and 20 minutes; if a lecture is not punctuated with a break in the teacher’s delivery after about 15 minutes, the students will begin to mentally wander. A creative lecturer will ask a question, elicit some response from the class, do whatever it takes to re-focus the students’ minds on the themes to be addressed in the next portion of the lecture.

Without becoming overly dramatic or making students uncomfortable, a teacher should personalize the lecture as much as possible by drawing on examples from his or her own life that illustrate key points. Personalizing lectures serves three functions: (1) It helps provide familiar, accessible points of entry to what may be complex ideas; (2) It captures the attention of the class to see a possibly remote figure speaking in a personally revealing way; and (3) It helps to create
a sense of authenticity by speaking publicly about aspects of the teacher's life outside the role as an educator.

Feel free to use notes when lecturing; one or two pages should suffice. A lecture is not the same as unplanned, extemporaneous talking, even though it often may seem that way. Skeleton notes are carefully drawn up and depict an ordered and systematic progression of ideas. It communicates to the students that the teacher has thought about the path along which they are about to be taken. Many teachers use their slides as skeleton notes, a series of brief, perhaps bullet phrases that spark the next key thought or concept to be addressed. Skeleton notes have the advantage of allowing freedom to digress and to include personal anecdotes when they seem appropriate.

A creative lecture should include visual aids. Visual aids should supplement and add to the lecture, but not serve as a replacement for subject matter knowledge and effective public speaking skills. A picture, chart, or map may help the teacher illustrate a particular point in a way that no manner of description can ever achieve. A list of key points on a slide may help the students keep track of where the teacher is, what key point he or she is making, and how many more remain to be addressed.

In the lecture method, the instructor presents a formal or informal discourse such as a series of events, facts, concepts, or principles; explores a problem; or explains relationships. Students mainly listen and absorb the material that is directed toward them. A lecture informs. The instructor has information that he wishes to give verbally to the students. It may be used to orient students to policies, rules, procedures, purposes, or resources; introduce a subject; give directions on procedures; set the stage for a demonstration, exercise, or performance; illustrate situations; or review material.

Preparation for the lecture method includes students having knowledge of the content area or topic. The instructor must rehearse lectures and be knowledgeable about the content area or topic.

Lecture Advantages

- Saves **time** because large amounts of information from many sources can be presented in a short period.
- Permits **flexibility of class size.** The size of the class is limited only by the size of the facility. A lecture can be presented to 2 or 200.
- Permits **flexibility of space.** The area in which a lecture is presented is limited only by the number of students who hear the speaker.
- Permits **adaptability.** A lecture can easily be adapted to the needs of a specific group. The sequence, vocabulary, and examples can be altered to the appropriate educational level, training, and past experience of the group.
- Permits **versatility.** The lecture can be used for a variety of subjects, at any point in the course of training, and with any other method.
- Permits **control** over content and sequence. It can be presented within tight time constraints and with few distractions from the unnecessary material that can intrude when the instructor does not have direct control.
Lecture Disadvantages

- Involves only one-way communication. There is very little feedback in the lecture format. The instructor prepares and presents the information with little input from the students. This is the flipside of the control over content and sequence.

- Inhibits the teaching of skill objectives. Because it involves only one-way communication from the instructor to the student, it is ineffective in the teaching of a skill, especially a psychomotor skill.

- Inhibits the use of all the senses but hearing. Students become easily bored with a lecture because it appeals only to their sense of hearing. There usually is little visual stimulation, and no speaking participation.

- Inhibits student participation. Because the student is only required to listen, he/she assumes a passive attitude, which leads to mental distractions and inefficiency.

- Depends on the instructor's skills for its effectiveness.

Characteristics of a Good Lecture

- Instructor has good speaking skills.

- Keyed to the adult attention span. Usually no more than 20 minutes of uninterrupted speech and includes questions, supporting media, etc., before another lecture session begins.

- Organized with an introduction, body, and conclusion. The contents are organized to address the clearly stated objectives.

- Accompanied by media (when appropriate).

- Everyone can hear the lecture.

- Instructor provides opportunities for student questions.

- The use of an agenda or outline for the audience to use to make notes enhances the lecture.

8. Guest Speaker Method (Instructor/Group Directed)

This is a variation of the Lecture Method. Instead of the instructor providing the lecture, an expert is invited to speak on subjects appropriate to the program of learning. "Guest Speaker" is defined as a person who is not within the span of control of the commandant of the school. The instructor ensures that all speaker arrangements are made and that the speaker and the students understand procedures. Guest Speakers lend credibility to the curriculum, break the boredom of the same old faces, and bring in information that is not available from standard sources (such as latest techniques or what the job entails in the field).

Preparation is essentially the same for the student and the instructor: have content knowledge and information about the speaker.

Guest Speaker Advantages

- Provides expertise, not available within the school, in specific subject areas that are essential to the course of training and keyed to the school mission.

- Provides knowledge gained by extensive experience in a specific field of endeavor.

- Provides up-to-date information on new techniques, policy, doctrine, and practices.

- Influences student motivation by the presence of distinguished military or civilian dignitaries.
**Guest Speaker Disadvantages**

- Can add extra cost to course.
- Can be difficult to effect **coordination** with elements involved.
- Can be difficult to **control time elements** within the weekly class schedule.
- Takes control of lesson content away from the instructor.

**Characteristics of a Good Guest Speaker**

- The speaker is aware of the objectives and test questions, if any, related to the presentation.
- The speaker, after being briefed, understands what the school expects and information about the student audience.

**9. Study Assignment Method (Student Directed)**

In the Study Assignment method the instructor assigns readings in books, periodicals, manuals, or handouts. This method has two basic forms: (1) independent study in which the student carries out the assignment without an instructor or direct guidance, and (2) supervised study in which the student carries out the assignment with an instructor available for guidance and assistance. Uses include the following: orient students to a topic prior to classroom or laboratory work; set the stage for a lecture, demonstration, or discussion; provide for or capitalize on individual differences in ability, background, or experience through individualized assignments; review material covered in class or give the practice essential for the development of skills and problem solving abilities; and provide enrichment material.

Students must know timelines, assistance they can receive, and course procedures and requirements. Instructors must clearly define process and procedures to students.

**Study Assignment Advantages**

- Increases the **coverage** of material.
- Reduces classroom **time**.
- **Improves learning** because the student can practice on his/her own time to master the skill.
- Permits **individualized attention** with the supervised version.
- Reduces intermediary **interpretation** because the student can go directly to the source of the material.

**Study Assignment Disadvantages**

- Requires careful planning and follow-up.
- Poses an evaluation challenge because it is difficult to pinpoint a specific element that caused confusion or errors.
- Permits the **practice of errors** because if not corrected immediately, the student will continue as if right.
- Produces **nonstandard results** because of the variations in reading ability and motivation.
Characteristics of a Good Study Assignment

- Instructor plans and assigns work in such a way that the objectives are clear, the instructions lucid, and the motivation present.
- Instructor follows up on the assignment. Nothing will curb motivation faster than if the instructor makes an assignment then never discusses or collects it for grading or correction.
- Assignment provides, if possible, the means of practicing the knowledge or testing comprehension of the assigned material. For example, after a reading assignment, the student must answer questions.
- Instructor provides feedback as soon as possible on the assignment. It can be either in class or on the paper to be handed back. The assignment should be returned to the student at the next class, if not before.

TWENTY-FIVE ADDITIONAL METHODS OF INSTRUCTION

10. Compare and Contrast

Description: Comparing two things is telling how they are alike; whereas, contrasting two things is telling how they are different. It is a process where the act of classification is practiced.

Uses: Used to help learners distinguish between types of ideas or to group similar ideas, engage in critical thinking, and go beyond mere description or summary to generate analysis. It can be used to help learners identify language cues and gain a deeper understanding of the items being compared. It can also be used to facilitate indirect instruction through concept formation or concept attainment. It is often presented in either written text paragraphs or a chart. Its most common use is as a graphic organizer of content.

11. Concept Mapping

Description: A special form of a web-like diagram for exploring knowledge and gathering and sharing information. A concept map consists of nodes or cells that contain a concept, item or question and links. The links are labeled and denote direction with an arrow symbol. The labeled links explain the relationship between the nodes. The arrow describes the direction of the relationship and reads like a sentence.

Uses: Can be used to develop an understanding of a body of knowledge, explore new information and relationships, access prior knowledge, gather new knowledge and information, share knowledge and information generated, design structures such web sites and multi-media presentations, and problem solve options.

12. Conducting Experiments

Description: A methodical trial and error procedure of collecting observations or observing actions with the goal of verifying, falsifying, or establishing the validity of a hypothesis. Experiments vary greatly in their goal and scale, but always rely on repeatable procedure and logical analysis of the results. The instructor/facilitator asks leading questions and draws attention to interesting results.

Uses: Learning something new and discovering an explanation of why something happens. Promotes active learning to exploit natural curiosity. Experiments can be used to introduce
new ideas or to clarify puzzling aspects of topics with which learners typically struggle. Puts learners in a position to build ownership of the new idea and use it to scaffold learning.

13. Cooperative Learning Groups

**Description:** A method in which small teams, each with learners of different levels of ability, use a variety of learning activities to improve their understanding of a subject. Each member of a team is responsible not only for learning what is taught but also for helping teammates learn, thus creating an atmosphere of achievement. Learners work through the assignment until all group members successfully understand and complete it.

