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ANDRAGOGY AND PEDAGOGY THEORIES OF LEARNING IN

JOINT PROFESSIONAL MILITARY EDUCATION

by

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Abstract

This paper examines how the Department of Defense incorporates pedagogical and andragogical theories of learning within Professional Military Education. The goal is to show how both theories are used in a blended capacity to meet the needs of joint military leaders. This research examines each theory and its fundamental design in an attempt to determine if pedagogy alone can meet this need through an instructional format, or if andragogy, and its learner-driven format can be blended into the curriculum to create a more productive and effective experience for the learner. By understanding the needs of military learners and applying it to the Continuum of Learning and Air Education and Training Command's First Principles of Learning in a practical environment, we can see that andragogy with its learner-driven and experiential base are necessary in Professional Military Education. However, due to the complex requirements of both the organization and learner, a pedagogical approach is often necessary—therefore a blended pedagogy/andragogy approach is critical.

ANDRAGOGY AND PEDAGOGY THEORIES OF LEARNING IN

JOINT PROFESSIONAL MILITARY EDUCATION

The United States Department of Defense is composed of four primary military services, each operating with distinct mission sets in their primary domain. These services are the United States Army, Marine Corps, Navy and Air Force. All four services provide extremely effective contributions from their own perspective to the national defense of the United States and its strategic objectives within the international community. However, to gain maximum results and efficiencies, the Department of Defense strives to use these services in a joint capacity, capitalizing on the collective strengths of the full joint service spectrum. This joint effort requires tremendous amounts of training and education to be effective and is heavily influenced by leadership throughout the joint spectrum. To this point, Joint Professional Military Education is an essential element of force development and serves to prepare military leaders to be effective in joint environments. But how, given the previously stated differences in mission sets and domains of operation, can we best address the requirements for joint leadership in the education and training environment?

Joint Professional Military Education, though heavily based on pedagogical teaching methods, would better meet the requirements of joint leaders by using a blended methodology of pedagogy and andragogy due to the complex and diverse needs of adult learners. Training and educational environments can be designed and tailored for adult learners by better understanding these teaching methodologies. This is supported by further analyzing the actual requirements for joint military leaders, examining andragogy and pedagogy as theories of learning, and in exploring options for practical application within our existing academic and training structure.

JOINT MILITARY LEADER REQUIREMENTS

Given the disparity in mission sets and primary domains of operation for each service, it

is necessary to first identify a common core of requirements for military leaders. Title 10,

United States Code, Chapter 107 establishes the baseline of material to be covered in joint

professional military education. This baseline includes: national military strategy, joint planning

at all levels of war, joint doctrine, joint command and control, and joint force requirements

development.[2] Additionally, Title 10 Chapter 7 identifies advanced requirements for later phases

of education to include a focus on developing joint operational expertise and perspectives, and

honing joint warfighting skills to prepare leaders to perform effectively in an assignment to a

joint, multiservice organization. These requirements are designed to progress leaders from a

basic knowledge of joint matters to the level of expertise necessary for successful performance in

the joint arena.[3]

Chairman of the Joint Chiefs of Staff Instruction 1800.01E, *Officer Professional Military*

Education Policy (OPMEP), dated 29 May 2015, states Joint Professional Military Education is a

subset of Professional Military Education.[4] It further states, "Joint leader development for the

21st century is the product of a learning continuum comprised of training, staff and operational

experience, education, and self-development to produce the most professionally competent

(strategic-minded critical thinking) individual possible. Fundamental to Joint Leader

Development are a universally applied set of Desired Leader Attributes (DLA) over time to

achieve the desired outcomes."[5] These DLAs include the ability to:

1) Understand security environment and contributions of all instruments of national power
2) Anticipate and respond to surprise and uncertainty
3) Anticipate and recognize change and lead transitions
4) Operate on intent through trust, empowerment, and understanding essentials of command
5) Make ethical decisions based on the shared values of the profession of arms

6) Think critically and strategically in applying joint warfighting principles and concepts of joint operations

CJCSI 1800.01E also accurately addresses the non-exclusivity of training and education, pointing out that all military schools and professional development programs contain elements of both. It is necessary to approach each of these efforts with coordination to develop personnel across the joint learning continuum, with military members achieving progressively higher levels of skill and competence along the entire timeline of their service.[6] The concept of maintaining close coordination between these two distinctive activities, training and education, ensures a basic core of fundamentals among leaders, while allowing flexibility to adapt to changing scenarios and challenges.

