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Army Learning

ARMY EDUCATIONAL PROCESSES

FOR THE COMMANDER:

OFFICIAL:

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History. This publication is a major revision and aligns with the U.S. Army Training and Doctrine Command (TRADOC) Campaign of Learning.

Summary. This pamphlet provides guidance to institutions that provide professional military education (PME). It presents general principles of education for learning, curriculum development, teaching, assessment, and evaluation. This guidance supports the concepts outlined in the Army Learning Concept for Training and Education (ALC-TE) and describes the processes that guide curriculum development and educational instruction. This guidance aligns with policy set forth in TRADOC Regulation (TR) 350-70 (Army Learning Policy and Systems).

Applicability. This pamphlet applies to the following Army educational institutions:

- Army War College;
- U.S. Army Command and General Staff College (CGSC);
- Warrant Officer Career College;
- Army Management Staff College;
- Defense Language Institute Foreign Language Center (DLIFLC);
- The Sergeants Major Course within the NCO Leadership Center of Excellence and the U.S. Army Sergeants Major Academy.

*This pamphlet supersedes TRADOC Pamphlet 350-70-7, dated 9 January 2013.

- The School for Professional Military Education at the Western Hemisphere Institute for Security Cooperation.
- All Captains Career Courses at Army branch schools; and
- Reserve Component - The Army School System organizations providing Army education courses to resident and non-resident student populations.

This pamphlet also applies to select courses and programs at the following organizations and schools:

- The Combined Arms Support Command;
- The Army Medical Department Center and School;
- The Judge Advocate General's Legal Center and School;
- U.S. Army Cadet Command

Finally, this pamphlet applies to other TRADOC and non-TRADOC agencies and organizations possessing memoranda of understanding, memoranda of agreement, and contracts for developing educational learning products for TRADOC and Reserve Component - The Army School System agencies and organizations. For other institutions, TRADOC Pamphlet (TP) 350-70-14 (Training and Education Development in Support of the Institutional Training Domain) should provide sufficient guidance for the development of both topic-based and task-based curriculum without the need to reference this pamphlet also.

Proponent and exception authority. Headquarters, Army University (Army U), Fort Leavenworth, Kansas is the proponent for TP 350-70-7. The Provost, Army U is the authority to approve exceptions or waivers to this pamphlet consistent with controlling laws and regulations, unless otherwise designated. The Provost, Army U will consider and grant exceptions to policy and/or waivers on an individual basis. The commander/commandant or senior leader of the requesting activity must endorse all exception/waiver requests before forwarding them through appropriate higher headquarters to the policy proponent. Requests must include requestor contact information; type of request (initial, extension, modification, appeal, or cancellation); specific pamphlet line items requested for exception/waiver; the requesting unit; the affected institution, center, or school; a proposed alternative; justification; impact; expected benefits; anticipated effective dates; and duration requested. The proponent seeks continual innovation and process improvement. The proponent must consider significant process improvements and global exceptions for addendum to policy prior to the next revision.

Suggested improvements. Submit changes for improving this publication on Department of the Army (DA) Form 2028 (Recommended Changes to Publications and Blank Forms) directly to the Provost, Army University, Attention (ATTN): Director for Learning Systems (DLS), Policy and Governance Division (PGD) (ATZL-AUL), Fort Leavenworth, KS 66027-2300. Additionally, individuals and organizations may send comments electronically using ArmyU@mail.mil.

Distribution. The official published version of this pamphlet is available only on the TRADOC Administrative Publications website (<http://adminpubs.tradoc.army.mil>).

Summary of Change

TRADOC Pamphlet 350-70-7
Army Educational Processes

This major revision, dated 4 October 2018-

- o Broadens discussion of the education processes to describe foundational adult learning concepts and their application to teaching and learning in educational institutions and schools (chap 1).
- o Adds a chapter addressing external accrediting bodies and accreditation considerations (chap 2).
- o Moves the former “Chapter 3. Evaluation” to become the new chapter 7 (chap 7).
- o Refines discussion regarding accreditation and evaluation processes to recognize the varied requirements and approaches at individual institutions (chaps 2 and 7).
- o Adds a chapter on teaching to describe the expectations and competencies for instructors in educational institutions, describes the concept of adult learning and the Army University Experiential Learning Model, and emphasizes strengthening adaptive thinking to better support the Army Learning Concept for Training and Education (chap 3).
- o Adds a chapter on learning that addresses teaching versus learning and classroom assessments (chap 4).
- o Integrates the former “Chapter 2. The Analysis, Design, Development, Implementation, and Evaluation (ADDIE) Process” into a new chapter 5 addressing curriculum development and develops the hierarchy of educational outcomes, objectives, and standards (chap 5).
- o Provides references and examples for curriculum developers preparing courseware for delivery in learner-centric collaborative learning settings that emphasize critical thinking and problem solving skills (chap 5).
- o Expands the discussion of assessment of student learning, provides the characteristics of learning assessment programs, and addresses feedback to students regarding assessments as they relate to educational institutions (chap 6).
- o Updates appendix A, Section I Required Publications with two United States Army Training and Doctrine Command regulations, three training pamphlets, an Army University white paper, and an Army doctrinal reference publication (app A).
- o Replaces “Appendix B. Relationships among Learning Domains, Levels of Learning, and Learning Objectives” with a new “Appendix B. Examples of Army Enterprise Accreditation Standard (AEAS) Rubrics for the Faculty and Staff Development Standard, AEAS-6” (app B).

- o Deletes Appendix C Assessment Instruments, Appendix D Examples of Lesson Plans, and Appendix E Rubric Examples.
- o Deletes five tables addressing an assessment matrix and United States Army Command and General Staff College enterprise standards rubrics (chap 2 and appendix E).
- o Moves the Accountable Instructional System figure from chapter 2 to chapter 5 (chapters 2 and 5).
- o Deletes five figures from chapter 2, chapter 4, and appendixes B and E (chapters 2 and 4, appendixes B and E).

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Chapter 1

Introduction

1-1. Purpose

The purpose of this pamphlet is to provide guidance to Army institutions and schools that provide professional military education (PME).

1-2. Scope

This pamphlet describes educational processes for Army PME programs, courses and their related course phases, modules, and/or individual lessons. It provides guidance for incorporating the concepts outlined in the Army Learning Concept for Training and Education (ALC-TE) into Army education. Refer to United States (U.S.) Army Training and Doctrine Command (TRADOC) Pamphlet (TP) 525-8-2 (U.S. Army Learning Concept for Training and Education 2020-2040) for more information. The pamphlet outlines the influence and impact that Army, Department of Defense, the U.S. Congress, and external accrediting authorities have on Army educational processes and curriculum. It describes the teaching and learning processes in Army education and focuses on the dynamic interaction between teaching, learning, assessment and feedback. It also provides specific guidance for analysis, design and development of curriculum under the Accountable Instructional System (AIS) construct, using the analysis, design, development, implementation, and evaluation (ADDIE) process that TRADOC Regulation (TR) 350-70 specifies.

1-3. References

TR 350-70 is the governing policy and regulation for this pamphlet. This pamphlet lists required and related publications and referenced forms in Appendix A. Referenced links on civilian educational references are in the glossary. Job Aids are available on The Training and Education Developer Toolbox (TED-T) website.

1-4. Explanation of Abbreviations and Terms

Abbreviations, acronyms, and terms used in this pamphlet are in the glossary. Army Training Network (ATN)/TED-T also contains a glossary of terms supporting TR 350-70 and Army training and education development.

1-5. Army Educational Processes Overview

Army educational processes involve curriculum development, teaching, learning, assessment and feedback, and evaluation to produce and deliver professional military education and select professional or functional education to meet Army, Joint and Interagency personnel requirements. Education provides the knowledge, skills and tools necessary for Soldiers and Department of Army (DA) Civilians to succeed in positions of increasing responsibility throughout their careers. While education provides knowledge necessary for success, it also prepares the individual how to think to solve newly encountered problems and challenges. The ALC-TE describes a systematic approach to Army learning that delivers an adaptive blend of learner-centric training and education. When educators combine training and education with experience, they assist to develop Soldiers, DA Civilians, and cohesive teams that are capable of winning in a complex world.

- a. In a learner-centric education, learning focuses on the individual or team and fosters competencies with learning strategies, expert facilitators, and technologies that support the learner. Army institutions and schools deliver education with adaptive instructors who display the character, competence, and commitment required to teach, train, assess, evaluate, and facilitate learning to develop trusted Army professionals and Joint personnel.
- b. Chapter 2 introduces Army educational institution accreditation considerations and standards.
- c. Chapter 3 characterizes the teaching process in education courses and institutions. It describes the adaptive instructor, the foundations of adult learning, and provides guidance regarding how to strengthen critical and creative thinking.
- d. Chapter 4 addresses the dynamics and differences between teaching and learning. This chapter discusses learning styles, learning modes, and provides guidance for classroom assessments.
- e. Chapter 5 guides curriculum design and development specific to education programs and courses. The chapter emphasizes curriculum development for educational programs and courses. This chapter includes discussion of the hierarchy of educational outcomes, objectives and standards, and guides the development of learning objectives according to learning domains. This chapter will also provide an overview of the AIS and ADDIE relative to educational programs.
- f. Chapter 6 focuses on assessment of student learning, describes the characteristics of effective assessment programs, and identifies assessment-related requirements of Army educational institutions, schools and programs. This chapter provides guidance on student grading systems and standards, the use of rubrics for assessment, and providing feedback to students.
- g. Chapter 7 provides guidance that addresses evaluation of educational programs and courses, including formative and summative evaluations.