**Uses:** Provides learners with the tools to work in a collaborative environment. Elements of cooperative learning include positive interdependence, face-to-face interaction, individual accountability, social skills, and group processing.

14. Debate

**Description:** A structured contest of argumentation in which two opposing individuals or teams defend and attack a given proposition. The procedure is bound by rules that vary based on location and participants. The process is adjudicated and a winner is declared.

**Uses:** To engage learners in a combination of activities that causes them to interact with the curriculum. Debate forces the participants to consider not only the facts of a situation but the implications as well. Participants think critically and strategically about both their own and their opponent's position. The competitive aspects encourage engagement and a commitment to a position. Improve communication skills.

15. Demonstration

**Description:** Performing an activity so that learners can observe how it is done in order to help prepare learner to transfer theory to practical application.

**Uses:** Helps people who learn well by modeling others. Provides opportunity for targeted questions and answers. Allows attention to be focused on specific details.

16. Drill and Practice

**Description:** Drill and Practice, like memorization, involves repetition of specific psychomotor or cognitive skills (addition and subtraction, spelling, marksmanship). The skills built through drill and practice should become the building blocks for more meaningful learning. Drill and practice may also be found in more sophisticated learning tasks that involve more than one learner.

**Uses:** Helps the learner master materials at their own pace and is used as a reinforcement tool. Effective use of drill and practice depends on the recognition of the type of skill being developed, and the use of appropriate techniques to develop these competencies. Allows for transfer of knowledge from working memory to long-term memory.

17. Field Observations

**Description:** A method of observing and recording information through written notes, sketches, recordings, and photographs in a limited amount of time.

**Uses:** Uses a combination of observation and inquiry to collect information and see as many concrete behaviors as possible without filtering them through any interpretive process.
18. Field Trip/Site Visit

**Description:** Learners visit a place away from their regular environment to acquire information needed to support a specific learning objective. The instructor/guide may provide background material concerning the site.

**Uses:** Motivates participants and shows the relationship between provided information and the reality of the location. Provides a more hands-on and interactive experience, provides variety, and may spark new interests and passions.

19. Guided Reading and Thinking

**Description:** Learner’s comprehension of a selection is guided and developed by instructor/facilitator questions. The focus is on the use of context to predict meaning.

**Uses:** Enables learners to establish and verbalize purposes for reading. This method develops the learners’ story sense, and encourages learners to use past experiences such as their knowledge of language and context clues to aid comprehension.

20. Interactive Multimedia Instruction

**Description:** Interactive multimedia instruction (IMI). This term applies to a group of predominantly interactive, electronically-delivered instruction and instructional support products. IMI is a computer-based technology integrating a combination of, but not limited to, text, graphics, animation, sound, and video with which the learner interacts.

**Uses:** IMI products include instructional software and software management tools used in support of instructional programs.

21. Inquiry

**Description:** A method that provides learners opportunities to actively develop skills that enable them to locate, gather, analyze, critique and apply information in a wide range of contexts as they develop understanding.

**Uses:** This method can be used by individuals or small groups to develop research skills. A topic or question is identified and researched. Helps learners analyze the information, prepare reports, and present information.

22. Interviewing

**Description:** An interview is a structured conversation between two people (the interviewer and the interviewee) where questions are asked by the interviewer to obtain information. Preparation includes analyzing, deciding on a purpose, a topic, and the nature and methods of analysis that are appropriate.

**Uses:** This is a personal form of research where the interviewer has the opportunity to probe or ask follow-on questions. Helps the learner develop appropriate questions without bias or preconception. Evaluation of the interview responses improves analysis skills.

23. Laboratory Groups

**Description:** A group working together to solve a problem. Each problem begins by briefly stating the question or problem to be solved. The components of the problems are introduction to the problem, description of the equipment, a prediction of the outcome,
warm-up questions, exploration, measurement, analysis and conclusion. These components represent the process expert researchers use in a laboratory.

**Uses:** Working in groups makes instructing/facilitating more manageable as interaction occurs between the instructor/facilitator and five or six groups versus all individual learners. Learners in a group provide their thoughts which lead to discussions. The discussion tends to bring alternate conceptions to the surface for all participants to consider.

**24. Model Building**

**Description:** Involves the creation of models either from kits or from materials and components acquired by the builder.

**Uses:** Physical construction of a model helps the learner generate, visualize and evaluate ideas. Model building enhances creative thinking, and helps learners become more aware of their own meta-cognitive design strategies.

**25. Panel**

**Description:** A panel consisting of instructors/facilitators, guest speakers, or a combination discusses material pertinent to the learning objective. The panel presents information about a specific issue or topic, discusses their personal views, and responds to learner questions.

**Uses:** Provides a variety of views and opinions concerning material or a problem for which there is no one correct solution. Helps the audience further clarify and evaluate their positions regarding specific issues or topics being discussed and increases their understanding of multiple points of view.

**26. Peer-Partner Learning**

**Description:** Peer partner learning is a collaborative experience in which learners learn from and with each other for individual purposes.

**Uses:** Learners reflect upon previously taught material by helping peers to learn and, at the same time, develop and hone their social and communication skills.

**27. Problem Solving**

**Description:** Focuses on knowing the issues, considering all possible factors and finding an acceptable solution. Because all ideas are accepted initially, problem solving allows for finding the best possible solution as opposed to the easiest solution or the first solution proposed. Defining what the problem looks like is separated from looking at the cause of the problem to prevent premature judgment. Clarifying what makes an acceptable solution is defined before solutions are generated, preventing preconceptions from driving solutions.

**Uses:** Used to help learners think about a problem without applying their own pre-conceived ideas. Used to help learners consider second and third order effects of the proposed solution(s). Learners think about a problem within a set of parameters.

**28. Reflective Discussion**

**Description:** The instructor/facilitator initiates a discussion by asking a question that requires learners to reflect upon and interpret films, experiences, read or recorded stories, or illustrations. The questions posed should encourage learners to relate story content to life experiences and to other stories.
Uses: Allows the learner to gain knowledge through their experiences, analysis, imagination, affect, and impression -- Reflection. Reflective discussions encourage learners to think and talk about what they have observed, heard, or read.

29. Seminar

Description: A small, focused group of people who come to talk and learn about a particular topic. Issues are discussed, questions raised, and debates conducted. Seminars often begin with a presentation by a subject matter expert who then facilitates discussion.

Uses: Seminars place the focus on the input of all the seminar participants to: familiarize participants more extensively with the methodology of their chosen field, allow participants to interact with practical problems that could commonly occur, and provide a broader perspective of a particular topic.

30. Simulation

Description: Any representation or imitation of reality simulating part of a system, the operation of a system, and the environment in which a system will operate are the three common types. There are virtual and constructive simulations.

Uses: Replaces/complements live training. Provides the means to safely practice an action or activity under any condition. Can be used for individual training and education (such as repairing equipment or gunnery) or unit training (such as fighting a tank or tank company). May be used on a single computer or station, distributed over a local area network, or used on a wide area network to multiple simultaneous users.

31. Story Telling

Description: The conveying of events in words, images, and sounds, often by improvisation or embellishment.

Uses: Provides a means of sharing and interpreting experiences. Storytelling can be used as a method to teach ethics, values, and cultural norms and differences. Stories provide a tool to transfer knowledge in a social context. They increase verbal proficiency and encourage the use of imagination and creativity.

32. Structured Overview

Description: Verbal, visual, or written summary or outline of a topic. It can occur at the beginning of a unit, module or new concept, or it may be used to help relate a learned idea to the big picture. A Structured Overview distills a difficult or complex idea into simple definitions or explanation, and then shows how all the information relates. It is the process of “organizing and arranging topics” to make them more meaningful.

Uses: Helps learners place new ideas in context. Because ideas are simplified, it is easier for learners to see “the big picture”. In addition, connecting new ideas to information learners already understand makes it easier to retain.

33. Tutorial

Description: A form of remedial or introductory assistance provided to a learner or small group of learners with maximum learner interaction.
Uses: Develops or enhances skills, develops effective study habits, increases self confidence, and increases the learners understanding of the subject matter.

34. Writing Assignments

Description: Writing assignments can have a broad range of styles. A writing assignment succeeds by addressing a defined audience with content organized into an effective and/or convincing presentation. For example, the learning log has a different purpose, components and style than an essay; a report has a different purpose, components, and style than a white paper. Forms of writing may include essays, journals, learning logs, reports, and narratives.

Uses: Improves writing skills and requires critical thinking about the subject, purpose, and the audience. Organizes thoughts, allows for communicating effectively, conceptualizing ideas, convincing others, increasing meta-cognition, and identifying critical information.
Appendix I

THE POWER OF THE CONCRETE EXPERIENCE

OVERVIEW

This chapter will describe how to enhance student learning through the use of a concrete experience that establishes a sound foundation on which new knowledge can be constructed. Used effectively, the concrete experience motivates students to learn, and provides a common reference to integrate and reconcile their diverse life experiences and perspectives. Additionally, it serves as a touchstone to connect new information to past experiences in a meaningful and enriching way that helps students achieve higher cognitive levels of learning and promotes longer-term retention of critical, life-or-death knowledge requirements for such audiences as medical professionals, emergency responders and the military.