The requirements of joint leadership target development in three specific common abilities and skills; effective leadership, management, and supervision. These core abilities and skills are critical, with applicability across the joint service spectrum. Professional Military Education aims to meet these requirements by developing strategic thinkers, planners, and warfighters. However, this effort is presented with challenges as we consider the diverse mission sets of each service. The United States Army's mission is to fight and win our nation's wars by providing prompt, sustained land dominance across the full range of military operations and spectrum of conflict in support of combatant commanders.[7] The United States Navy's mission is to maintain, train and equip combat ready naval forces capable of winning wars, deterring aggression and maintaining freedom of the seas.[8] The United States Marine Corps' mission is to seize or defend advanced naval bases and to conduct such land and air operations as may be essential to the prosecution of a naval campaign.[9] The mission of the United States Air Force is to fly, fight, and win in air, space, and cyberspace.[10] Each service trains and educates its personnel to meet specific core competencies enabling the accomplishment of their respective mission.

Considering the tremendous disparity between each service's mission, and subsequent training requirements to meet that mission, it is imperative the Department of Defense maintains focused coordination on the development of joint leaders. This focus and coordination is critical for the United States to be successful in joint operations.

The methods of training and educating service personnel have a significant impact to the success of each service, impacting the overall effectiveness and efficiency of the training and education received. It is important to understand the theories of learning because of this relationship, specifically pedagogy and andragogy. Pedagogy, as a theory of learning, has formed the basis of our educational approach and remains constant in the shaping of our educational and training environments. However, assuming military personnel and leaders are adult learners with complex learning requirements, it is important to also understand andragogy and its potential benefits when blended into the environment.

THEORIES OF LEARNING (PEDAGOGY AND ANDRAGOGY)

A theory can be defined as a comprehensive, coherent, and internally consistent system of ideas about a set of phenomena. Learning is the act or process by which behavioral change, knowledge, skills, and attitudes are required.[11] These definitions seem to make sense from a broad and logical viewpoint. However, learning theorists continue to debate and study the process of learning in an attempt to formulate a generally more accepted understanding of this phenomenon. Theodore L. Harris and Wilson E. Schwahn, stated in *Selected Readings on the Learning Process* "learning is essentially change due to experience."[12] Lester D. Crow and Alice Von Bauer Crow said in *Readings in Human Learning* "learning that occurs during the process of change can be referred to as the learning process."[13] Some theorists draw a distinct difference between planned learning and natural growth. Robert M. Gagne stated in *The Conditions of*

Learning, "learning is a change in human disposition or capability, which can be retained, and which is simply ascribable to the process of growth."[14] Abraham H. Maslow, known largely for his studies in motivation and personality, saw the goal of learning to be self-actualization, or a person's need for full use of talents, capacities, and potentialities.[15] The range of concepts associated with the learning process indicate the complexity and challenge in defining a simple and commonly accepted definition of learning.

Early studies of learning were primarily conducted by experimental psychologists, who required strict control over variables. Unfortunately, this necessary control was more easily attained with animals and children, so many scientific theories are derived from the study of learning by animals and children.[16] The pedagogical ideology and approach is a result of these early studies. The term 'pedagogy' comes from the Greek words *paid*, meaning "child" and *agogus* meaning "leader of." Thus pedagogy literally means the art and science of teaching children.[17]

Pedagogy is a content model primarily concerned with the transmittal of information and skills in a teacher driven environment. The six core basics of pedagogy are[18]

1) learners learn what the teacher teaches
2) learners are dependent on the teacher
3) learner's experiences are of little value or nonexistent
4) learners learn because they have to
5) learners are subject centered and
6) learners are externally motivated.

The Pedagogy model is commonplace in classrooms around the world where teachers decide in advance what needs to be learned, the method of delivery, when it will be delivered, and determines the effectiveness of how well it was received by the learner. In a pedagogical environment the student's individual desired learning goals are noticeably absent. He is not given a voice in the development of course flow or curriculum and is fully dependent on the

teacher. This does not mean that students do not interact with the teacher, only that interaction is done within the terms, goals, and objectives as identified by the teacher. Pedagogy is not very flexible and is unable to be shaped and reshaped to meet the individual needs of a diverse group of students. In some situations, those requiring specific instruction, direction, and guidance, this approach is effective and maybe even necessary. However, with regard to adult learning and meeting the needs of military members, we should apply a more andragogical/pedagogical blended approach. This would enable opportunities for flexibility to meet the diverse needs of adult learners.