1-6. Philosophy of Educational Institutions

Army educational institutions are adaptive learning organizations. They employ outcomes-focused processes – based on academic education principles – to sustain relevance and ensure effectiveness. Army educational institutions and schools cannot stay static, as their educational product changes with the Army mission set and the operational environment. Army educational institutions and schools must establish and maintain systems that produce the necessary data for decision-making based on an assessment of student learning and the evaluation of overall institutional performance. The Army has adopted the ADDIE process for educational institutions. The use of this closed loop, continuous improvement process provides outputs for the leadership and faculty to use in improving instruction, administration, assessment, and student support. The continuously adaptive learning organizations called for in the ALC-TE always use data to inform major decisions. As learning organizations, Army educational institutions adapt and improve through strong quality assurance programs focused on the

assessment of student learning and evaluation of institutional success in meeting operational requirements and stakeholder needs.

Chapter 2

Accreditation Considerations

2-1. Army Accreditation

a. Army educational institutions use applicable Army Enterprise Accreditation Standards (AEAS) to perform annual self-assessments, and to prepare self-studies in advance of accreditation visits led by the TRADOC Quality Assurance Office (QAO). All PME institutions must meet AEAS approved by the Commanding General, TRADOC.

b. TRADOC QAO oversees accreditation of Reserve Component - The Army School System's delivery of Army education courses. After Reserve Component - The Army School System brigades complete a self-study, QAO personnel from the institution responsible for that course conduct a site visit to evaluate the learning environment, faculty qualifications, curriculum, student records, and administrative procedures.

2-2. The Influence of External Accrediting Bodies on Army Educational Institutions

Several Army institutions are required by law to sustain additional accreditations to grant credit for Joint Professional Military Education (JPME) Phases I and II, or to award a Masters, Bachelors, or Associates degree to eligible graduates.

a. Congressional mandates and authorities.

(1) Army War College (AWC). Title 10 United States Code (USC) Sections 2151 (Definitions) and 2154 (JPME) provide authorities for AWC to deliver JPME Phase II in a resident format and JPME I or II in a non-resident format. Title 10 USC Section 4321 (Degree granting authority for the Army War College) enables AWC to grant Masters degrees so long as AWC "is accredited by the appropriate civilian academic accrediting agency or organization to award the degree, as determined by the Secretary of Education." AWC's regional accrediting body is the Middle States Commission on Higher Education (<https://www.msche.org/>).

(2) Command and General Staff College (CGSC). Title 10 USC Section 4314 (Degree granting authority for United States Army Command and General Staff College) enables CGSC to grant degrees so long as CGSC "is accredited by the appropriate civilian academic accrediting agency or organization to award the degree, as determined by the United States Secretary of Education." CGSC's regional accrediting body is the Higher Learning Commission (<https://www.hlcommission.org/>). Title 10 USC, Sections 2151 (Definitions) and 2154 (JPME) mandate that CGSC deliver JPME Phase I in an intermediate-level course. The National Defense Authorization Act for Fiscal Year 2015 added authority for CGSC to award JPME Phase II in a 10-month senior-level course.

(3) Defense Language Institute Foreign Language Center (DLIFLC). Title 10 USC Section 2168 (DLIFLC: degree of Associate of Arts in foreign language) authorizes the DLIFLC to confer Associate's degrees. DLIFLC's regional accrediting body is the Accrediting Commission for Community and Junior Colleges of the Western Association of Schools and Colleges (<http://accjc.org/>).

b. Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 1800.01E Officer Professional Military Education Policy (OPMEP) Enclosure F describes the Process for Accreditation of Joint Education (PAJE). Every six years, the Joint Staff J-7 assembles a PAJE team consisting of senior administrators and faculty from peer JPME institutions to evaluate a JPME program and its school/college against Common Education Standards and a set of level-specific Joint Learning Areas/Objectives. The PAJE is how the Chairman complies with statutory responsibilities for oversight of the officer JPME system.

(1) Army War College maintains Joint accreditation to grant JPME Phase II to resident and JPME I and II to nonresident graduates.

(2) CGSC maintains separate accreditations to award JPME Phase II to graduates of the Advanced Strategic Leadership Studies Program delivered by the School for Advanced Military Studies, and JPME Phase I to resident and non-resident graduates of the Command and General Staff Officer Course managed by the Command and General Staff School.

c. Regional accreditation to grant degrees. Regional accrediting bodies receive authority to accredit member higher educational institutions from the Department of Education. Each regional accrediting body maintains its own set of accreditation standards and/or criteria. AWC, CGSC, and DLIFLC must meet the standards of their respective regional accrediting body to sustain authority to award Masters, Bachelors, and Associates degrees for the following courses:

(1) The AWC awards a Master of Strategic Studies degree to graduates of their resident and non-resident course.

(2) The CGSC awards a Master of Military Arts and Science to resident CGSOC students who meet all degree requirements. The CGSC awards graduates of SAMs' Advanced Military Studies Program a Master of Arts in Military Operations, and graduates of the Advanced Strategic Leadership Studies Program receive a Master of Arts in Strategic Studies.

(3) DLIFLC awards an Associate's degree based on successful completion of a foreign language program in residence at DLIFLC, plus completion of general education requirements through testing or coursework at other accredited institutions.

d. Other non-Army accreditations. Beyond regional accreditation, an Army educational institution may elect to maintain accreditation by a national accrediting body like the Council on Occupational Education, or a programmatic accrediting body like the Commission on Accreditation of Healthcare Management Education. While national and programmatic accreditations do not confer authority to grant college credit, they are external judgments of program quality and professional relevance from organizations sanctioned by the Department of

Education. Additionally, some Army educational institutions maintain affiliations with a body/educational institutions to recognize courses that meet its standards for award of a degree, specialty (such as Army Medical Department Center and School graduate programs).

e. The external accreditation of Army educational institutions and courses necessarily influences the processes and procedures in this pamphlet. Specific areas of interest to Joint and regional accreditation teams include, but are not limited to the following:

- (1) Faculty credentials, scholarly activity, and professional engagement;
- (2) Faculty involvement in curriculum design and academic governance forums;
- (3) The direct and indirect assessment of student learning and use of assessment data to inform curriculum decision-making;
- (4) Institutions' academic governance forums and processes; and
- (5) How resource allocation decisions reflect education-based strategic priorities.

f. The American Council on Education (ACE) Military Evaluation Program provides civilian education institutions with college credit recommendations for Soldier's formal military courses, training and experience. ACE does not provide credit recommendations for courses offered by regionally accredited institutions (i.e., AWC and CGSC). An evaluation team of subject matter experts from academia and ACE staff conducts site visits to military schools to review and evaluate training courses based on course materials, experiences of SSGs through Sergeant Major of each MOS, site interviews, and learning outcomes. Based on the findings ACE will make recommendations of postsecondary educational credit. Postsecondary education credit recommendations provided by ACE are valid for 10 years. However, Army University (Army U) recommends that proponents review courses every three years for changes in the program of instruction that may affect ACE credit recommendations. These credits provide academic institutions a method for reviewing Soldier training and education often times saving the government resources and the Soldier time toward obtaining a postsecondary education degree.

Chapter 3

Teaching

3-1. Adaptive Instructors

Army educational institutions deliver education with adaptive and confident instructors who display the character, competence, and commitment required to instruct, teach, train, assess, evaluate, and facilitate learning to develop trusted Army professionals and Joint personnel. Adaptive instructors are those who transform learners from passive receptors of information to collaborators in the educational process and allow the student to tailor their learning experience. Adaptive instructors display and demonstrate all the TRADOC instructor competencies. These include professionalism in terms of their mentoring, ethical, and legal behaviors. Adaptive

instructors understand and apply the foundations of adult learning, and strengthen both critical and creative thinking in their students.

3-2. United States (U.S.) Army Training and Doctrine Command (TRADOC) Instructor Competencies

TRADOC instructor core competencies reflect the knowledge, skills, and attitudes that competent instructors typically demonstrate. TP 350-70-3 (Faculty and Staff Development), contains details of the TRADOC instructor competencies. The competencies described there are an explicit recognition that instructors are members of a profession with responsibilities that extend beyond the teaching-learning setting. Successful instruction requires planning and preparation. An adaptive instructor plans or modifies lessons, instructional strategies, and learning activities, where needed, while remaining within approved resource allocations. Adaptive instructors use a variety of strategies and methods to improve learning and performance. They understand the importance of assessing student learning and performance, and use that assessment data in evaluating the effectiveness and efficiency of their instruction. Finally, adaptive instructors successfully manage the instructional setting, the processes, and technologies associated with that responsibility. Refer to ATN/TED-T for a full list of the TRADOC and International Board of Standards for Training, Performance and Instruction (IBSTPI) Instructor and Instructional Designer (Curriculum Developer) competencies and the performance statements that address the knowledge, skills, and attitudes that are relevant to the demonstration of that instructor competency.