Theoretical Foundation

Numerous authorities have highlighted the significant role of experience in the education of adults. Lindeman (1961) Knowles (1970), and Mezirow (1981) underscored the influence of experience in adult learning. Kolb (1984) incorporated the perspectives of Dewey (1938), Piaget (1972), and Lewin (1952) into his experiential learning model. Jarvis (1987) offered a more comprehensive model that accommodated learning and non-learning effects of experience, as well as reflective and non-reflective aspects of experiential learning. The US Army recognizes the tremendous value of experiential learning to prepare officers for the complex and ambiguous challenges that face these officers in their future leadership roles. In graduate-level educational programs for intermediate and senior-level leaders, US Army schools, centers, and service colleges use an experiential learning model based on the Kolb model. The concrete experience begins the learning cycle by “unfreezing” students from their held perspectives (Lewin, 1952), providing an “impulse” to trigger learning (Dewey, 1938) and providing a basis for reflective observation (Dewey, 1938; Lewin, 1952; Piaget, 1972; and Kolb, 1984) on which new knowledge can be assimilated or accommodated (Piaget, 1972) into their meaning schemata.

Key Ideas

1. A concrete experience contributes to student motivation to learn.
2. A concrete experience provides a common reference to integrate and reconcile the diverse experiences and perspectives of students.
3. A concrete experience serves as a touchstone to connect new information to past experiences.
4. A concrete experience promotes learning at higher cognitive levels.
5. A concrete experience helps improve retention of essential or critical knowledge.

EXAMPLES OF CONCRETE EXPERIENCES

A good concrete experience sets the stage for the students' learning by engaging them on an affective or emotional level. It provides a setting through which the student connects to a past, present, or anticipated future experience. It helps create a concrete connection with the lesson content, establishing a firm foundation on which to build abstract concepts involving higher-order cognitive learning levels. The concrete experience should provide students with an opportunity to personally and individually reflect on a situation or event. This could be a brief video clip, a picture, a practical exercise, a story, or a role play scenario.
Video Clip

*Concrete experience* for Media or Communications class: In the original *Bob Newhart Show*, psychologist Dr. Bob Hartley is interviewed for a television talk show. The talk show host, Ruth Corley, assures him that the interview will be painless and then introduces him:

"I'm with psychologist Dr. Robert Hartley. It's been said that today's psychologist is nothing more than a con man, a snake oil salesman peddling cures for everything from nail biting to a lousy love life and I agree. We'll ask Dr. Hartley to defend himself after this message."

The host then proceeds to attack Bob's credibility and asks questions for which Bob clearly was not prepared to answer: “How much do you make?” “Do you cure anyone?” and “Who are your patients?”

Students easily connect with the experience of Dr. Hartley, perhaps recalling their own experiences in similar situations, or imagining themselves in similar situations in the future.

Picture

“A picture is worth a thousand words.” Present a single image or a series of images that depict a situation that will evoke an affective or emotional response from student. While the image itself may not directly connect to the specific content in the lesson, the ideas or concepts that the image conjures for the students should connect logically to the lesson content. For example, an image of an aircraft accident could certainly be used to set the stage for a lesson on an aspect of aircraft maintenance; however, used creatively, it could also lead into a lesson on planning, or on leadership, or a number of other topic areas that, if executed poorly, could result in the image that the students are shown in the *concrete experience*.

After the students have been given time to internally process the *concrete experience*, having the group members share their perspectives can enhance the power of the *concrete experience* by causing students to reconcile their own views with those of their classmates.

Practical Exercise

Journalism 101 (Heath & Heath, 2008): On their first day in a high school journalism class, students were asked to write the lead for a newspaper story based on the following facts:

Kenneth L. Peters, the principal of Beverly Hills High School, announced today that the entire high school faculty will travel to Sacramento next Thursday for a colloquium in new teaching methods. Among the speakers will be anthropologist Margaret Mead, college president Dr. Robert Maynard Hutchins, and California governor Edmund "Pat" Brown. (p. 75)

Students diligently worked on their stories to include all of the relevant facts as concisely as they could—who, what, where, when, and why. They then turned them in to the teacher who scanned through them, confirming that they had all missed the real lead: “*There will be no school next Thursday.*” (p. 76)

In this *concrete experience*, students were exposed to a current experience that creates a personal sense of value for the lesson content that will follow.

Story

“A story is powerful because it provides the context missing from abstract prose.” (Heath & Heath, 2008, p. 214) It can affectively engage the students in the learning by creating an unexpected concrete connection with the lesson content. A history professor might prime his or her students for a lesson addressing the Allies attack on Gallipoli during World War I. The professor might begin by having the students close their eyes and imagine that they are in one of
the troop landing boats making their way to shore as the barrage of enemy fire is already upon them. The professor could proceed to describe sounds of the artillery fire, the motion of the round-bottomed boat in the choppy seas, and the smells of the sweat and vomit that fills the cramped space.

The professor should allow the students sufficient time to contemplate their imagined world before asking them to comment on such things as what would the ANZAC soldiers be thinking, how would they be acting, and how would that affect their actions when they reached the beach.

**Role-play scenario**

Role-playing is an effective way to cause students to examine issues from other perspectives. As a *concrete experience*, a role-play can elevate the affective state of the students, and can lead to higher-order critical thinking by forcing the students to examine a situation from a perspective different from their own. For example, students could be asked to role-play a counseling session or to participate in a mock interview. After they participate in the *concrete experience*, the instructor should allow the students time to reflect on what happened before asking them to share with their classmates. These scenarios can help students recognize the learning value of the lesson content that will follow and can increase their intrinsic motivation to learn.
Appendix J

READING LEVELS AND HOMEWORK TIME REQUIREMENTS

INTRODUCTION

This appendix helps determine the reading difficulty of course material and provides guidelines for homework assignment time requirements. Computer programs may be used to measure the reading grade level (RGL) of assigned materials; however, ensure the program is compatible with the Kincaid Readability Formula.

COMPLIANCE WITH THE ARMY READABILITY PROGRAM

After you identify the printed material for your course, determine its readability. CGSC uses the Kincaid Readability Formula. If you do not have the computer program to measure the RGL of your homework assignments, use the following formula.

STEP 1: Select a passage of at least 150 words. Continue counting through the end of a sentence.

STEP 2: Figure the average sentence length. (Divide the number of words by the number of sentences.)

STEP 3: Figure the average number of syllables in each word. (Count the syllables. Divide the number of syllables by the number of words.)

STEP 4: Compute the RGL using the following formula: \( \text{RGL} = \frac{\text{words per sentence} \times 4}{\text{syllables per word} \times 12} - 16 \).

Army instructional material should be written or selected with consideration of the students’ total day including hours in class, outside reading, group work requirements, and other course requirements.

GUIDELINES FOR DETERMINING READING ASSIGNMENT TIME REQUIREMENTS

<table>
<thead>
<tr>
<th>HOMEWORK ASSIGNMENTS</th>
<th>READING RATE (Words per Minute)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Study</td>
<td>120</td>
</tr>
<tr>
<td>Read</td>
<td>250</td>
</tr>
<tr>
<td>Review</td>
<td>460</td>
</tr>
<tr>
<td>Scan</td>
<td>750</td>
</tr>
</tbody>
</table>

The rate at which a student can read materials depends on many factors, including familiarity with the subject, reading skills of reader, complexity of materials, interest of reader, etc. The following information provides guidance as you determine the length of time required to accomplish assigned readings.

**Study** Material of primary importance for a lesson. Reading rate is based on 120 words per minute as study includes more than just reading. It includes pausing, organizing, outlining, etc., which decreases the reading rate. Keep in mind that common sense applies. Reading 120 words of
Clausewitz is not equal in homework time to reading 120 words of Hemingway. You should adjust accordingly.

**Read**
Material of secondary importance for a lesson when assigned with “study” material. It is of primary importance when “study” material is not assigned. Reading rate is based on 250 words per minute.

**Review**
Any material previously assigned as either “study” or “read.” This category shows students a link to associated material supporting the current assignment. Reading rate is approximately 460 words per minute.

**Scan**
Includes any material not evaluated, but meant for student awareness. Reading rate is approximately 750 words per minute. Often students do not consider this material important. Scan should be used sparingly.

**HOW TO DETERMINE TIME REQUIRED FOR READING ASSIGNMENT**

**STEP 1:** Count the number of words on a typical page.

**STEP 2:** Multiply that number by the number of pages to determine the total number of words.

**STEP 3:** Divide total number of words by the appropriate reading rate listed above (e.g., 750 for scan). This will give the time required to complete that segment of the assignment.
Appendix K

SAMPLE LESSON PLAN
THE ARMY UNIVERSITY
(School and Course)
(Course Number and Title)
(Lesson Number and Title)

Lesson Plan for Lesson X###
Title of Lesson

Course Author: LTC/MAJ/Ms./Mr.
Lesson Author: LTC/MAJ/Ms./Mr. First Last
Date prepared: Month XX, XXXX

1. SCOPE

As a key focus, the lesson outcome should appear first in the scope paragraph. It should not be the same as the learning objectives listed below in Paragraph 2 (Learning Objectives). It should read something like, “The outcome of this lesson is to help students understand how the national security strategy is analyzed and developed.” Additionally, the scope paragraph should cover the way in which this individual lesson fits with the other lessons in the module and integrates with lessons in other blocks and modules. Also, refer to related topics that do NOT need to be covered in this lesson because they are covered elsewhere in the course. This is the appropriate place to specify content for which instructors and students are accountable, and to include the author’s intent. It’s best to explain the author’s rationale here to help set the stage for conducting the lesson. In addition to lateral (horizontal) integration, any vertical integration to content in other CGSC schools should be noted.