Andragogy, *andra* meaning "man, not boy", is a term used to describe the art and science of helping adults learn.[19] At the core, andragogy is a process model and strives to include the learner in a collaborative planning process to identify what she needs to know before engaging in learning. The core principles of andragogy are[20]

1) Learners need to know the benefits of learning
2) Learners are capable of self-direction
3) Learner's experiences are valued and aid in the teaching/learning transaction
4) Learners learn because they want to
5) Learners are life (task or problem) centered and
6) Learners are internally motivated.

This is a more interactive learning approach compared to pedagogy's reactive learning approach. It also increases the effectiveness of the learning process by including the learner and taking into consideration the learner's needs. Some assumptions of this model are that adult learners are able to identify what they need to learn, and will take the initiative to learn the necessary lesson, material, skill, or behaviors. In direct contrast to pedagogy, a learner's previous experiences are taken into consideration and aid in shaping the learning experience. In andragogy, learners identify the specific challenges, problem sets, or tasks they desire the learning activity to address. These core assumptions create a buy-in for learners and result in motivation to pursue knowledge

toward the target subject. Nonetheless, andragogy alone is not the answer to the requirements of

developing joint leaders. Joint Professional Military Education requires a deliberate and focused

blend of pedagogy and andragogy to be effective in application. This is due to a need of both

instructional (pedagogy) and experiential (andragogy) based requirements.

PRACTICAL APPLICATION

An AETC Vision for Learning Transformation discusses the challenges and opportunities

presented to the military academic environment. These challenges and opportunities are brought

on by a requirement to operate in the near future with significantly less resources due to the

constrained fiscal environment. The article specifically addresses the significant shifts that will

be required to remain at the forefront of training and education in this environment. These

changes will include updates to outdated training models, processes, policies, and procedures.

The basic ideas used in this vision to construct a conceptualized learning environment are

reflected in what Air Education and Training Command identify as the First Principles of

Learning:[21]

> 1) the Air Force learning environment is adaptable
> 2) the learning environment is effective and efficient in meeting validated learning
>   objectives, protecting Airmen's time, and minimizing cost
> 3) technology is leveraged to deliver the most innovative learning environment possible,
>   standardized across the Air Force
> 4) learning is available anytime and anywhere
> 5) students are responsible for their own learning
> 6) instruction is more interactive, self-paced where possible, and appropriate to the
>   desired outcome.

The First Principles, as identified by AETC, reflect images from both pedagogical and

andragogical approaches. Although this vision is from an Air Force perspective, a closer look at

each of these principles identifies an applicable framework for how the Department of Defense

can shape the Joint Professional Military training environment to be more effective and efficient using a blended approach of the pedagogy and andragogy models.

The first principle addresses the importance of adaptability for the learning environment. This principle can be interpreted in different ways for different environments (classrooms, deployed locations, temporary duty locations, various off-site scenarios, group vs. individual opportunities, etc…) For the purpose of this paper, due to a focus on Joint Professional Military Education, I will focus on the classroom environment. In considering the learning environment we should strive to create a 'climate' conducive to learning. The term climate is stressed here because it has so many different aspects, each impacting the effectiveness of the learning environment. In the author's opinion, the two climates of most importance are the psychological climate and organizational climate.

Ecological and Social psychologists have both provided valuable information on the effects of the physical properties of the environment on learning. As humans, we require adequate provisions for temperature, ventilation, access to refreshments and rest rooms, comfortable seating, proper lighting, ability to hear and see clearly, etc… Additionally, shaping the environment to be more ergonomically friendly with room design and color schemes can directly influence moods. For example, a well designed seating plan with a brightly colored room will induce cheerful, optimistic moods, while a cramped seating plan with dark or dull colors will induce the opposite.[22] Student's orientation amongst themselves is another important aspect of room layout. Something as simple as using a round or oval table can encourage interaction among the learners, offering immediate feedback and placing an importance on the learner having an active role in the process.[23] Cognitive theorists also stress the importance of orderliness, clearly defined goals, careful explanation of expectations and opportunities,

openness of the system to questioning, and honest feedback.[24] Personality theorists emphasize the importance of creating a climate of respect for individual and cultural differences.[25] Another critical element of the environment is the richness and accessibility of resources such as computers, books, manuals, pamphlets, journals, and audiovisual aids.[26] The psychological climate remains constant and is applicable to both the pedagogy and andragogy models.