3-3. Instructor as a Professional

a. The concept of professionalism in the performance of teaching is fundamental to being an adaptive and effective instructor. Instructors need to understand their role both as a trusted Army professional and educational professional. Army professionals are Soldiers and DA Civilians who meet the Army's certification criteria in character, competence, and commitment. Instructors at Army educational institutions are recognized members of the Army profession, educational professional with academic credentials, or both. Army instructors bear a responsibility to lead in the classroom, mentor students, and develop their character along with competence and commitment. Army instructors are professionals who are responsible and accountable for both students' academic performance and professional development. As professionals, leaders and mentors, Army instructors directly influence not only students' achievement of learning objectives, but also the development of students' character, values, and ethics.

b. Mentoring. Mentorship is the voluntary developmental relationship that exists between a person of greater experience and a person of lesser experience, characterized by mutual trust and respect as described in AR 600-100 (Army Profession and Leadership Policy). A mentor is a leader who assists personal and professional development by helping a mentee clarify personal, professional, and career goals and develop actions to improve attributes, skills, and competencies. Mentorship is often, but not always, career-oriented. Although individuals often consider mentorship a one-on-one affair, mentorship also occurs in a group setting. In Army educational institutions, mentorship coaching focuses more on personal goals development versus skill improvement.

c. Legal and Ethical Requirements. Instructors are responsible for understanding the legal and ethical requirements of their role in the classroom, which goes beyond the moral principles of the Army Ethic and Army Values to include the unique need to understand copyright law and plagiarism. Refer to Army Doctrine Reference Publication (ADRP) 1 (The Army Profession), Chapter 2 for specifics on the Army Ethic.

(1) Copyright Law. Army instructors should gain a broad understanding of the ramifications of copyright law violations and understand what actions to take if or when they suspect a violation has occurred. Refer to Guidance Concerning Works Protected By Copyright from the General Counsel of the Department of the Army (see TED-T website) or Army Regulation 27-60, Intellectual Property, Chapter 4, Copyrights and Trademarks.

(2) Plagiarism. Army Instructors should understand the concept of plagiarism from their educational institutions perspective: how the educational institution defines it, how to identify it, and ways to mitigate it with their students. Clear explanation of policies, good design and sequencing of requirements, and discussing plagiarism with the students is usually sufficient. Plagiarism is often unintentional and due to lack of understanding about how to cite, give credit where appropriate, and formatting. However, if or when detected or identified, it is incumbent upon the instructor involved to take whatever action is prescribed in the school or organization academic policies.

3-4. Adult Learning and Army University (Army U) Experiential Learning Model

a. Adult Learning.

(1) Understanding how adults learn is a key component of teaching. This understanding arises from acknowledging three important aspects of adult learning – experience, relevance, and reflective thinking.

(2) Experience provides a rich resource for and serves as the basis for adult learning. As a rich resource and basis for adult learning, experience assists Soldiers in developing the learning culture and requisite attitudes, knowledge, competencies, and skills necessary to operate effectively, efficiently, and ethically under conditions of uncertainty and complexity. John Dewey, an American philosopher, psychologist, and educational reformer wrote extensively about teaching, learning, and the influence of experience on those activities. Dewey noted that education relies heavily on connections to experience, and that, “All genuine education comes about through experience.”¹ Turning experience into education requires a concerted effort on the part of both instructors and students. Dewey elaborated on the link between experience and learning stating, “The belief that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative. Any experience is mis-educative that has the effect of arresting or distorting the growth of further experience.”² Teacher-centric, lecture-based transmission of information often misses the opportunity for students to use their own experience and knowledge to contribute to the synergy of collaborative, discussion-based

¹ Dewey, J. (1938). *Experience and education*. New York: MacMillan Co.

² Ibid.

approaches for learning retention. Eduard Lindeman, a friend and colleague of John Dewey, wrote that, “In an adult class, the student’s experience counts for as much as the teacher’s knowledge.”³ He also said, “If knowledge grows, it is because knowing was once a part of experiencing” in recognition of the importance attributed to experience with respect to learning.⁴

(3) Education must engage adult learners to think critically and understand the relevance of what they learn. One of Malcolm Knowles’s assumptions about adult learners is that adults are more interested in learning subjects that have immediate relevance and impact to their job or personal life.⁵ Edward Lindeman expanded on this thought, noting that adults learn not for the purpose of accumulating knowledge, but because learning provides context and relevance to the learner’s facts and experiences.⁶ For adults, learning retention ties closely to relevance or value to the subject. This concept is also supported by neuroscience that demonstrates as our brains mature, they become more selective in what memories and information are transferred to long-term memory storage; information that does not seem to have future value is more likely to be discarded.⁷ Student understanding of learning content relevance ties into the learner motivation to learn. Raymond Wlodkowski describes four integrated factors that combine to enhance adult motivation to learn: success, volition, value, and enjoyment. Students tend to be more motivated if they believe they can be successful in the learning activity, if they have some choice (volition) in how they pursue their learning, if they see the relevance or value of what they are learning, and if they enjoy the learning activity or experience.⁸ Army training and education often represent learning that Soldiers must master to prevail in unified land operations. Soldiers must recognize the relevance of what they learn in order to retain the knowledge and skills that they will need to employ in the future.

(4) Adult learners learn to make defensible judgments about uncertain complex problems through the process of reflective thinking. Reflective thinking occurs when adult learners connect experiences and prior knowledge through reflective judgment to construct new understanding of those uncertain complex situations.⁹ Education must facilitate adult learners in becoming reflective thinkers. Reflective thinking requires the continual evaluation of beliefs, assumptions, and hypotheses against existing information and against other plausible interpretations.¹⁰

b. Army Learning Model and the Army U Experiential Learning Model¹¹

³ Lindeman, E. (1926). *The meaning of adult education*. Montreal: Harvest House

⁴ Ibid.

⁵ Knowles, M. (1980). *The modern practice of adult education: From pedagogy to andragogy*. Englewood Cliffs, NJ: Cambridge Adult Education.

⁶ Lindeman, E. (1926). *The meaning of adult education*. Montreal: Harvest House

⁷ Medina, J. (2014). *Brain Rules: 12 Principles for Surviving and Thriving at Work, Home, and School*. Seattle: Pear Press.

⁸ Wlodkowski, R. & Ginsberg, M. (2017). *Enhancing Adult Motivation to Learn: A Comprehensive Guide for Teaching All Adults*. San Francisco: Jossey-Bass Publishers.

⁹ Dewey, J. (1938). *Experience and education*. New York: MacMillan Co.

¹⁰ King, P. & Kitchener, K. (1994). *Developing Reflective Judgment: Understanding and Promoting Intellectual Growth and Critical Thinking in Adolescents and Adults*. San Francisco: Jossey-Bass Publishers

¹¹ Kolb, D.A. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Pearson Education, Inc.

(1) The Army Learning Model calls for outcome-oriented instructional strategies that foster thinking and innovation, provide operationally relevant context, and best fit the learning audience and range of desired outcomes. Army U adopted the Experiential Learning Model (ELM) instructional strategy as the tool through which an instructor accomplishes teaching and learning. Understand that education connects experiences and prior knowledge through reflective judgment to construct a new understanding of complex situations allows adaptive instructors to facilitate learning through the Army U ELM.

(2) The Army U ELM consists of five phases: concrete experience (CE) (a trigger of prior experience and knowledge); publishing and processing (reactions and observations are shared); generalizing new information (focuses on content and methodology); developing (student-centric focus on how the lesson will be valuable to the student); and applying (a check on learning; determination of achievement of learning objectives). See Figure 3-1 for an Army U ELM overview and JA _ELM_01_01 located in TED-T, Job Aids, (The Army U Experiential Learning Model: a Five-Step Process) for a detailed explanation of the five steps of the Army U ELM. The Army U ELM emphasizes the process of learning and not the product. It helps to develop inductive reasoning, analysis, personal reflection, formulating plans, speaking and writing, and lifelong learning attitudes. While based upon the experiential learning strategy, the model allows adaptive instructors to use different instructional strategies and/or methods of instruction in the generalizing new information phase of the model to accomplish the learning objective.