The scope highlights the linkages between the skills identified in the advance sheet and the behaviors emphasized in the lesson. The scope describes the lesson objective in terms of end states and (how) the selected behaviors support, and are supported by, the terminal learning objectives (TLOs). Consider the following questions: How does the performance of this behavior make a qualitative difference in the outcome of the task? What are the linkages between the performance of the task and the expectations of professional military leadership as described in doctrine or by standards acceptable to the profession?

2. LEARNING OBJECTIVES

Reference the TLO and list the ELO(s) (if there is no ELO then list the TLO) using the format below. Example:

This lesson supports TLO ##, “action statement,” as listed in the Course Advance Sheet

TLO or ELO #. # (Terminal or Enabling Learning Objective Number)
Action: Analyze the complex security environment. THIS IS AN EXAMPLE.
Condition: Using readings, references, and class notes
Standard: Analysis includes—
1. The interrelationships among a nation’s values, interests, objectives, policies, programs, and commitments influence national strategy.
2. Relationships identifying essential strategic information.

Learning Domain: Cognitive
Level of Learning: Analysis
**JPME I Learning Areas Supported:** JPME 1 learning areas are listed in the Officer Professional Military Education Policy (OPMEP), CJCSI 1800.01D, 15 July 2009. There are five joint learning areas with objectives for each. The five areas for JPME I include:

1. **National Military Capabilities and Command Structure and Strategic Guidance** (includes six objectives)
2. **Joint Doctrine and Concepts** (includes four objectives)
3. **Joint and Multinational Forces at the Operational Level of War** (includes six objectives)
4. **Joint Planning and Execution Processes** (includes six objectives)
5. **Information Operations (IO), Command and Control (C2) and Battlespace Awareness** (includes four objectives)

See pp. E-C-1 through E-C-3 of CJCSI 1800.01 C for objectives for each learning area. The objectives that pertain to the lesson objectives should be listed with the learning level in the lesson plan. It’s important here to associate army outcomes with joint learning areas. If the learning objectives relate to the joint area, then include a JPME learning area in the lesson.

**EXAMPLE:**

4e. Comprehend the fundamentals of campaign planning.

**JPME I learning areas apply to the Common Core lessons for JPME I certification purposes. There is no requirement for AOWC / JAWS or SCP and SAMS to list JPME areas.**

3. **ASSIGNED STUDENT READINGS:** See Lesson Advance Sheet X###.

4. **INSTRUCTOR ADDITIONAL READING(S)/MATERIAL:**

List as much bibliographic citation material as possible so the editors have appropriate, sufficient data to put the citation in the proper format or do the required research. See detailed guidance on advance sheet job aid. The author must include the total number of pages assigned as was done in the Advance Sheet.

**Example:**


5. **TRAINING AIDS**

Identify suitable media to be used, and list appendices as appropriate. The first appendix (Appendix A) will always be the Assessment Plan, and is also included as Appendix A in the Lesson Advance Sheets. Appendix B is always PowerPoint slides. After that, appendices should be lettered in the same order as their first appearance and reference within the lesson plan. If the author wants the reference to the appendix linked to the appendix, please indicate in the text. It is not necessary to link every occurrence of the appendix. The first mention is usually sufficient. List everything an instructor will need such computer equipment, PowerPoint Slides, and/or white board, and markers etc.

Appendix A: Assessment Plan
Appendix B: Slides
Appendix C: Newburgh Address, Whiteboard Screen,
PC Availability for Students
Note: If the author is developing the lesson plan for the TASS classroom, then list all required training aids, to include: software, textbooks, copy paper, and butcher paper, etc.

Note: Eliminate the AUTHOR’S INTENT paragraph – This paragraph will no longer be a separate paragraph. The author’s intent should be included in the scope paragraph of the lesson plan.

Note: Eliminate the LINKS TO OTHER PARTS OF THE CURRICULUM paragraph – This paragraph will no longer be a separate paragraph. Like the author’s intent, the link to other parts of the curriculum should be included in the scope paragraph of the lesson plan.

6. CONDUCT OF LESSON
(In narrative form. Elements may be repeated as often as necessary using sequential lettering.)

a. Lesson Timeline:
In addition to content/topic descriptors, make sure each element of the Experiential Learning Model (ELM) is listed each time it is used throughout the lesson. Time should be expressed in minutes. Include break times in the lesson timeline.

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>Concrete Experience: The World Environment</td>
</tr>
<tr>
<td>20</td>
<td>Publish and Process</td>
</tr>
<tr>
<td>45</td>
<td>Generalize New Information: Range of Military Operations</td>
</tr>
<tr>
<td>10</td>
<td>Break</td>
</tr>
<tr>
<td>10</td>
<td>Develop</td>
</tr>
<tr>
<td>20</td>
<td>Apply: MOOTW Environment/Doctrine/Summary</td>
</tr>
</tbody>
</table>

Instructor Note: The format for instructor notes is that the words, Instructor Note: are bold, italics with the I and N capitalized. The note itself begins one space after the colon in sentence format and is in italics. Instructor Notes are located at the left margin. Throughout the conduct of the lesson, questions that are to be directly asked of students are to be boxed, left justified, in bold italics. Questions are the only place in the lesson plan where it is acceptable to use the words you or your. There is no limit to the number of Instructor Notes, so the author should use them whenever they are appropriate. Remember – these notes help instructors accomplish the learning objectives.

In order to use this format, do you know how to insert a 1 row, 1 column table that is at the left margin and set to AutoFit to window?

b. Concrete Experience: (# minutes). This step in the ELM (see Instructor Preparation Phase I materials) is especially important with adult learners. As a course author, you should ask yourself “How will this activity move students into the affective domain?” Students should be involved personally and might also interact with their classmates. The CE is student-centered and the instructor should be observing, not an active participant. The behavior selected as part of the ELO may be evident in several activities embedded within the ELM process. You should attempt to make this a short concrete experience, say 5-10 minutes. A CE is not the same as a PE. You should not tell the students, “This is a concrete experience.” Just offer an experience for them and move on to Publish and Process.

c. Publish and Process: (# minutes). Remember: This phase is student-centered and instructor facilitated. As the lesson author, you should list open-ended questions that will help the student reflect on what happened in the CE and what type of reaction they had during the experience. The instructor should be guided by the type of questions the author embeds in the lesson materials to help participants...
begin to see value in what they are about to learn. The instructor should also be looking for responses that will help the participants transition to the GNI (some examples could be listed as instructor notes).

Make sure instructors remind students of lesson objectives as they transition from the P & P into the GNI, even though the objectives are included in the student advance sheets. Include a description of the major learning activity. This is the place to have instructors stimulate recall of relevant prior knowledge, use an attention getter, motivator, and/or advance organizer.

d. Generalize New Information: (# minutes). The transition from P&P to GNI includes a quick reminder about the focus of the lesson. Ensure students are reminded of lesson objectives during this transition, even though the objectives are included in the student advance sheets. This is the place in which the new information is provided, built, or created. It should consist of approximately 50% to 60% of the lesson timeline. Students should be gathering information, taking notes, discussing study questions linked to the assigned readings, and/or listening. GNI can be instructor-centered; however, instructors can use multiple teaching methods and other creative ways to build, create or provide new information. Many of these creative methods to create the learning environment are student-centered and instructor-guided. It is appropriate to use Classroom Assessment Techniques (CATs) as formative assessments throughout this section of the lesson.

<table>
<thead>
<tr>
<th>Slide 1, Fundamentals of Warfighting.</th>
</tr>
</thead>
<tbody>
<tr>
<td>If embedded PowerPoint slides are used, they should be embedded as 3.07” width proportional thumbnails within the conduct of the lesson and attached as Appendix B. The lower row of this table needs to be sized to be at least 2.5” in height. Brett Schroeder, Flint Hall Distance Learning Team, can provide training on this technical skill.</td>
</tr>
</tbody>
</table>

Note: For Slide 1, Fundamentals of Warfighting:
- If embedded PowerPoint slides are used, they should be embedded as 3.07” width proportional thumbnails within the conduct of the lesson and attached as Appendix B. The lower row of this table needs to be sized to be at least 2.5” in height. Brett Schroeder, Flint Hall Distance Learning Team, can provide training on this technical skill.

e. Develop: (# minutes). **This phase is student-centered and instructor facilitated.** Let students decide (or discover) how they will use the information (not tell them how they will use it). Students could be doing adaptive (critical and creative) thinking, which is a leader behavior. Brainstorming is a good activity to use in this step as it asks more open-ended questions. This is the appropriate time to reinforce the content that the instructor expects will be demonstrated in the application or assessment.

f. Apply: (# minutes). **This phase is student-centered.** This step can be the practical exercise or other assessment to determine whether the standards of the learning objective have been met. Once again, the instructor should be an observer and should plan for feedback. After delivering the feedback, make sure there is time and/or an activity to allow students to reach closure on the lesson’s topic.