The organizational climate of a learning environment is a direct reflection of how highly an organization values the development of its personnel. This is most visible in how an organization budgets for and funds its training and education programs. It stands to reason that if an organization values development and training highly enough to support it liberally then the personnel are more likely to value it. In contrast, if development and training programs are the first to be reduced or cut during times of financial strain, then personnel are more likely to view it with less importance.[27] Bottom line—if an organization does not demonstrate a high value on the development of its personnel then the remaining components of the training and education system are jeopardized—climate setting is the most crucial element.[28] The Department of Defense has a challenge with maintaining an organizational climate conducive to learning. Unfortunately, we have already seen the impact of financial constraints in the training and educational environment with reduced training sorties, limited temporary duty for training and education, and the reduction of class offerings throughout the year. The Department of Defense needs to emphasize value in education and training to maintain a positive organizational climate.

The second principle states the learning environment should be effective and efficient in meeting validated learning objectives, protecting Airmen's time, and minimizing cost. In application within the Joint Professional Military Education environment we can gain efficiency through standardization and consolidation of resources. The Air Force's merger of the Academy

of Military Science from McGhee-Tyson Air National Guard Base into the Officer Training

School at Maxwell Air Force Base is a good example of how this has been done within the Air

Force.[29] This merger minimized cost of staff by reducing redundant positions, eliminated

operations and maintenance costs at the McGhee-Tyson site, and standardized training for

efficiency. This prompts the question, if formal Joint Professional Military Education is truly

"joint," then why does each service branch host its own school? Each service school delivers a

curriculum specific to its primary domain of operation, while hosting military personnel from

across the joint spectrum. The presence alone of personnel from the joint services does not make

the training "joint." A joint curriculum, coupled with a joint student body, is required to create a

true joint service learning environment and should be available for junior to senior levels of joint

training. Studies should be accomplished to determine the efficacy of combining these schools

into one location, while placing emphasis on the reinvestment of any cost savings into the

curriculum, facilities, resources, technology, and faculty development. Officer input and

feedback from the target year groups (ex: Captains and Majors for the command staff colleges)

should be included in the development of this school and curriculum. This will help make the

environment more effective through an andragogical approach.

The third principle aims to leverage technology to deliver the most innovative learning

environment possible. Despite the relative availability of technology to most students within the

training and education environment, this will be a significant challenge due to security

constraints and infrastructure costs. Air Education and Training Command's vision states

"technology is neither a panacea nor the centerpiece—it is an enabler that can be exploited to

make learning content more operationally relevant, engaging, individually tailored, and

accessible."[30] Capabilities currently exist to enable virtual training and education from nearly

any location throughout the globe. Infrastructure and availability should be a priority for investment, as this technology supports the training and education of military personnel impacted by reductions in temporary duty for training funds. Additionally, we should continue to focus on developing virtual training and education capabilities to offset the costs of those activities that remain too costly, due to either operational impact or other reasons, for real-world training. These advances in technology will require significant investment in infrastructure. It will also require changes to existing network tactics, techniques, and procedures along with paradigm shifting changes to computer security, transmissions security, and overall information assurance practices.

The fourth principle states that learning should be available anytime and anywhere. This will require leaders in the joint community to anticipate the changing needs of learners and adapt as necessary. This should not be a significant challenge if the organizational climate is supportive of the learning environment and values the development, training, and education of its personnel. As stated earlier, technology can be leveraged to assist joint leaders with application of this principle. Joint leaders should actively seek the feedback of its adult learners to help shape the environment into a climate conducive of both a pedagogical and andragogical approach.

The fifth and sixth principles are related and depend on students being responsible for their own learning. At first glance, this appears to be completely andragogical in nature. However, the actual learning activities and opportunities will vary, with some being instructional (pedagogical) and others being learner driven (andragogical). This principle strives to create student/learner buy-in for their own educational and training development. These principles assume the adult learner will approach their development with higher levels of maturity and

professionalism. Unfortunately, these are traits that take time and experience to develop, and the Department of Defense consists of members from all different levels of maturity and professional development. The environment will need to remain flexible enough to retain a capability to tailor learning opportunities to ensure students are actually receiving the training and education they need. A broader view is presented in Air Force Doctrine Annex 1-1 with a focus on the Continuum of Learning.