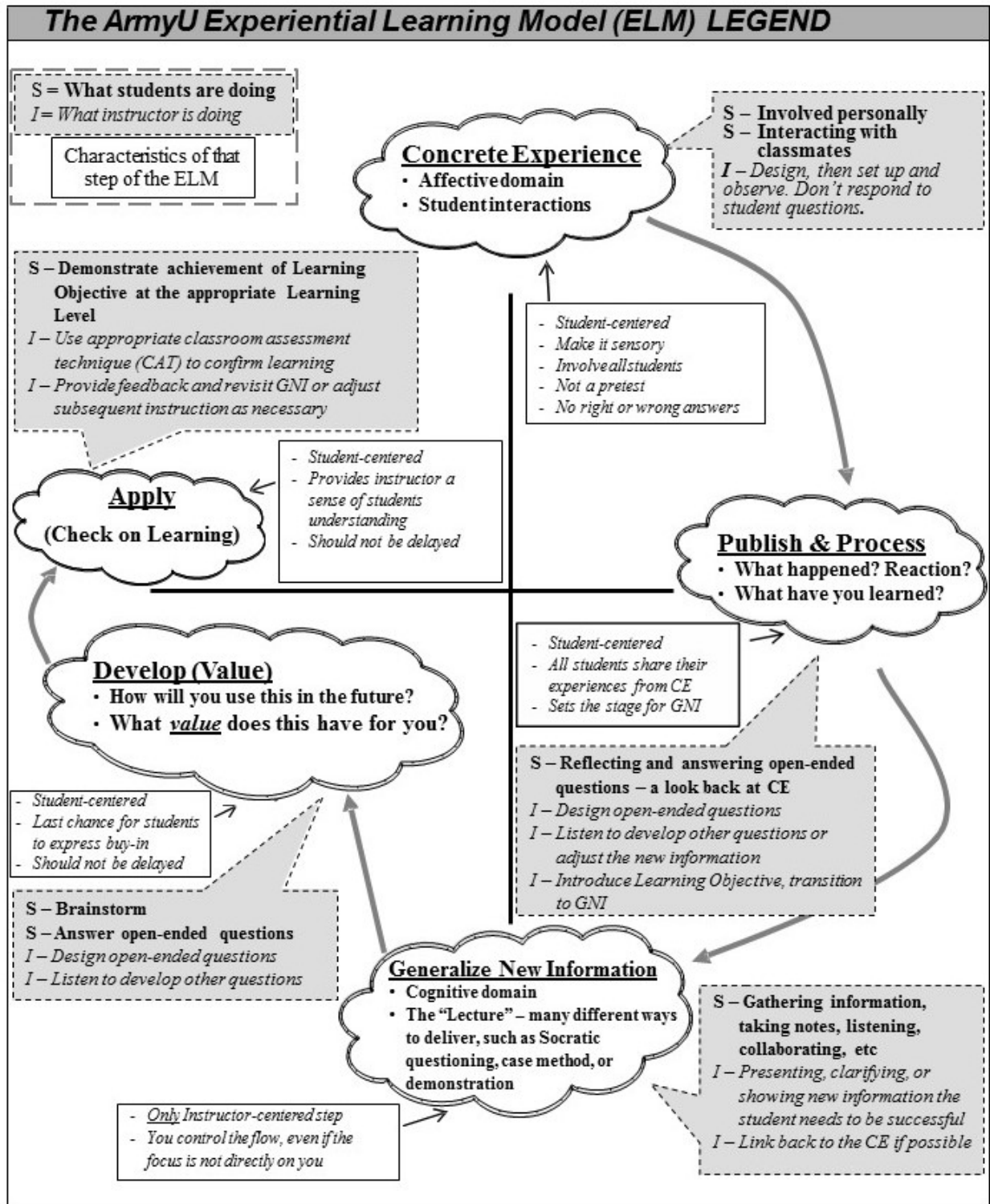


Figure 3-1. The Army U Experiential Learning Model

3-5. Strengthening Adaptive Thinking

a. Army education seeks to develop adaptive Soldiers and DA Civilians capable of operating in uncertain, ambiguous environments amid chaos. Educational institutions should develop instruction that facilitates students' learning to address complex, dynamic challenges and continually practice critical and creative thinking. The effort requires a focus on improving adaptability, mental agility, judgment, innovative thinking, ethical reasoning, and knowledge. This requires the cultivation of critical thinking and creative thinking skills. Critical thinking is purposeful and reflective judgment about what to believe or what to do in response to observations, experience, verbal or written expressions, or arguments as described in ADRP 5-0. Creative thinking involves creating something new or original and leads to new insights, novel approaches, fresh perspectives, and new ways of understanding and conceiving things. See ADRP 5-0 (The Operations Process) for more information.

b. The four Army Learning Areas, Army Leadership and the Profession, Human Dimension, Mission Command, and Professional Competence serve as the framework to catalog the 14 general learning outcomes as listed in TP 350-70-14. In particular, "Army educational processes revolve around strengthening critical thinking in students, reinforcing the Human Dimension Army Learning Area."¹² At most PME levels, Army instructor/facilitators cultivate critical and creative thinking skills in their students through Applied Critical Thinking (ACT), Groupthink Mitigation (GTM), Problem Solving, and Decision-Making. In general, the advanced PME levels cultivate Strategic Thinking.

(1) ACT. The deliberate process of applying tools and methodologies to critically review problems by asking better questions, such as deconstructing arguments, examining analogies, challenging assumptions, and exploring alternatives. Effective employment of ACT tools and methodologies cannot occur without self-awareness of one's own cognition, and how one "thinks about thinking:" understanding biases, perception/interpretation, mental models, framing, and worldviews. ACT requires instructors to understand their own thinking in order to develop better questions to help achieve a learning objective. Army instructors cultivate critical, creative, and ethical thinking skills in their students by infusing it into their core content. Instructors model effective critical thinking by asking good questions and challenging student assumptions and perceptions. This exposes students to techniques and tools that aid the student to self-examine their thinking. See The Applied Critical Thinking Handbook produced by the University of Foreign Military and Cultural Studies for more information on ACT tools.

(2) GTM. The application of tools designed to foster divergent thinking during problem solving by including the perspectives of every member of the group before converging on a course of action. Inherent in GTM techniques are the requirements of individuals to consider and record their thoughts before group engagement, and the use of anonymity to encourage candid feedback. GTM is the application of various tools to prevent or minimize "groupthink" – when a group of people is unable to separate their own perspectives from those of the rest of the group, and sometimes arrive at decisions or conclusions not favored by any of the individual members

¹² Army University General Learning Outcomes White Paper, Educating Leaders to Win in a Complex World, 25 March 2016.

of the group. See *The Applied Critical Thinking Handbook* produced by the University of Foreign Military and Cultural Studies for more information on GTM tools.

(3) **Problem Solving.** Army educational institutions seek to develop adaptive Soldiers and DA Civilians who solve complex problems by using their experiences, training, education, creative and critical thinking skills, and collaboration to develop solutions. Problem solving involves situation assessment (understanding), imagining (visualizing), and converging on a solution (directing). Army instructors should convert most classroom experiences into collaborative problem solving events led by facilitators who engage learners to think and understand the relevance and context of what they learn.

(4) **Decision-Making.** Critical thinking and ethical reasoning are at the very center of decision-making. Army educational processes should encourage students to challenge their processes and assumptions in how they make decisions.

(5) **Strategic Thinking.** “Strategic Thinking is an intent-driven activity with the goal of facilitating good judgment to inform decision-making and the development of innovative strategies to align the Army’s future direction with the expected environment.”¹³ “It is the ability to make a creative and holistic synthesis of key factors affecting the unit/mission and its environment in order to obtain a sustainable competitive advantage and long-term success.”¹⁴ Army instructors facilitate students’ strategic thinking by encouraging them to think critically, creatively, and ethically, and apply their judgment to create a future competitive advantage. By using systems thinking, analogical reasoning, and having self-awareness, instructors can encourage students to think strategically by developing situational understanding, questioning assumptions and being open to different perspectives.

Chapter 4

Learning

4-1. Teaching versus Learning

Learning can occur without a teacher; however, student learning is synonymous with effective teaching. When learning does not occur or students fail to achieve expected proficiency, it may be the result of ineffective teaching methods and other factors. Adaptive and effective Army educational processes take into account different learning styles and modes and the effectiveness of different classroom assessment techniques.

4-2. Learning Style and Modes

a. Every student is unique in how he or she prefers to learn. Understanding learning styles helps both Army instructors and students appreciate how individuals prefer to learn in an

¹³ Douglas E. Waters. “Understanding Strategic Thinking and Developing Strategic Thinkers.” *Joint Force Quarterly* (No63.2011). 115.

¹⁴ Charles Allen and Stephen Gerras, “Developing Creative and Critical Thinkers,” *Military Review* (November–December 2009), 77.

educational setting. Instructors should develop an awareness of individual students' preferred learning styles to understand potential challenges students may experience in the classroom.

b. Knowing the linkages between preferred learning styles and the ELM can be useful for the instructor to determine why there may be barriers to learning. In addition, instructors should be aware they will invariably teach according to their own learning and teaching style preference, and may need to adjust their method of instruction.

c. "The idea is not to teach to specific styles, modes or preferences, but to vary content delivery and learning activities sufficiently that all learners move in and out of each of them as appropriate. In this way, all learners can satisfy their particular learning preferences as well as learn how to learn in a less comfortable mode. Modes and preferences are not fixed; over time, and with increased exposure to different learning environments, preferences can change."¹⁵

4-3. Classroom Assessments

a. Classroom assessments help instructors obtain useful feedback on what, how much, and how well, their students are learning. In addition, classroom assessments and rubrics provide opportunities for students to diagnose their own strengths and weaknesses as learners. 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. Instructors can use this information to refocus teaching to help students make their learning more efficient and more effective.

b. "To avoid surprises regarding student academic progress, instructors need better ways to monitor learning throughout the duration of the course; 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."¹⁶ 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. Frequent classroom assessments enable instructors to better understand and promote learning, and increase their students' ability to become more effective, self-assessing, self-directed learners.

¹⁵ Kanadli, S. (2016). A Meta-Analysis on the Effect of Instructional Designs based on the Learning Styles Models on Academic Achievement, Attitude and Retention. *Educational Sciences: Theory & Practice*, 16(6), 2057-2086. doi:10.12738/estp.2016.6.0084

¹⁶ Angelo, T.A. and Cross, K.P. (1993). *Classroom Assessment Techniques: A Handbook for College Teachers*. San Francisco: Jossey-Bass Publishers.