If this lesson employs a delayed assessment (say a Practical Exercise that is part of a subsequent lesson or is a lesson that is at the end of the block), use of a CAT that allows students to reach closure on this portion of the learning could be appropriate.
7. **ASSESSMENT PLAN**: (See Appendix A.) In addition to CATs provided throughout the conduct of the lesson, make sure the same information about those opportunities for formative assessment (the occasions the instructor has to give students informal feedback) is compiled here for the instructor’s review. If peer feedback were part of this equation (for example, during Socratic questioning or the AAR), drawing attention to it again would be appropriate. The instructor should specifically define the definitions of their grades for any assessed piece of the lesson. For example, they should define what a student has to do in a practical exercise to earn an “A.” If they expect each student to play a leadership role, provide details of those expectations in the assessment plan. All of the assessment products (exams, rubrics, quizzes, writing assignments and specifics about assessing, etc.) should be provided in this Appendix. This is the part of the lesson plan where the author should consider behaviors in assessing products and performance. It is crucial that the author provide as much detail as possible about the assessment plan.
THE ARMY UNIVERSITY
(School and Course)
(Course Number and Title)
(Lesson Number and Title)

Appendix A
Assessment Plan

This assessment plan has changed from the previous Appendix A, so make sure you use the corrected Assessment Plan. You can copy and paste the assessment information from the Lesson Advance Sheet Template. Since the audience of the advance sheet is the student, the only difference between the wording of this appendix and Appendix A to the advance sheet is the use of second person to directly address the student. The assessment plan here should be very detailed. It should first list the specific lesson components or requirements comprising the students’ assessment. Then, in subsequent paragraphs, each of these specific requirements should be fully explained. Appropriate rubrics should be included within the appendix as necessary.

The following is an EXAMPLE lesson assessment plan:

Part of your performance for the complete XXXXX XXXXXXX Block is assessed in this lesson through the following:

- Campaign Concept Briefing (Group) consists of xx% of the overall C300 Block grade (See Rubric for Details – Author will create or develop a rubric that specifically and appropriately explains what the student must do to receive credit – This must be tied to the Learning Objective).
- Class Participation consists of xx% of the overall C300 Block grade (Again see rubric for specifics regarding what constitutes successful participation).

Campaign Concept Briefing (Group) xx%: The JTF Campaign Concept briefing is the culminating event of the Operational Studies block, drawing all previous operational lesson materials into the student briefing. In this briefing, each student must demonstrate an understanding of the relationship between campaign planning, deliberate planning, and crisis action planning. He/she must discuss the linkages between strategic aim, military end state conditions, operational objectives, sequence of actions, application of resources; the application of elements of operational art focusing on centers of gravity, decisive points, and culmination; and the synchronization of operational level tasks and joint forces. A suggested outline for the Commander's Campaign Planning Briefing is found at Appendix C.

Class Participation (Individual) xx%: Instructors assess each student’s demonstrated understanding of the course material and his or her ability to develop and deliver cogent arguments or relevant insights from course material in a clear and concise fashion. Students demonstrate their knowledge, skill, and ability through the quality and focus of their discussion comments and questions, their preparation for class, their ability to reason critically and to think creatively, their performance during practical exercises and case studies, and contributions to group work. Class participation is assessed on a daily basis. Specifically for this lesson, instructors focus on the following leader behaviors: seeks and is open to diverse ideas and points of view, and conveys thoughts and ideas to ensure shared understanding. See Appendix A, FM 6-22 Army Leadership.

K-9
Rubrics outlining the standards for these leader behaviors are included as part of this annex. See CGSC Form 1009.

Follow this cover sheet with customized 1009s or other appropriate rubrics.

In the event that there are no summative assessments during this lesson, this appendix must still include the formative assessments used in the classroom to include guidance detailing the use of formative assessment methods, tools, activities etc.

**Final Note:** All courseware should be written in font Times New Roman, size 11 and slides should be prepared in font Arial, size 11. Format is Normal and flushed to the left margin.
Example:

<table>
<thead>
<tr>
<th>Slide Number</th>
<th>Description/Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slide 1</td>
<td>Operational Block: JTF Campaign Concept Format</td>
</tr>
<tr>
<td>Slide 2</td>
<td>Campaign Concept Format I and II</td>
</tr>
<tr>
<td>Slide 3</td>
<td>Campaign Concept Format III</td>
</tr>
<tr>
<td>Slide 4</td>
<td>Campaign Concept Format III</td>
</tr>
<tr>
<td>Slide 5</td>
<td>Campaign Concept Format III</td>
</tr>
<tr>
<td>Slide 6</td>
<td>Campaign Concept Format III</td>
</tr>
<tr>
<td>Slide 7</td>
<td>Campaign Concept Format III</td>
</tr>
<tr>
<td>Slide 8</td>
<td>Campaign Concept Format IV</td>
</tr>
<tr>
<td>Slide 9</td>
<td>Campaign Concept Format V</td>
</tr>
</tbody>
</table>
Appendix L

SAMPLE ADVANCE SHEETS
THE ARMY UNIVERSITY
(School and Course)
(Block/Module Number and Title)

BLOCK/MODULE ADVANCE SHEET

1. SCOPE
   a. For block or module advance sheets, the scope paragraph discusses the overarching concept of the block or module and how the lessons integrate with each other to achieve the block or module objectives. The scope may also refer to related topics that do not need to be covered in this module because they are covered elsewhere in the course. This is the appropriate place to specify content for which instructors and students are accountable. In addition to horizontal integration within the course, any vertical integration with content in other blocks or modules should be explained. This scope paragraph includes the terminal and enabling learning objective(s) that is (are) tied to the course objective(s). The objectives further serve as the link to the specific skills and behaviors that are to be emphasized.
   b. The following is an EXAMPLE module scope paragraph illustrating the information and linkages discussed above:

   XXX000 Deploy the Force / Posture the Force to Fight module builds on the study of higher levels of war that began in the C200 Strategic Studies block and continues to develop in the C300 Operational Studies block. This module fosters an understanding of the broad framework guiding joint, multinational, and interagency operations by highlighting the operational art of campaign planning. It stresses your ability to perceive, understand, and resolve military challenges at the strategic and operational levels. The C310 Module has two objectives. The first objective is to promote an understanding of systems planning. The second objective is to encourage an understanding of the challenges facing an organizational leader in a nonlinear, dynamic environment. Seminal to achieving these objectives is mastering five essential field grade leader skills. Specifically, your: Understanding Systems, Communication skills, ability to operate within an Established Intent, understanding Doctrine, and your ability to Predict Effects are the cornerstones of this Module.

2. LEARNING OBJECTIVES
   a. List TLOs and ELOs. The learning objectives are vital for an officer’s understanding of the course. Performing the actions to standard provides the conduit for accessing skills and behaviors. Skills and behaviors are the building blocks that guide the development of military leaders. How well these skills and behaviors are performed differentiates the successful leader from the exemplary leader. List the Learning Objectives using this format:

   TLO #.
   Action: Verb form of action word. Example: “Analyze national-level strategy.”
   Condition: Using readings, references, and class notes.
   Standard: Noun form of action verb. Details of expected learning outcomes should be detailed here.
   Example: Analysis will include—
   1. The complex security environment.
   2. Sources of power available to a nation.
   3. The processes and tools employed by Army strategic leaders.
4. Defense planning systems.
5. Relationship among the National Security Strategy, the National Military key DOD documents, and combatant command strategies.

Learning Domain: Cognitive
Level of Learning: Analysis

JPME I Learning Areas Supported: Example:
1a. Comprehend the capabilities and limitations of US military forces.
1b. Explain the organizational framework within which joint forces are employed.

3. MODULE ASSESSMENT PLAN. Assessment requirements may be addressed here if they can be described simply and concisely. In most cases, it will also be necessary to provide detailed assessment plan guidance in Appendix A. If Appendix A is included in the advance sheet, include a reference statement here (e.g. See the assessment plan for the block advance sheet above.)

4. ISSUE MATERIAL. See individual lesson advance sheets.

5. ADDITIONAL MODULE REQUIREMENTS. This can be preparatory reading, papers, activities, or homework that must be submitted prior to or at the first class meeting.
Appendix A
Assessment Plan

The assessment plan here should be very detailed. It should first list the specific lesson components or requirements comprising the students’ assessment. Then, in subsequent paragraphs, each of these specific requirements should be fully explained. Appropriate rubrics should be included within the appendix as necessary.

The following is an EXAMPLE lesson assessment plan:

Part of your performance for the complete XXXXX XXXXXXX Block is assessed in this lesson through the following:

- Campaign Concept Briefing (Group) consists of xx% of the overall C300 Block grade (See Rubric for Details – Author will create or develop a rubric that specifically and appropriately explains what the student must do to receive credit – This must be tied to the Learning Objective).
- Class Participation consists of xx% of the overall C300 Block grade (Again see rubric for specifics regarding what constitutes successful participation).

**Campaign Concept Briefing (Group) xx%**: The JTF Campaign Concept briefing is the culminating event of the Operational Studies block, drawing all previous operational lesson materials into the student briefing. In this briefing, each student must demonstrate an understanding of the relationship between campaign planning, deliberate planning, and crisis action planning. He/she must discuss the linkages between strategic aim, military end state conditions, operational objectives, sequence of actions, application of resources; the application of elements of operational art focusing on centers of gravity, decisive points, and culmination; and the synchronization of operational level tasks and joint forces. A suggested outline for the Commander’s Campaign Planning Briefing is found at Appendix C.

**Class Participation (Individual) xx%**: Instructors assess each student’s demonstrated understanding of the course material and his or her ability to develop and deliver cogent arguments or relevant insights from course material in a clear and concise fashion. Students demonstrate their knowledge, skill, and ability through the quality and focus of their discussion comments and questions, their preparation for class, their ability to reason critically and to think creatively, their performance during practical exercises and case studies, and contributions to group work. Class participation is assessed on a daily basis. Specifically for this lesson, instructors focus on the following leader behaviors: seeks and is open to diverse ideas and points of view, and conveys thoughts and ideas to ensure shared understanding. See Appendix A, FM 6-22 Army Leadership.