Air Force Doctrine Annex 1-1, *Force Development,* states "the deliberate process of combining education, training, and experience to produce the right expertise and competence to meet the Air Force's operational needs is the key element of developing an Airman. The continuum of learning focuses on developing Airmen who thoroughly understand the mission, the organization, and Air Force doctrine."[31] By applying this Air Force Doctrine to the joint environment we can view it as a career long process where the cumulative product of an individual's development and real-world experiences are coupled with education and training to produce joint leaders who possess the tactical expertise, operational competence, and strategic vision to lead and execute the service's mission. By viewing a service member's opportunity for learning along an entire timeline of service, from initial accession through retirement or separation, they can be equipped with a broad base of education, training, experience, and competencies to serve as joint leaders.[32] The Continuum of Learning implies that the current episodic methods of learning are not the most effective way of learning. This concept supports a blended andragogical and pedagogical approach (heavier on andragogy) to learning, and places emphasis on military member's having a more proactive role in the learning process. Air Force Doctrine Annex 1-1's guiding principles are:[33]

1) Build skill-set expertise: (andragogy) Education and training programs must be designed with the experience and current skill levels of the learners in mind. Requires learning

opportunities to be tailored to the needs of learners, recognizing previous accomplishments, and avoid wasting time on unnecessary repetition.

2) Prepare for change: (pedagogy and andragogy) Skills development should keep pace with changing operational environments and resulting changing requirements. Requires removal of barriers so that foundational material presented in formal learning environments is continually reinforced in operational environments.

3) Create depth of expertise: (andragogy) Competence and credibility require a depth of experience to provide a foundation for effective leadership. Requires learning opportunities to be less episodic and more available, with on-demand access to meet the learner's developmental needs.

4) Train to mission demands: (pedagogy and andragogy) Training to mission needs leverages both resources and duty experience. Requires those responsible for training to stay abreast of developments in the creation, design, and delivery of learning opportunities.

5) Train like we fight: (andragogy) Success hinges on practicing in the same manner we plan to execute on the battlefield. Requires less memorization and more focus on realistic scenarios and problems requiring creativity and decisive action.

6) Make training and education available: (andragogy) Education and training should be responsive to the needs of the learner. Requires creatively leveraging learning opportunities and proactive engagement from both educators and learners.

7) Validate education and training through war games and exercises: (pedagogy and andragogy) Requires use of technology to enable authentic learning opportunities.

8) Value and leverage experience: (andragogy) Joint leaders learn through experience as they apply their education and training daily to their missions and tasks. Utilizing lessons learned and best-practices can be vital in experiential learning. Requires a formal lessons learned system, personal and professional networking, and robust knowledge management systems.

In conclusion, the Department of Defense strives to gain maximum effectiveness and efficiency by using each of the separate military services in a joint capacity. This is done in an effort to capitalize on the collective strengths across the joint service spectrum, but requires tremendous amounts of training and education to be effective. The effectiveness is ultimately influenced by joint leaders and their professional development, coupled with their understanding of joint capabilities and operations. The Department of Defense aims to address the

development of joint leaders through Joint Professional Military Education programs, which are heavily based on pedagogical teaching models. By further understanding the actual requirements of joint leaders as identified in Title 10, United States Code, Chapter 107 and the Chairman of Joint Chiefs of Staff Instruction 1800.01E, we can see the pedagogical model alone is insufficient to meet these requirements. In examining pedagogy and andragogy as learning theories, we gain the understanding that the Joint Professional Military Education environment must be tailorable and designed to meet the needs of adult learners. This is a task much more suited to a pedagogical and andragogical blended approach. Finally, by analyzing *An AETC Vision for Learning* we can see through the First Principles of Learning and the Continuum of Learning how a blended pedagogical and andragogical approach is necessary for practical application.

Endnotes

[1] I did not collaborate with classmates on this paper. All errors found herein are my own.

[2] Title 10, United States Code, Chapter 107, *Professional Military Education*, 1072.

[3] Ibid., 1074.

[4] Chairman of the Joint Chiefs of Staff Instruction 1800.01E, 29 May 2015, A-1.