Chapter 5

Curriculum Development

5-1. Curriculum Development Emphasis

a. To develop curriculum in an Army educational institution, curriculum developers and/or instructors use the AIS for either a current lesson under revision or a new one in development. AIS applies the Army ADDIE process as a guide for conducting the analysis, design, development, implementation and evaluation activities that support production, delivery, and continuous improvement of Army learning products and education programs. Curriculum developers should strive to 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.

b. Curriculum developers are also encouraged to use a combination of blended learning approaches that incorporate simulations and gaming to provide realistic training and more effectively assess students' abilities to apply their knowledge in real-world settings. Army educational institution curriculum should emphasize the relevance of what students learn by ensuring the learning occurs when and where it is of most value to them.

5-2. The analysis, design, development, implementation, and evaluation (ADDIE) Process for Army Education Courses and Programs

a. Phase I. Analysis. Analyze and determine required instruction.

(1) Goal analysis. Identifies specific performance or action statements from broadly stated course outcomes or educational outcomes. The goal analysis determines the domains of knowledge that curriculum developers encompass in the course outcomes, which may also include a list of the subjects the student must learn. These performance or action statements can then be broken down into skill and knowledge components and translated into learning objectives from which to base the design and development of lessons that comprise the course.

(2) Topic analysis. Uses the general statement of what the learner needs to know for successful job performance, and breaks it down into measurable performance or actions (such as specific intellectual skills or cognitive procedures) that will enable the learner to demonstrate mastery of the knowledge content.

(3) Target audience analysis. Uses the following elements to inform curriculum design, development, and implementation. Elements that may be identified during a target audience analysis include: Characteristics, knowledge, existing experiences, abilities, attitudes, reading level, workplace conditions, demographics, computer or device literacy, size of population, location(s) of population, maturity, motivation to learn, and interests.

(4) 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.

- (5) Resource analysis. Identify resources and constraints.
- (6) Milestone plan. Develop a course milestone plan.

b. Phase II. Design. Design instruction to meet an identified requirement.

- (1) Write the learning objective. Write an action statement, condition statement, and standards to help define what students will be able to do because of the lesson.
- (2) Develop the Taxonomy of Educational Objectives. Determine the cognitive domain level of your lesson. Consider ways to introduce affective domain behaviors into your lesson.
- (3) Conduct preliminary content research for possible lesson materials. Identify information available to assist in meeting the objectives — resources, methodology, doctrine, publications, guidance, etc.
- (4) 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.
- (5) Develop an outline of lesson content. Determine the content that directly supports the standards of the learning objective. Consider how the instructor will present the learning events. Outline a plan for the conduct of the class.
- (6) Update resource analysis. Continue the process of resource analysis begun in the analysis phase.
- (7) Update milestone plan. Correct the milestone plan based on accomplishments in the design phase.

c. Phase III. Development. Develop instructional material to support courseware requirements.

- (1) Develop lesson plan and advance sheet. Identify the lesson goals, and how the lesson supports the block terminal learning objective.
- (2) Develop the assessment plan. Identify how the instructors will measure student behaviors and abilities to ensure students have achieved the standards.
- (3) Develop “conduct of the lesson”. Identify the behaviors and abilities students must master to meet the educational outcome described by the terminal learning objective (TLO)/enabling learning objective (ELO) action statement.
- (4) Update resource analysis. Continue the process of resource analysis begun in the analysis phase.

(5) Update milestone plan. Revise the milestone plan based on accomplishments in the development phase.

d. Phase IV. Implementation. Complete preparations for and delivery of instruction.

(1) Conduct final preparations for implementation. Ensure the course has included plans for the instructor train-up and considered the nonresident learning environment.

(2) Implement the course or lesson. Conduct instruction, student assessment and feedback.

e. Phase V. Evaluation. Evaluate the effectiveness of the educational process and product.

(1) Conduct formative evaluation. Conduct ongoing review and adjustment of course/lesson design, content and methodologies throughout the development and implementation phases.

(2) Conduct summative evaluation. Conduct a comprehensive, post-implementation review and adjustment of course/lesson based on assessment instruments and faculty and student feedback.

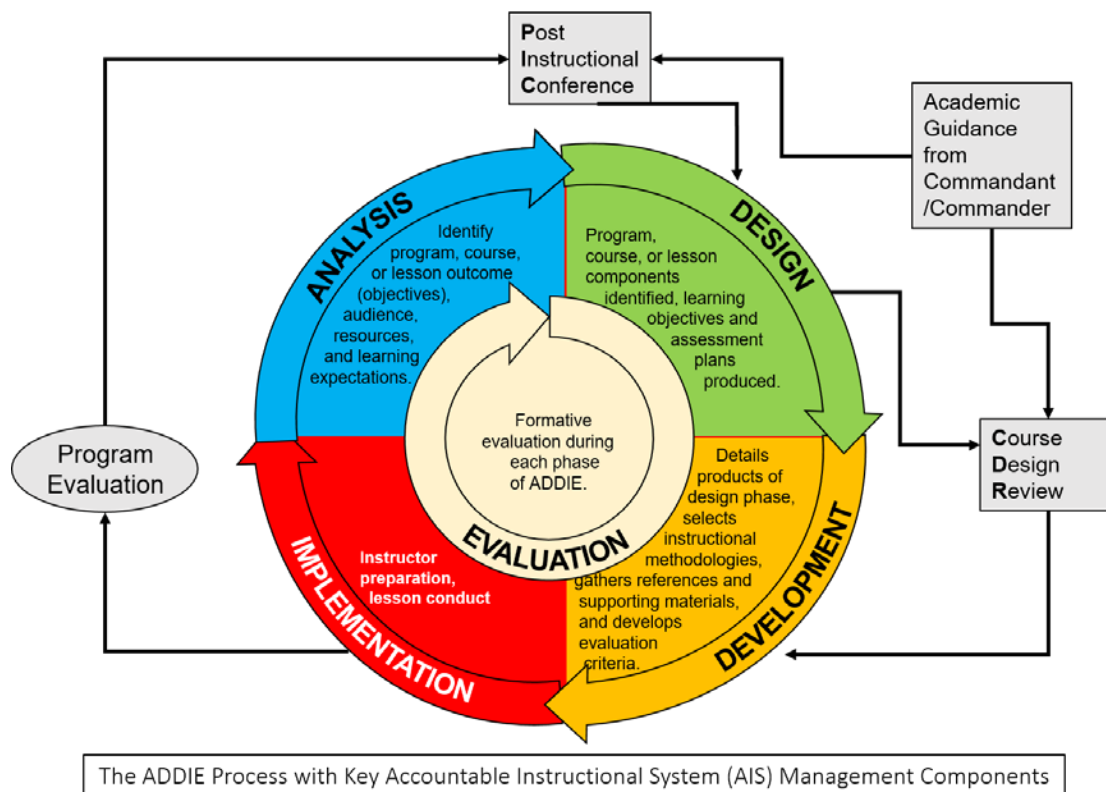


Figure 5-1. Accountable Instructional System Model

5-3. Accountable Instructional System (AIS)

a. The AIS is a structured yet dynamic process for evaluating and adjusting curriculum within a program ADDIE cycle. It features Post Instructional Conferences (PIC) and Curriculum Design Reviews (CDR) that enable institution leaders to make data-informed decisions based on direct and indirect assessment results. PICs and CDRs are also places to consider recommended changes based on the analysis of new doctrine, new concepts, senior leaders' guidance, and new Special Areas of Emphasis endorsed by the Joint Staff. PICs and CDRs are where program and school directors assure leaders of the following:

- (1) That a program achieved its mission in terms of course outcomes achieved and TLOs met;
- (2) That the program continues to meet the needs of both Army and Joint Force; and
- (3) That the program is prepared for success in the coming Academic Year (AY).

The AIS enables synchronization and promotes collaboration. Faculty play essential roles in shaping agendas and informing decisions about curriculum at every stage of the AIS cycle.

b. The AIS model demonstrates the continuing nature of a systems approach to curriculum development and the interdependence of the processes within the five phases of ADDIE, as depicted in Figure 5-1. The evaluation arrows in the center show 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 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. The AIS helps organize all course development activities by identifying the requirements for a block, course or program and guiding the lesson construction and delivery. It also includes the processes of determining student achievement, identifying needed course improvement, and incorporating emerging technologies.

5-4. Hierarchy of Educational Outcomes, Objectives, and Standards

a. The AIS directly supports the Army educational institution's mission by ensuring graduates achieve the broad educational outcomes that will enable them to be successful throughout the next phase of their careers. In essence, these educational outcomes describe what a graduate can do. More specifically, these outcomes loosely define the content focus for educational courses.

b. From these broad educational outcomes, Army educational institutions define TLOs for blocks of instruction and lessons to fulfill the educational requirements in each area described by the educational outcomes. The TLOs may define subordinate ELOs that specify the individual lesson requirements that support the block objectives. The standards of the ELOs define the specific content necessary to accomplish discrete knowledge requirements within the broader

context of the curriculum. Curriculum developers base ELO standards on the topics identified during the Analysis phase of the AIS process early in the curriculum development process. TLOs describe what a student should know or be able to do at the end or “termination” of a stand-alone learning block. Because topic-based education normally addresses broader learning areas that span several integrated topics over a longer instructional period than covered by a single lesson, the TLOs may describe the objective for a module or course, with ELOs addressing the lesson-specific learning. Additionally, because instruction in educational institutions often includes teaching content of one TLO simultaneously with related or supporting topic areas from another TLO, a single lesson may address parts of more than one TLO, with final achievement of the TLOs occurring at the end of the course. For example, an educational institution might have a TLO for a history block of instruction addressing the warfare innovations during the inter-war period. During a lesson on the development of airpower during that time, students are also required to demonstrate elements of the Critical Thinking TLO as well as elements of the Effective Communications TLO. Students will not normally accomplish these TLOs within a single lesson but rather will collectively accomplish them at the end of the module or course. Figure 5-2 depicts the hierarchical relationship of these important elements of the educational system. See TR 350-70 for how learning step activities support learning objectives.