Rubrics outlining the standards for these leader behaviors are included as part of this annex. See CGSC Form 1009.
Follow this cover sheet with customized 1009s or other appropriate rubrics.

In the event that there are no summative assessments during this lesson, this appendix must still include the formative assessments used in the classroom to include guidance detailing the use of formative assessment methods, tools, activities etc.

**Final Note:** All courseware should be written in font Times New Roman, size 11 and slides should be prepared in font Arial, size 11. Format is Normal and flushed to the left margin.
1. SCOPE

a. The scope paragraph discusses the manner in which this individual lesson fits with the other lessons in the module and block, and integrates with lessons in other blocks and modules. It also refers to related topics that do not need to be covered in this lesson because they are covered elsewhere in the course. This is the appropriate place to specify content for which instructors and students are accountable. In addition to horizontal integration, any vertical integration to content in other CGSC schools should be noted. It should include the lesson objective that is tied to the module and block objectives. The lesson objective serves the key function of linking identified skills (from the block and module advance sheets) to specific leader behaviors listed in Appendix A, FM 6-22 Army Leadership.

b. The lesson objective is the responsibility of the lesson author with oversight from his or her module chief. The objective is developed in collaboration with the other lesson authors who are responsible for courseware within the same module. The lesson objective listed in the Scope paragraph is not the same as the learning objectives (TLOs/ELOs) listed in the courseware. Lesson objectives are, in a sense, the aggregate of the terminal learning objectives and the desired student outcomes for a given lesson. These objectives help answer the question: “What is it we want the student to understand, or what skills do we want students to have as a result of completing this lesson?” Lesson objectives must be supportive of the module objectives and other lesson objectives, and they must describe an end state for the student. Lesson objectives are discussed in terms of leader behaviors that are addressed in the module objectives. Lesson objectives and leader behaviors are developed as a result of conducting an analysis of the leader skills listed in the block/module objectives, the terminal learning objectives listed in the lesson material, and the learning activities that have been crafted for that particular lesson. Lesson objectives themselves cannot be cut and pasted from the block/module objectives. They are specific to a lesson. The sentence(s) describing the lesson objective are the bridge to the content. Being able to succinctly describe and make the logical connections between curriculum content and leader behaviors is fundamental to the course curriculum.

2. LEARNING OBJECTIVES

Reference the TLO and list the ELO(s) (if there is no ELO then list the TLO) using the format below. ELO(s) will only be listed in lesson advance sheets and lesson plans, not in block or module advance sheets. Example:

This lesson supports TLO ##, “action statement,” as listed on the Block Advance Sheet

ELO #.# (Enabling Learning Objective)
Action: Example: Analyze the complex security environment.
Condition: Using readings, references, and class notes.

Standard: Analysis will include—
1. Interrelationships among a nation’s values, interests, objectives, policies, programs, and commitments influence national strategy.
2. Essential strategic information between these relationships.
3. Synthesis of the essential strategic information to demonstrate an understanding of these relationships.

(Remember the use of gerunds is typically inappropriate here)

Learning Domain: Cognitive
Level of Learning: Analysis

JPME I Learning Areas Supported:
1a. Comprehend the capabilities and limitations of US military forces.

3. ISSUE MATERIAL
a. Advance Issue. List any courseware that was available to the students before the start of the lesson, such as something in the student book issues or material from a previous or related class.

b. During Class. Include handouts, quizzes, practical exercises and other material to be given to the students in class.

4. HOMEWORK ASSIGNMENT
a. All CGSC courseware must be covered by copyright release or the fair use principle. See Reference 6, Practical Guide to Obtaining Copyright Release for details. Ensure you have requested copyright release if the material is to be duplicated in either print or electronic format. When completing the Request for Copyright Release from the Combined Arms Research Library (CARL) copyright technician list as much bibliographic citation material as possible so the editors have appropriate, sufficient data to put the citation in the proper format or do the required research. When listing readings use The Chicago Manual of Style, the CGSC citation standard (15th edition of the Chicago Manual of Style and the 6th edition of Kate Turabian’s A Manual for Writers of Term Papers, Theses, and Dissertations, Chicago: University of Chicago Press, 1996).

b. Some useful examples:

Lastname, Firstname MI. Title in Italics with Period at End. City Location: Publisher, YEAR, Page–Numbers, (total number of pages, i.e. 12 pages). (subsequent lines have hanging indent set at .25) This is for a book.

Lastname, Firstname MI. “Title of Article not in Italics but in Quotation Marks with Period at End.” Title of Periodical in Italics with Period at End. (Month Year): Page–Numbers, (total number of pages). (subsequent lines have hanging indent set at .25) This is for an article.

c. For other types of publications, list as much information as you have. It is important that the editors and copyright technician know if the document is a joint publication, field manual, Army War College publication, CGSC publication, or reprint from instructional material. The date of publication is very important and difficult to locate through other sources. Indicate any special instructions, such as: whether the reading is on the Joint Electronic Library (JEL), if the reading will be printed in the readings book, the reading is a student issue text, or students must buy the book. Let the editors know how the students will receive the material,
so they can number the readings correctly. Reprinted readings are numbered with the lesson number, R for reading, and a sequential letter to indicate their order.

d. **Study Requirements.** This is a very important section for the student so that she/he knows what is expected as they come to class. The required reading material is what gives the course consistency across teams and instructors. It is what is required of all students throughout the lesson/course. Whether reading is the first requirement or a subsequent one, the reading list should be prioritized. Review readings should have a specific purpose in mind for having students review previous material besides linkage between lessons. Again, have a purpose in mind when assigning something to be scanned. Scanning can orient students to a topic, serve as a preview of further discussion, establish a knowledge baseline, pique interest, or alert students to class activities or requirements. It should not be used as a method to cover nice-to-know material. All readings must have the number of pages annotated to enable the student to see how much reading is required and to enable the lesson author to gauge the amount of work she/he is requiring the student to do. An example with:

**First Requirement:**

**Read:**


**Review:**


**Scan:**


**Second Requirement:**

Some lesson authors use the second requirement as a place to list questions that students should consider or answer while reading the material above. Others prefer to use it as a place to list material that students have read for an earlier lesson but should review for application to the topic in this lesson.

**Third Requirement:**

If there is no third requirement (or even a second requirement, for that matter), do not feel compelled to come up with one; it can be omitted. If there are more than three requirements, each will be added following the same format.

**e. Bring to Class:** Be specific about what the student must bring to class and why. Do not list items that will not be used or are only nice-to-have.
5. ASSESSMENT PLAN

Explain specific criteria that strictly pertain to this lesson. You can approach writing a lesson-specific assessment plan in either of two ways:

(1) Write a short narrative which stipulates which specific points of the lesson will be assessed, what performance measure(s) the student has to accomplish to demonstrate mastery level, and what criteria are assessed for mastery (A, B, C, or U).

(2) You can simply refer the students to an Appendix A.
Appendix A
Assessment Plan

The assessment plan here should be very detailed. It should first list the specific lesson components or requirements comprising the students’ assessment. Then, in subsequent paragraphs, each of these specific requirements should be fully explained. Appropriate rubrics should be included within the appendix as necessary.

The following is an EXAMPLE lesson assessment plan:

Part of your performance for the complete XXXXX XXXXXXX Block is assessed in this lesson through the following:

- Campaign Concept Briefing (Group) consists of xx% of the overall C300 Block grade (See Rubric for Details – Author will create or develop a rubric that specifically and appropriately explains what the student must do to receive credit – This must be tied to the Learning Objective).
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**Campaign Concept Briefing (Group) xx%:** The JTF Campaign Concept briefing is the culminating event of the Operational Studies block, drawing all previous operational lesson materials into the student briefing. In this briefing, each student must demonstrate an understanding of the relationship between campaign planning, deliberate planning, and crisis action planning. He/she must discuss the linkages between strategic aim, military end state conditions, operational objectives, sequence of actions, application of resources; the application of elements of operational art focusing on centers of gravity, decisive points, and culmination; and the synchronization of operational level tasks and joint forces. A suggested outline for the Commander’s Campaign Planning Briefing is found at Appendix C.

**Class Participation (Individual) xx%:** Instructors assess each student’s demonstrated understanding of the course material and his or her ability to develop and deliver cogent arguments or relevant insights from course material in a clear and concise fashion. Students demonstrate their knowledge, skill, and ability through the quality and focus of their discussion comments and questions, their preparation for class, their ability to reason critically and to think creatively, their performance during practical exercises and case studies, and contributions to group work. Class participation is assessed on a daily basis. Specifically for this lesson, instructors focus on the following leader behaviors: seeks and is open to diverse ideas and points of view, and conveys thoughts and ideas to ensure shared understanding. See Appendix A, FM 6-22 Army Leadership.

Rubrics outlining the standards for these leader behaviors are included as part of this annex. See CGSC Form 1009.

Follow this cover sheet with customized 1009s or other appropriate rubrics.
In the event that there are no summative assessments during this lesson, this appendix must still include the formative assessments used in the classroom to include guidance detailing the use of formative assessment methods, tools, activities etc.