[5] Ibid., A-2.

[6] Ibid., A-3.

[7] http://www.army.mil/info/organization/

[8] http://www.navy.mil/navydata/organization/org-top.asp

[9] http://www.marines.com/history-heritage/our-purpose

[10] http://www.airforce.com/learn-about/our-mission/

[11] Knowles, Malcolm S., Holton, Elwood F., and Swanson, Richard A., *The Adult Learner*, 7th Ed., (New York, New York: Routledge, 2012) 10.

[12] Ibid., 12.

[13] Ibid., 12.

[14] Ibid., 12.

[15] Ibid., 15.

[16] Ibid., 18.

[17] Holmes, Geraldine., and Abington-Cooper, Michele., *Pedagogy vs. Andragogy: A False Dichotomy*, Virginia Tech Journal of Technological Studies, 2, retrieved 20 September 2015.

[18] Reynolds, Joe., *From Pedagogy to Heutagogy: A Teaching and Learning Continuum* (lecture, Air Command and Staff College, Maxwell AFB, AL, 23 September 2015).

[19] Holmes and Abington-Cooper, *Pedagogy vs. Andragogy: A False Dichotomy*, 2.

[20] Reynolds, *From Pedagogy to Heutagogy: A Teaching and Learning Continuum*.

[21] Air Education and Training Command, *An AETC Vision for Learning Transformation*, (28 February 2013) 1.

[22] Knowles, Holton, and Swanson, *The Adult Learner*, 117.

[23] Ibid., 118.

[24] Ibid., 119.

[25] Ibid., 119.

[26] Ibid., 118.

[27] Ibid., 120.

[28] Ibid., 120.

[29] *Officer Training School sets one curriculum for all Cadets*, www.airforcetimes.com, retrieved 30 August 2015.

[30] Air Education and Training Command, *An AETC Vision for Learning Transformation*, 5.

[31] Lemay Center for Doctrine, *Air Force Doctrine Document Annex 1-1, Force Development* (Maxwell AFB, AL: Air University, 15 December 2014) 5.

[32] Ibid., 5.

[33] Air Education and Training Command, *An AETC Vision for Learning Transformation*, 2.

Bibliography

Air Education and Training Command, *An AETC Vision for Learning Transformation*, 28 February 2013.

Chairman of the Joint Chiefs of Staff Instruction 1800.01E, *Officer Professional Military Education Policy* (OPMEP), 29 May 2015.

Crow, Lester D., and Crow Alice Von Bauer (eds.). *Readings in Human Learning*. New York: McKay, 1963.

Gagne, Robert M. *The Conditions of Learning*. New York: Holt, Rinehart and Winston, 1965.

Harris, Theodore L., and Schwahn, Wilson E. *Selected Readings on the Learning Process*. New York: Oxford University Press, 1961.

Holmes, Geraldine., and Abington-Cooper, Michele., *Pedagogy vs. Andragogy: A False Dichotomy*, Virginia Tech Journal of Technology Studies., retrieved 20 September 2015, available at http://scholar.lib.vt.edu/ejournals/JOTS/Summer-Fall-2000/holmes.html

http://www.airforce.com/learn-about/our-mission/

http://www.army.mil/info/organization/

http://www.marines.com/history-heritage/our-purpose

http://www.navy.mil/navydata/organization/org-top.asp

Knowles, Malcolm S., Holton, Elwood F., and Swanson, Richard A., *The Adult Learner*, 7th Ed., New York, New York: Routledge, 2012.

Lemay Center for Doctrine, *Air Force Doctrine Document Annex 1-1, Force Development*. Maxwell AFB, AL: Air University, 15 December 2014.

Officer Training School sets one curriculum for all Cadets, retrieved 30 August 2015, available at http://www.airforcetimes.com/story/military/careers/air-force/officer/2015/02/24/for-active-guard-reserve-one-officer-training-class/23934597/.

Reynolds, Joe., *From Pedagogy to Heutagogy: A Teaching and Learning Continuum* (lecture, Air Command and Staff College, Maxwell AFB, AL, 23 September 2015).

Title 10, United States Code, Chapter 107, *Professional Military Education*., retrieved 27 September 2015, available at http://www.gpo.gov/fdsys/granule/USCODE-2011-title10/USCODE-2011-title10-subtitleA-partIII-chap107.