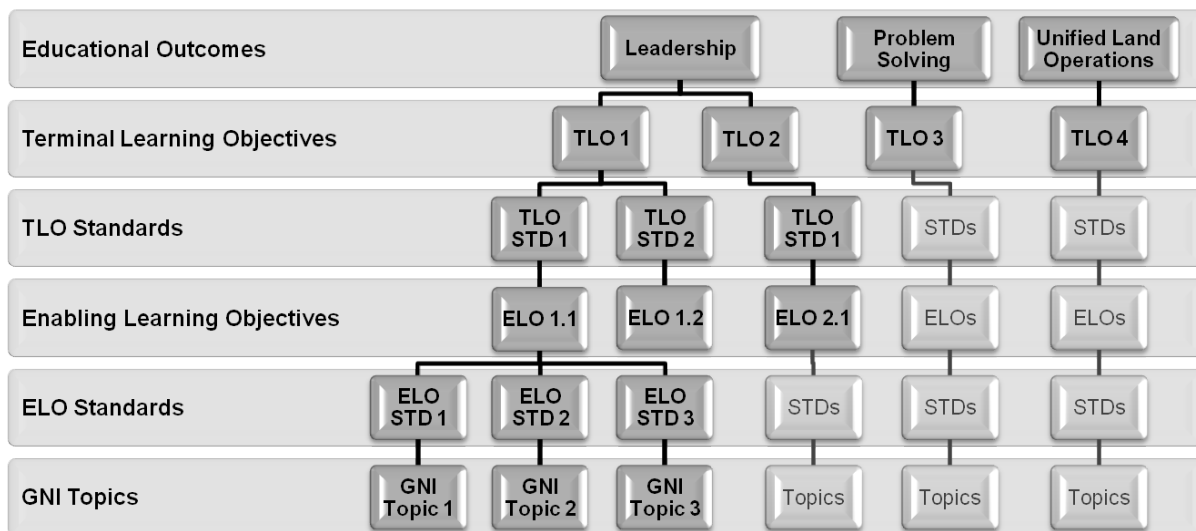


Figure 5-2. Sample educational objectives hierarchy

c. Curriculum mapping is an essential curriculum development activity within the Design Phase of a program’s ADDIE cycle, and an important component of a course assessment plan. It is the process of diagramming a curriculum to demonstrate alignment of lesson objectives → block / course learning objectives → program outcomes. Curriculum maps also demonstrate the alignment of TLOs and program outcomes with Army General Learning Outcomes and Joint Learning Outcomes (if applicable). Curriculum maps enable curriculum developers and directors to do the following:

- (1) Identify gaps, redundancies and misalignments;

(2) Visualize and evaluate where specific learning outcomes and learning objectives are introduced, reinforced, and assessed; and

(3) During PICs and CDRs, provide evidence that direct assessment results for specific ELOs demonstrate achievement of aligned TLOs and program outcomes.

5-5. Learning Objectives and Learning Domains

a. Objectives are the cornerstones of learning. Curriculum developers develop objectives for all levels of instruction where measurement of learning is required. One of the most common ways to categorize types of learning is according to the following learning domains:

(1) 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.

(2) Affective domain. The affective domain concentrates on emotions, beliefs, attitudes, values, and feelings.

(3) Psychomotor domain. The psychomotor domain consists of manual or physical activity to achieve a learning objective. There are five learning levels in the psychomotor domain. These levels are imitation, manipulation, precision, articulation and naturalization.¹⁷ Educational institution instruction focuses on the cognitive and affective domains as reflected in the learning objectives; consequently, the educational lesson plans identify expected cognitive and affective learning levels as appropriate. The psychomotor learning domain applies predominately to a training environment. Educational institutions typically do not include the psychomotor learning domain in their curricula.

b. Relationship between learning domains and levels of learning. Each of the learning domains comprises identifiable levels that progress from the lowest level through increasingly more complex levels, and finally to the highest complexity level. The cognitive domain identifies six levels: knowledge, comprehension, application, analysis, synthesis, and evaluation.¹⁸ The progression goes from simple recall or recognition of facts at the lowest level, through increasingly more complex and abstract mental levels, to the highest order that Bloom classifies as evaluation. Similar levels of learning within the affective domain progress from receiving at the lowest level, to characterizing by value or value complex at the highest level. The affective domain identifies five levels: receiving, responding, valuing, organization, and characterization by a value complex.¹⁹ The levels are situated within the emotions and feelings related to the acceptance or rejection of the educational event content.

¹⁷ Richlin, L (2006) *Blueprint for Learning: Constructing College Courses to Facilitate, Assess, and Document Learning* and Ingenkamp, K. (1969) *Developments in Educational Testing*” Volume 1

¹⁸ Bloom, B. S., Engelhart, M. D. Furst., E. J., Hill, W. H., & Krathwohl, D. R. (1956). *Taxonomy of educational objectives; the classification of educational goals. Handbook I: Cognitive domain*. White Plains, NY: Longman.

¹⁹ Krathwohl, D. R., Bloom, B. S. Masia., B.B. (1964). *Taxonomy of educational objectives; the classification of educational goals. Handbook II: Affective Domain*. New York: David McKay Company.

c. Relationship between a learning objective action verb and the level of learning. Certain words tend to imply certain types of behavior. For example, “Name” requires the student to recall the name of a person, place or thing. “Describe” requires the student to know what the person, place or thing is, as well as go a step higher and give examples of the person, place or thing. “Give examples” requires a higher level of cognition on the part of the student, and this elevates the learning level. Instructors and curriculum developers select only one appropriate action verb that corresponds to the learning level of the learning objective per TLO or ELO. The action verb indicates the expected student behavior and it should be specific instead of vague or generalized. The action verb in any objective should be observable, measurable, and reliable. Although action verbs are an indication of the level of learning expected, looking at the total behavioral statement (action statement, condition, and standard) will accurately determine the learning objective level.

d. The cognitive domain deals with acquiring, recognizing, and manipulating facts, developing the intellectual skills to effectively breakdown these facts into their components, and to recognize the relationships of the components and how they are organized. These developmental levels are knowledge, comprehension, application, analysis, synthesis, and evaluation. Knowledge is the recall/remembering of previously learned materials (facts or theories) in essentially the same form as taught. Comprehension is seeing relationships, concepts, and abstractions beyond the simple remembering of the material. Application is the ability to use the appropriate learned material in new and concrete situations. Analysis is 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. Synthesis is 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. Evaluation is 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 hierarch because it involves elements of all the other categories, plus conscious value judgments based on clearly defined criteria.

e. 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. Internalization refers to the process whereby a person’s affect toward an object passes from a general awareness level to a point where the individual internalizes the affect which then consistently guides or controls the person’s behavior.²⁰ Without this internalization, the new material does not become part of the student. In the end, internalization is key because it is both a destination and journey of student learning.

²⁰ Seels, B. and Glasgow, Z. (1990). Exercises in Instructional Design. Columbus OH: Merrill Publishing Company.

Chapter 6

Assessment of Student Learning

6-1. Introduction

a. The overall purpose of academic assessment is to measure students' success in achieving the educational learning outcomes in a program of study. Each academic program within a school will measure student achievement against published and measureable educational learning objectives. A list of benefits of effective learning assessment is below:

- (1) Provides formative and summative feedback to students.
- (2) Assures faculty and leaders that students met learning objectives and learning goals.
- (3) Produces data, the analysis of which informs evidence-based decision-making within school and program curriculum development processes.

b. ADDIE is central to effective assessment programs. Educational institutions translate topics identified during the Analysis Phase into course outcomes and TLOs at the outset of Design Phase. Then, curriculum developers identify valid and reliable measures to assess students' achievement of learning objective standards. Assessment plans specify what, how, whom, and when assessments occur during the upcoming academic cycle. Assessment plans also identify how educational institutions will analyze, present, and discuss data to derive insights and recommendations. During the Development Phase, courseware development includes assessment instrument(s) that measure achievement of learning objective(s) at the prescribed learning level. During the Implementation Phase, faculty members conduct effective course-level direct and indirect assessment of student learning. After analysis of results, program directors use assessment data during mini-PICs, PICs, and CDRs to (1) assure leaders they are meeting learning outcomes; and (2) ensure that curricula review and continuous improvement processes are data-informed.

c. Course and program assessment instruments should effectively measure achievement of the standards described in the course learning objectives. The determining factor influencing the development of an appropriate assessment instrument is the learning level of the assessed objective. For example, if the level is "comprehension", then the assessment for measuring student understanding should correspond to that learning level; the assessment should not be at a higher or lower learning level. An appropriate assessment of achievement of a learning objective at the "comprehension" level could be to ask students to describe or to summarize a concept.