**Final Note:** All courseware should be written in font Times New Roman, size 11 and slides should be prepared in font Arial, size 11. Format is Normal and flushed to the left margin.
Appendix M

EXTRACT OF TRADOC REGULATION 350-70, 6 DEC 2011

Chapter 5
Requirements for Army Learning Products

5-1. Purpose
Requirements listed in this chapter are mandatory for all new or revised Army learning products. Institutions are responsible for ensuring all learning products they develop meet the requirements outlined in this chapter.

5-2. When to make immediate learning product revisions
a. A course is obsolete or outdated when it is no longer current and relevant. Institutions must conduct periodic course reviews and revise outdated courses. Learning product revisions are immediately mandatory when task performance threatens survivability, mission accomplishment, or when a major environmental or safety impact is identified.

b. Proponent schools must conduct a complete IMT POI review of AIT/BOLC-B/Warrant Officer Basic Course (WOBC) every 3 years for synchronization and compliance with requirements in TR 350-6 and TR 350-36. Results of reviews must be submitted directly to IMT-CoE (ATTN: ATCG-MTO) for DCG, IMT review and approval.

c. Critical operational lessons learned approved by the commander/commandant (or their designated representative) are authorized for immediate implementation using the most expedient method.

d. To ensure content validity and minimize training and education risk, any learning products on critical operational lessons learned not produced by the proponent must be sent to the proponent for immediate vetting and development of approved learning products.

e. For all critical operational lessons learned, proponents must immediately assess the validity and begin the ADDIE process for product development or oversight. Proponents are responsible for approving or disapproving learning products developed for critical operational lessons learned.

5-3. Army learning product development requirements
a. Analyze, design, develop, implement, and evaluate Army learning products using current, relevant, emerging, and approved Army doctrine.

b. Produce AA and RC equivalent products unless TRADOC, DCS, G-3/5/7, RCTID, in coordination with USARC and NGB, grants and approves the exception.

c. Include USARC/NGB-designated SMEs during all ADDIE phases, including the CTSSB, final validation, and evaluation. RC collaboration and participation must be timely to prevent rework and to ensure product completion without unnecessary delay.

d. Design products as an integrated whole within the career-long learning continuum to prevent disjointed learning.
e. Use the CAC-approved automated development system and tools for their required purposes, including learning product tracking and management.

f. Write content for the appropriate reading level for the learning product target audience IAW TR 25-30.

g. Maintain security of all assessment items and scenarios as required.

h. Check the Army Publishing Directorate (APD) list of electronic DA-level publications (http://www.apd.army.mil/) to verify the currency of references.

5-4. Product classification requirements

a. Security classification markings alert personnel to the sensitivity of information contained in Army learning products. Classified military information (CMI) indicates that an original classification authority has determined learning products to be so sensitive that national security requires a special designation assigned to them.

b. Apply the appropriate classification markings to all Army learning product components, as applicable. Table 5-1, below, lists the three security classifications for CMI. Table 5-2 further explains the types of unclassified information.

Table 5-1
Classified military information security classifications and releasability standards

<table>
<thead>
<tr>
<th>Security classification</th>
<th>Description/releasability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Confidential</td>
<td>May be released prior to a commitment when its release is necessary to aid a foreign government in a decision making process, and/or through international programs.</td>
</tr>
</tbody>
</table>
| 2. Secret               | Usually not released until the submission and acceptance of a letter of offer.  
  
  Note: An exception is the release of information IAW an approved international agreement, that is, the technical cooperation program, memorandum of understanding (MOU), and data exchange annex. |
| 3. Top Secret           | Requires approval of HQDA, G-2/G-3. Generally, requires a specific delegation of disclosure authority letter. May require exceptions to the national disclosure policy |

Table 5-2 Types of unclassified information

<table>
<thead>
<tr>
<th>Subcategory</th>
<th>Description/releasability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Controlled unclassified information (CUI)</td>
<td>Information of such sensitivity as to warrant a degree of control over its use and dissemination. See AR 380-10 for more information.</td>
</tr>
<tr>
<td>2. Public domain information</td>
<td>Information deemed to be actually or potentially in the public domain and suitable for release to the public (to include not only citizens of the U.S. and immigrant aliens, but also citizens of all foreign countries acting in a private capacity).</td>
</tr>
<tr>
<td>3. For official use only (FOUO)</td>
<td>Information that is exempt from mandatory release to the public under the Freedom of Information Act (FOIA). See AR 25-55, chapter 4 for more information on FOUO.</td>
</tr>
<tr>
<td>4. Law enforcement sensitive</td>
<td>Law enforcement sensitive information is specifically identified as a form of controlled unclassified information in AR 380-10.</td>
</tr>
</tbody>
</table>

d. Coordinate with the installation foreign disclosure office (FDO) to:

   (1) Ensure clear and correct stamping of all applicable classification markings and disclosure requirements on each Army learning product containing CMI or CUI.

      (a) Verify that technical information related to research, development, engineering, testing, evaluation, production, operation, maintenance, or employment of military equipment systems—including dissemination outside the U.S. Government—is subject to export controls.

      (b) Have all public domain information reviewed by an Army public affairs officer prior to public release. The U.S. Army Public Affairs Office (PAO) is the proponent for the disclosure of the Army's public domain information.

   (2) Comply with rules related to the release of CUI and public domain information. The appearance of information from any source does not necessarily imply that a public affairs officer has certified it as public domain.

Note: Some CUI is subject to the Privacy Act of 1974, or is otherwise exempt from mandatory disclosure outside the U.S. Government. This information usually is marked "FOR OFFICIAL USE ONLY (FOUO)."

e. Maintain an audit trail of all source data; that is, page, document title and number, date of document, and originating source with office contact information (official mailing address, telephone, and e-mail).

5-5. FD requirements

   a. Documents require both a classification decision and a foreign disclosure decision. Foreign disclosure markings alert personnel to the sensitivity of information contained in Army learning products. Foreign disclosure restriction statements determine the releasability of the information to military students from foreign countries.

   b. Developers of Army learning products, in coordination with the local FDO, must review all course materials and learning products containing CMI or CUI to ensure it shows the appropriate classification and FD restriction statements. This process normally begins during the design phase of the ADDIE process.

   c. There are three categories of information: CMI, CUI, and public domain information.

   d. It is the policy of the United States to avoid creating false impressions on its readiness to make available classified military material, technology, or information. Initial planning with foreign governments concerning learning products which might involve the eventual disclosure of classified information may occur only with the explicit understanding and acknowledgement that no U.S. commitment to furnish such classified information or material is intended or implied until the United States approves the disclosure. U.S. Army personnel involved in teaching international students must refrain from any commitment to furnish specific CMI or CUI until the designated disclosure authorities approve the disclosure.
e. Disclosure must be limited to information necessary to accomplish learning objectives. Modes of disclosure may be oral, visual, or documentary. An IMS may be asked to return reference materials upon completion of the course.

f. Unclassified Army learning products are considered controlled unclassified information and require approval from the institution prior to release. The appropriate PAO must review and approve all Army information prior to its release to the public.

g. All personnel involved in the production, implementation, distribution and/or maintenance of Army learning products must protect against the non-approved disclosure of CMI and CUI contained within any learning product.

h. FD requirements require developers to:

(1) Forward all Army learning products (including components) containing CMI or CUI to the installation’s FDO for determination of the appropriate restriction statement, approval, or denial.

(2) Apply appropriate FD restriction statements (see below) on the cover of every Army learning product (and component) that contains CMI and CUI. There must be one FD restriction statement for the learning product as a whole, one for each lesson, and one for each document used as a resource for the learning product. For more information on restriction statements, refer to AR 380-5 and DA Pam 25-40. TRADOC Regulation 350-70 53

(a) One of the applicable FD restriction statements shown in figure 5-1 must appear on the cover of every TSP that contains CMI or CUI and is used for teaching any foreign student. The statement is required exactly as written, to include the statement number.
FD1. The materials contained in this course have been reviewed by the course developers in coordination with the (installation/activity name) foreign disclosure authority. This course is releasable to students from all requesting foreign countries without restrictions.

FD2. The materials contained in this course have been reviewed by the course developers in coordination with the (installation/activity name) foreign disclosure authority. This course is releasable to military students from foreign countries on a case-by-case basis. Foreign countries desiring to place students in this course must meet one or more of the following criteria: (1) Own (a specific piece of equipment); (2) Have a signed Letter of Intent (LOI); (3) Have waiver from HQDA; (4) Have U.S. Government (USG) release for training; (5) etc.

FD3. The materials contained in this course have been reviewed by the course developers in coordination with the (installation/activity name) foreign disclosure authority. This course is NOT releasable to students from foreign countries.

FD4. The materials contained in this course have been reviewed by the course developers in coordination with the (installation/activity name) foreign disclosure authority. Some component(s) of this course is(are) NOT releasable to students from foreign countries. See each training/TATS course TSP subcomponent/product for applicable FD restriction statement.

Figure 5-1. FD restriction statements FD1, FD2, FD4, and FD4

(b) One of the FD numbers and restriction statements in figure 5-2 should appear on the cover of any TSP subcomponent (for example, lesson plan, POI, course management materials, and so forth.); stand-alone learning product; and literature containing CUI or CMI information. These restriction statements are in addition to the distribution statements on Army-wide ADTLP publications.
FD5. This product/publication has been reviewed by the product developers in coordination with the (installation/activity name) foreign disclosure authority. This product is releasable to students from all requesting foreign countries without restrictions.