6-2. Characteristics of Effective Learning Assessment Programs

The Joint Institutional Research and Evaluation Coordinating Committee — a sub-committee of the CJCS Military Education Coordination Council — maintains a set of guidelines for PAJE teams' use when evaluating an institution's assessment of student learning processes. These guidelines include the following statement: "Effective learning assessment programs are useful,

planned, systematic, sustained, and make use of existing processes as much as possible while limiting the amount of additional effort required of faculty and students.”²¹

a. An effective assessment program is useful. Data gathered through direct and indirect assessment measures should be meaningful and directly aid in curricular decision-making processes.

b. Indicators that an assessment program is useful include the following —

(1) Changes in curricular materials and classroom activities led to improved student learning;

(2) Assessment data backs documented curriculum changes;

(3) The institution shares and discusses assessment trends within its faculty development program;

(4) An institution can point to examples where learning assessment results influenced strategic plans and the institution’s allocation of resources; and

(5) “Utility” as a criterion to inform an institution’s on-going evaluation of assessment and curriculum development policies, processes, and practices (the “E” in ADDIE).

c. An effective assessment program is planned. Assessment of students learning for the coming academic period is carefully determined, documented, and communicated with all stakeholders. Institutions should include discussions of assessment results in published agendas and minutes for appropriate governance bodies.

d. Indicators that assessment programs are planned include —

(1) Published sets of relevant, measurable learning objectives mapped to program/course learning outcomes, which, in turn, map to Army General Learning Outcomes and Joint Learning Areas/Objectives.

(2) Documentation that each program/course identified particular assessment measures for specific learning outcomes/learning objectives to assess during future academic terms or academic year(s).

(3) There are slides and meeting minutes demonstrating that faculty and leaders share and discuss the analysis of assessment results.

(4) Documentation indicating that evidence-based curriculum changes included plans to assess the positive impact of those changes on future students’ learning.

²¹ “Guide to Student Learning (Standard 3) and Program Effectiveness (Standard 4) During a PAJE Review,” authored by the Joint Institutional Research and Evaluation Coordinating Committee, and released by Joint Staff J7 December 2017.

e. Sustainment of an effective assessment program. This occurs by grounding the assessments plan in the institutional culture, educating all stakeholders, building staff and faculty support, collecting feedback, and continuously improving processes. Sustainability occurs when everyone in the institution acknowledges the existence of the assessment program, understands its intent, and supports its processes and goals.

f. Indicators of institutions and programs committed to sustaining effective assessment include:

(1) Policy documents that promote both the effective assessment of student learning and use of assessment data to inform curriculum planning processes;

(2) Evidence that faculty understand and practice good learning assessment, and they participate in the meetings that interpret results and recommend change; and

(3) Evidence that curriculum committees and governance forums, where appropriate, include longitudinal analysis of assessment data in their agendas and discussions.

g. An effective assessment program leverages existing processes. Assessment activities should minimize the burden placed on students, faculty, and staff. Organizations develop assessments that are focused, deliberate, and systemic while taking advantage of the institution's culture and existing processes and governance structures. Appropriate automated processes can be a significant part of assessment programs.

6-3. Assessment-Related Requirements for Army Educational Institutions

a. Schools will award grades based on how well students achieve course learning objectives and program goals.

b. Schools will establish policies and procedures for recording and safeguarding assessment instruments.

c. Schools must maintain the confidentiality of students' grades and academic transcripts. Faculty and students will not publicly post grades identifiable by name, or provide a student's grades to any other student.

d. 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 improve the consistency of student coaching and counseling across multiple blocks/themes/phases of a program of study.

e. Schools will ensure that at the beginning of the instructional period faculty review with students the assessment plan, assessment instruments, and the manner in which instructors will assess students' performance.

- f. Schools will design assessment instruments to:
 - (1) Provide feedback to students on academic performance.
 - (2) Inform the faculty about what students have and have not learned.
 - (3) Improve the capacity of students to identify good work, thus improving their self-assessment or discrimination skills with respect to work submitted.
 - (4) Assist faculty in selecting students for recognition through academic and/or performance awards.
 - (5) Assess student work and participation in a manner that is fair and equitable.
 - (6) Provide feedback to personnel management systems.
- g. Establish quality assurance measures for graduation requirements.
- h. 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.
- i. Schools will establish student's grades access policies and procedures so faculty are able to effectively monitor a student's overall academic progress.
- j. Schools will publish guidelines on academic ethics and academic misconduct.

6-4. Student Grading System/Standards

Each school will implement grading standards. Grading standards serve as a clear and consistent basis for student assessment of clearly specified learning objective standards.

6-5. Rubrics²²

Use of rubrics enhances student learning and improves assessment program quality.

a. A rubric is a set of guidelines to promote the consistent evaluation of attainment of learning outcomes or learning objectives against published criteria. Rubrics clearly define academic expectations for students and help to ensure faculty consistency in the assessment of academic work from student to student, assignment to assignment, or course to course.

b. Rubrics describe the specific learning outcomes for which students must show proficiency to meet standards in an evaluative requirement. This sets clear expectations for students and describes, "what right looks like" for faculty. The results include better calibration of grading, support of faculty development, and transparency for students. Rubrics facilitate the grading process, especially for new faculty members. Army educational institutions should not make

²²"Assessing Student Achievement (Standard 3) and Program Effectiveness (Standard 4) During a PAJE Review," authored by the Joint Institutional Research and Evaluation Coordinating Committee, June 2017.

rubrics prescriptive, but rather should use them to serve a descriptive role in assessing learning outcomes. Faculty have an important role in applying their professional judgment when subjectively assessing student performance against a published rubric. Best practice includes faculty norming session(s) with rubrics to clarify expectations and to align the rubric with an assignment.

c. While there is no specified format, at a minimum each rubric should contain the following:

- (1) Key evaluative criteria (e.g. content, organization and style);
- (2) Levels of mastery (e.g. unsatisfactory, satisfactory, and superior); and
- (3) Broad descriptions of observable performance characteristics for each evaluative criterion across the levels of mastery.

d. Neither TR 350-70 nor the OPMEP mandate use of rubrics. They are, however, an education best practice for assessing students and programs. Education programs should consider rubrics for assessing student learning, particularly during evaluated or capstone experiential events (e.g. exercises or oral comprehensive exams).

6-6. Feedback to Students on Assessments

Assessment feedback is an essential part of the learning process. Army educational institutions place a premium on formative assessment, an on-going review and feedback by the instructor/peers/individual student of student performance during the learning process. Feedback influences any adjustments the student may need to make to achieve the learning objectives and outcomes.

Chapter 7 **Evaluation**

7-1. Introduction

TR 350-70 defines evaluation as a systematic continuous method to appraise the quality, efficiency, and effectiveness of a program, process, product, or procedure. All Army learning institutions conduct formative evaluation continuously within the ADDIE curriculum development process, and perform annual self-assessments using AEAS. Some institutions gather and analyze data, and submit annual reports to Joint Staff J-7 and their regional accrediting body. Every three years, Army educational institutions conduct more formal, summative evaluations of their academic programs' quality and effectiveness, and use those evaluations: (a) to assure leaders that institutions have met learning outcomes, and (b) to drive program improvements within the institution's AIS and other academic governance processes.

7-2. Formative Evaluations

a. Learning product quality control. TR 350-70 mentions “evaluation” most frequently in the context of learning product quality control during each phase of the ADDIE process. This form of formative evaluation is continuous.

b. Annual self-assessment using AEAS ensures compliance with Army regulations and policies. The TRADOC Quality Assurance Office is responsible for promulgating these standards and provides rubrics to assist with an institution’s review. Appendix B provides an example of an AEAS rubric for the Faculty and Staff Development Standard, AEAS-6.

c. Development and use of mission-based “indicators of institutional effectiveness.” Educational institutions identify specific measures of institutional effectiveness—and specific evaluation criteria for program reviews—based on mission, strategic priorities, learning goals, student and faculty characteristics, and commandant/commander’s guidance. Institutions with Joint or regional accreditation also draw upon their accreditation criteria and annual reporting requirements to identify key performance indicators.

d. Annual reports for Joint Staff J-7 and regional accrediting bodies. Army educational institutions with JPME I and JPME II courses must file an annual report as of 1 October titled the, “Student/Faculty Report to the Joint Staff”. CJCSI 1800.01E OPMEP, Appendix A to Enclosure B outlines report requirements. Additionally, regional accrediting bodies establish annual reporting requirements for member institutions.

7-3. Summative Evaluations (Academic Program Review)

a. Per TR 350-70 (Army Learning Policy and Systems) and TR 11-21 (TRADOC Implementation of the Army Quality Assurance Program), Army educational institutions conduct formal evaluations of their academic programs every three years. In addition to the longitudinal analysis of student assessment data discussed in Chapter 6, the triennial program reviews look at other important factors bearing on academic quality and program effectiveness. These other factors include the following:

(1) The alignment of learning outcomes with Army General Learning Outcomes and Joint Learning Areas/Objectives;

(2) Faculty and student scholarship;

(3) Faculty development and professional engagement;

(4) Assurance that resident and non-resident students achieve the same learning outcomes;

(5) The sufficiency of library resources and learning facilities;

(6) The sufficiency of education technology; and

(7) The sufficiency of non-academic support services for students and their families.

b. Neither TR 350-70 nor this pamphlet prescribe one format for triennial program evaluation plans and program evaluation reports. Each institution establishes templates and guidelines in policy documents the commander/commandant or designated official (e.g. chief academic officer) approves. All accrediting bodies should expect to find evidence of a systematic, fully functioning academic program review process that assures leaders the program is compliant with policy and guidance, achieves approved learning outcomes, enables evidence-based curriculum improvement, and ensures all Army courses and programs remain relevant and meet stakeholders' needs.

Appendix A

References

Army publications and forms are available at the Army Publishing Directorate (APD) website, <http://www.apd.army.mil/>. TRADOC publications and forms are available at the TRADOC Publications website, <http://www.tradoc.army.mil/Publications.asp>. Joint publications are available at the Joint Electronic Library website, <http://www.dtic.mil/doctrine/index.html>.

Section I

Required Publications

ARs, DA pamphlets, and DA forms are available at <http://www.apd.army.mil/>. TRADOC publications and forms are available at <http://www.tradoc.army.mil/publications.htm>.

ADRP 5-0

The Operations Process

Army University, General Learning Outcomes White Paper, Educating Leaders to Win in a Complex World, (25 March 2016)

TP 350-70-3

Faculty and Staff Development

TP 350-70-14

Training and Education Development in Support of the Institutional Training Domain

TP 525-8-2

The U.S. Army Learning Concept for Training and Education 2020-2040

TR 11-21

TRADOC Implementation of the Army Quality Assurance Program

TR 350-70

Army Learning Policy and Systems

Section II

Related Publications

A related publication is a source of additional information. The user does not have to read a related reference to understand this publication.

Army Doctrine Publication 6-22
Army Leadership

ADRP 1
The Army Profession

ADRP 5-0
The Operations Process

AR 27-60
Intellectual Property

AR 350-1
Army Training and Leader Development

AR 600-100
Army Profession and Leadership Policy

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Appendix B

Examples of Army Enterprise Accreditation Standards (AEAS) Rubrics for the Faculty and Staff Development Standard, AEAS-6

Annual self-assessment using AEAS ensures compliance with Army regulations and policies. The TRADOC Quality Assurance Office is responsible for promulgating these standards and provides rubrics to assist with an institution's review. The current AEAS rubric for the Faculty and Staff Development Standard, AEAS-6, can be found online on the TRADOC Quality Assurance Portal, <https://hq.tradoc.army.mil/sites/qao/Pages/Standards.aspx>.

Glossary

Section I

Abbreviations

ACE	American Council on Education
ACT	applied critical thinking
ADDIE	analysis, design, development, implementation, and evaluation
ADRP	Army doctrinal reference publication
AEAS	Army Enterprise Accreditation Standards
AIS	accountable instructional system
ALC-TE	Army Learning Concept for Training and Education
Army U	Army University
AWC	Army War College

CDR	curriculum design review
CGSC	U.S. Army Command and General Staff College
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
DA	Department of the Army
DLIFLC	Defense Language Institute Foreign Language Center
ELM	Experiential Learning Model
ELO	enabling learning objective
GTM	groupthink mitigation
JPME	Joint Professional Military Education
OPMEP	Officer Professional Military Education Policy
PAJE	Process for Accreditation of Joint Education
PIC	post instructional conference
PME	professional military education
QAO	Quality Assurance Office
TLO	terminal learning objective
TP	TRADOC Pamphlet
TR	TRADOC Regulation
TRADOC	U.S. Army Training and Doctrine Command
U.S.	United States
USC	United States Code

Section II

Terms

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.

Accountable Instructional System (AIS)

The CGSC ADDIE process. The AIS executes continuous evaluation of the curriculum using the ADDIE phases to ensure the learning objectives and standards remain aligned with the required

learning outcomes. Curriculum developers make necessary adjustments in every phase to ensure students achieve the learning outcomes.

Analysis Phase

The first phase of ADDIE. 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

The fifth and last step of the Army Experiential Learning Model: the "check on learning". The "apply" step is similar to the Assessment, and 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.

Assess

A process for determining the current or projected training proficiency status of leaders and Soldiers and for identifying how to improve training proficiency and the training process. (AR 350-1)

Assessment

The Assessment Plan defines the measurement of student learning and is contained within every lesson plan. Refer to Appendix A of a Lesson Plan for examples. 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 instructor may delay the assessment, 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 may be either formative or summative. Do not confuse assessment with evaluation, which examines programs and courses — and not students.

Block of instruction

One or more related units or modules grouped to cover course major subject or task areas.

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 break down these facts effectively into their components, and to recognize the component relationships and how they are organized. Six developmental levels describe the cognitive domain: knowledge, comprehension, application, analysis, synthesis, and evaluation.

Concrete Experience (CE)

First step of the Army Experiential Learning Model. The CE serves as a trigger related directly to experience and knowledge, and serves 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 a higher domain while providing a common "experience" to which those students can connect 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.

Design Phase

The second phase of the AIS. The design phase uses the results of the analysis phase to help identify the lesson components. Curriculum developers translate topic lists into realistic ELO and standards that define the ELO action statement.

Development Phase

The third phase of the AIS. In this phase, curriculum developers convert the ELO, standards, and lesson content outline into an actual lesson plan and advance sheet.

Develop

The 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.

Evaluate

A systematic, continuous process to appraise the quality (or determine the deficiency), efficiency, and effectiveness of an individual. (AR 350-1)

Evaluation

Examination of the effectiveness of a course or program. Evaluation may be either formative or summative. Instructors/curriculum developers should not confuse evaluation with assessment, which measures the performance of students.

Evaluation Phase

The fifth phase of the 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)

The Army Experiential Learning Model is the principal tool for the delivery of instruction in several Army educational institutions. The ELM serves as a framework for planning the conduct of a lesson. It consists of five steps: CE, publish and process), generalize new information (GNI), develop (value), and apply (check on learning). Prominent educational theorists such as

John Dewey, David Kolb, Jean Piaget, Kurt Lewin, and others provided the historical basis for the ELM.

Facilitate

A process for adapting teaching to what students know and how they learn, where the facilitator encourages the sharing of experiences/knowledge between students.

Foreign Disclosure

The conveying of classified military information and controlled unclassified information 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 controlled military information and controlled unclassified information. The Army authorizes FDOs for appointment to the lowest command level that is the proponent for Army-created, developed, or derived classified military information and controlled unclassified information.

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.

General Learning Outcomes

General learning outcomes are a general statement for a cohort that identifies essential knowledge, skills and attitudes resulting from training, education and experience at each level along the career continuum of learning. General learning outcomes are to help provide a focus on learning activities for developing individuals with the Army competencies and behaviors described in the ALM.

Generalize New Information (GNI)

Third step of the Army Experiential Learning Model. The GNI is where an instructor teaches the lesson content. The content the instructor teaches must focus on those aspects that are essential to achieve the learning objective standards. The curriculum developer must consider both content and methodology when developing 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 specific performance or action statements from broadly stated course outcomes or educational outcomes. The goal analysis determines the domains of knowledge that curriculum developers encompass in the course outcomes, which may also include a list of the subjects the student must learn. These performance or action statements can then be broken down into skill and knowledge components and translated into learning objectives from which to base the design and development of lessons that comprise the course.

Implementation Phase

The fourth phase of the 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 is the actual conduct of the course.

Instruct

A process where an instructor imparts knowledge based upon approved curriculum and where students adapt to learn new knowledge.

Learner-centric

Learner-centric education broadly encompasses methods of teaching to shift the focus of instruction from the teacher to the student. Student-centered instruction focuses on skills and practices that enable lifelong learning and independent problem solving.

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.

Learning Outcome

A learning outcome is a statement that indicates the level and type of competence a learner will have at the end of a course. Furthermore, it is the specification of what a student should learn as the result of a period of specified and supported study.

Lesson Plan (LP)

The author's means of communicating lesson intent to the instructors. The lesson plan organizes what the instructor presents in the lesson as well as when and how the instructor presents it.

Mentor

A mentor is a leader who assists personal and professional development by helping a mentee clarify personal, professional, and career goals and develop actions to improve attributes, skills, and competencies. (This definition originated in Field Manual 6-22 and Army Doctrine Publication 6-22 has superseded that.)

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.

Problem Solving

Problem solving involves situation assessment (understanding), imagining (visualizing), and converging on a solution (directing). (This definition originated in Field Manual 6-22 and superseded by Army Doctrine Publication 6-22)

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

The second step of the Army Experiential Learning Model. The “publish and process” step is the critical link between the CE 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 “publish and process” step may also reveal student bias and other preconceptions that an instructor must deal 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 instructor judge the work? 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 the student needs to accomplish, a performance scale that describes each level of the performance or points the instructor should assign, criteria that define the conditions of successful performance, and standards that describe how well the student met the criteria.

Resource Analysis

A component of the Analysis Phase in which the developer or 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 uses the following elements to inform curriculum design, development, and implementation. Potential elements identified during a target audience analysis include: Characteristics, knowledge, existing experiences, abilities, attitudes, reading grade level, workplace conditions, demographics, Armed Services Vocation Aptitude Battery (ASVAB) scores required for the job, computer or device literacy, size of population, location(s) of population, maturity, motivation to learn, and interests.

Teach

Any manner of imparting information or skill so others may learn.

Topic

A discrete piece of content that is about a specific subject and has an identifiable purpose. Topics describe the standards of the learning objective.

Topic Analysis

A component of the Analysis Phase. Topic analysis uses the general statement of what the learner needs to know for successful job performance, and breaks it down into measurable performance or actions (such as specific intellectual skills or cognitive procedures) that will enable the learner to demonstrate mastery of the knowledge content.

Train

A structured process designed to increase the capability of individuals or units to perform specified tasks or skills in known situations. (Department of Defense Instruction 1400.25 - V410, AR 350-1).