FD6. This product/publication has been reviewed by the product developers in coordination with the (installation/activity name) foreign disclosure authority. This product is releasable to students from foreign countries on a case-by-case basis.

FD7. This product/publication has been reviewed by the product developers in coordination with the (installation/activity name) foreign disclosure authority. This product is NOT releasable to students from foreign countries.

Figure 5-2. FD restriction statements FD5, FD6, and FD7

(3) Maintain an audit trail of all source data.

(4) Ensure:

(a) Individuals designing Army learning products comply with AR 380-5 and AR 380-10. DA Pam 25-40 states that all new and revised technical, equipment, doctrinal, and learning publications must contain statements specifying their availability for release and dissemination. These statements facilitate control, distribution, and release of these documents without repeatedly referring questions to the originating activity.

(b) International students receive access only to releasable Army learning products for the courses/events they are attending. This restriction extends to automated databases and products.

(c) All Army learning products containing CMI must be equally releasable to all international students enrolled in the same course.

(d) Coordination of approval for data disclosure from a CUI document if it contains data for which another command or agency is the proponent.

(5) Determine disclosure applicability to a specific country before placing the learning course/event on the military articles and services list, or otherwise indicate it as available for foreign attendance.

5-6. Copyrighted material requirements

a. A copyright is a legal right that exists in a work of creative expression such as text, drawings, photographs, graphic designs, architectural plans, motion pictures of every kind or technique, music, and sound recordings. The copyright exists at the moment a work is created and fixed in any medium capable of perceiving, reproducing, or communicating the work. A copyright is not the work itself, but the rights accruing to the copyright owner under the U.S. Copyright Act.

b. A copyright owner has the exclusive right to reproduce (make copies of), distribute, perform publicly, display publicly, or make certain modifications to (called a "derivative work") the copyrighted work. In general, unless permitted by a specific exception in the U.S.
Copyright Act, none of these actions should be committed without permission of the copyright owner.

c. Department of the Army policy requires respecting the rights of copyright owners. The U.S. Government may be sued, and may be required to pay damages for copyright infringement. Prior to buying or using any work that might be subject to copyright protection, seek the advice of the installation staff judge advocate’s office. "Fair Use" determinations regarding copyrighted material must only be made by an attorney.

d. For additional information on copyright and using social media, review the material at http://www.copyright.gov and http://creativecommons.org/.

5-7. Safety and composite risk management (CRM) in Army learning environments

a. CRM is the decision-making process for identifying and assessing hazards, and developing and implementing risk mitigation actions to control risk across the full spectrum of Army missions, functions, operations, and activities (see FM 5-19). Institutions must manage risks without degrading essential learning requirements. Rigorous, realistic learning exercises, implemented under stressful conditions are critical to preparing our Soldiers to fight and win in FSO.

b. CRM is a vital component of the ADDIE process. CRM balances benefits against potential losses and provides the tools to accomplish realistic exercises while preserving the scarce resources of personnel, time, and equipment. The purpose is not to restrict, but to enhance realism and increase flexibility.

c. The branch safety director is responsible to ensure personnel associated with the ADDIE process are taught CRM on an annual basis.

d. Figure 5-3 lists Army learning product safety requirements.

e. See FM 5-19 for more information on the steps of the CRM process.

5-8. Environmental considerations

a. Environmental protection involves developers and instructors/facilitators working aggressively to avoid or minimize damage to the environment caused by realistic learning courses/events.

(1) Ensure all staff, instructors/facilitators, and students practice environmental protection. Include appropriate environmental protection statements, cautions, notes, and warnings on all Army learning products. See figure 5-3 for Army learning product safety requirements.

(2) Synchronize efforts with capability and materiel developers to coordinate ranges and other learning environments (to include training sites) for instruction on new systems to preclude any costly adjustments later.

b. All AA and RC personnel must preserve and protect the environment in which they teach and operate. This provides:

(1) Reduced teaching costs.

(2) Increased goodwill with the American public, particularly those neighboring the installation.

(3) Increased sustainability of our limited learning environments and resources.
1. Comply with all federal, state, and local laws, regulations, and restrictions.

2. Adhere to all CRM and safety standards IAW FM 5-19 and TR 385-2.

3. Identify:
   a. All hazards associated with courses/events.
   b. All risks associated with courses/events.
   c. The residual risk associated with the application of the Army learning product.
   d. Each significant hazard, during task analysis, at the task step level.

4. Assess risk elements, express their possible effects, and assign a risk level.

5. Compare risks against Army learning benefits.
   a. Mitigate risk to personnel and equipment and consider alternative programs that can safely accomplish learning requirements.
   b. Conserve and preserve resources.

6. Implement controls to eliminate or reduce the risks and hazards involved in relation to learning benefits. Review historical lessons learned, or accidents pertaining to similar training, to help in determining the risk or how to mitigate it.

7. Apply safety, risk, and protection statements; cautions, notes, and warnings.

8. Coordinate and review all safety and risk management issues with the branch safety manager.

9. Emphasize safety and environmental protection by recognizing unsafe behavior and attitudes; making risk decisions; counseling individuals; and developing counter-measures to control, minimize, and eliminate hazards during courses/events.

10. Ensure:
   a. All centers/schools meet TRADOC safety and occupational health program evaluation criteria IAW TP 385-2 and TR 350-29; applicable Code of Federal Regulations, statutes, and laws; DoD instructions (DoDI s) and DoD directives (DoDDs); and ARs.
   b. All instructors/facilitators, staff, and students adhere to the intent of the CRM, with the understanding that CRM is a dynamic process.

11. Submit requests for risk assessment rating approval for all Army learning products using the following guidance:
    a. Extremely high-risk assessments require approval by, HQ TRADOC, DCS, G-3/5/7. Send the request through the chain of command to the senior military commander of general officer grade.
       (1) Upon approval, a copy of the acceptance letter will be forwarded through the TRADOC Safety Office to Commander, TRADOC, (ATCS-S), Fort Eustis, Virginia 23604-5700; e-mail: monr.atcss@conus.Army.mil.
       (2) Correspondence must include a risk assessment, supporting documentation, the senior military commander's position on risk acceptability, and the rationale or need for the acceptance of an extremely high residual risk.
    b. High-risk assessments must be staffed with the branch safety office and require approval by the Army learning institution commander/commandant or their designated representative.
    c. Moderate risk assessments require approval by the delegated approval authority of the institution commander/commandant or their representative. They may delegate the authority, in writing, to lieutenant colonels or equivalent and command sergeants major serving at NCOAs or Command Sergeants Major Academy commandants.
    d. Low risk assessments require approval, in writing, by the delegated approval authority of the senior military commander/commandant or their designated representative. Course chiefs may be designated approvers for low risk assessments.
    e. Disagreements among the raters and reviewers concerning risk assessment level assignments require documentation and submission with the ratings to the approving authority for final decision.

12. Supervise, evaluate, and enforce identified standards and controls. Review and revise all risk management information associated with or contained in TSPs, lesson plans, or any other Army learning products when conditions change, or annually as necessary. Standards and controls require continuous monitoring and revision on a regular basis.

**Figure 5-3. Army learning safety requirements**
## Appendix N

### REQUEST FOR COPYRIGHT PERMISSION

<table>
<thead>
<tr>
<th>To: CGSC Library</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fort Leavenworth KS 66027-6900</td>
<td></td>
</tr>
<tr>
<td>POC Name:</td>
<td></td>
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<td>POC Status: (Please Circle one)</td>
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</tr>
<tr>
<td>Student</td>
<td>Instructor</td>
</tr>
<tr>
<td>Email:</td>
<td></td>
</tr>
</tbody>
</table>

**To: CGSC Library**  
Fort Leavenworth KS 66027-6900  
Date

**POC Name:**

**POC Status:** (Please Circle one)

**Student**  
**Instructor**  
**Course Author**  
**Other:**

**Email:**

**Request copyright permission be obtained for the following material, as specified:**

### 1. **Type of Material** (Please mark appropriate block):

- [ ] Excerpt from a Book  
- [ ] Film/Video  
- [ ] Newspaper/Magazine article  
- [ ] Website __________________________  
- [ ] Still Images (photos, maps, charts...)  
- [ ] Other Electronic Source (Describe) ____________________________________________

### 2. **Description of selection:** (*required entries)

*a.* Title of material: __________________________________________________________

*b.* Subtitle/Article Title: _____________________________________________________

*c.* Creator (author, photographer, editor, producer...): __________________________

*d.* Publisher: __________________________

*e.* Date of Publication: ________  
*f.* ISBN/ISSN: ________________________

*g.* Beginning Page Number: __________________________  
*h.* Number of Total Pages: ______

(Please provide length of segment for video or film clip requests instead of pages)

**This section is required for course material requests only.**

### 3. **Copyrighted material will be used as indicated:**

- Program: Resident ILE  
- SAMS  
- TASS  
- Satellite ILE  
- Term or Academic year: ______

- Department ______ Course Number: ______  
- Number of copies to be reproduced: ______

### 4. **Type of reproduction:**

- [ ] Reprint/Photocopy (i.e. Handouts)
- [ ] Blackboard -# of students accessing website:____
- [ ] Course Pack (Library Reserve)
- [ ] Sharepoint -# of students accessing website:____
- [ ] Classroom Presentation (Powerpoint/film clip)
- [ ] Other:________________________

**Please allow at least 3-4 weeks for permission documentation.**

Please note that copyrights requiring a contract may take up to 60 additional days to process.