Education and training facilitate the transition from one level of experience to the next and are critical to creating productive experiences in an Airman’s development. Force development seeks to provide experiences that deliberately develop tactical expertise, operational competence, and strategic vision. Airmen who are prepared for the experiences to come are not only better able to perform their assigned duties, but also gain more from each experience. Skills training and developmental education are foundational to preparing the Airman for developmental experiences, and it is critical to employ the proper approach. Although interdependent, education and training are fundamentally distinct in application. Education prepares individuals for dynamic environments, while training is essential in developing skill sets. Education and training are complementary and will commonly overlap; however, recognition of the distinction between them is essential to the approach taken. Training approaches applied to educational situations will be less effective, as will educational approaches applied to situations in which training is more appropriate. The following items distinguish education from training in several critical areas:

**Training** is appropriate when standardized outcomes are required. Training is focused on building specific skill sets to produce reliable, consistent results. Although skill application involves judgment, it is the purpose of training to teach skills that are associated with desired outcomes. (When repairing jet engines, for example, it is desirable to have the engine meet standardized performance measures upon completion of the repair tasks—proper training ensures a standardized, predictable outcome.) Standardization in training and evaluation helps commanders to ensure outcomes are predictable. Tasks (the tangible questions to be dealt with), conditions (the operating environment where the function is to be performed), and standards (the minimum of acceptable proficiency) are vital to the training process.

**Education** is appropriate when adaptive outcomes are desired. Education is focused on developing critical thought that enables creative solutions. Although creative thought may involve skill application, it is the purpose of critical thought to form successful solutions to new problems. (An engineer, for example, is able to design a new jet engine that exceeds all known performance measures through application of creative design concepts and unusual materials applications.)

**Training** is task dependent. Training is generally focused on a specific skill. Although specialties may be quite complex, each is composed of elements having
distinct tasks that when correctly performed lead to successful, predictable outcomes. (When operating a radar system, for example, power-up is distinct from data recall operations and each task is required, but each task is distinct in the steps taken—proper training ensures the proper steps are followed in the proper sequence to successfully operate the system.)

Education is process dependent. Education is generally focused on combining familiar and unfamiliar information to produce a suggested course of action. The intellectual demands of consolidating past experiences and ideas with new experiences and unfamiliar information to produce new ideas depend on the process of critical thought. (Radar data, for example, only becomes useful when analyzed and screened to produce relevant information—the intellect required to make sense of multiple items forms the process of critical thought.)

Training is technically specific, focusing on specific situations and the tools of that specialty. Training is intended to develop skill sets that are generally associated with specific duty requirements. While some skill sets are generally universal (such as computer skills), specialty training is specific to a particular skill set. Skill sets are generally associated with specific duty requirements and the tools of that specialty. Training is focused on specific situations and the tools of that specialty. (A tanker boom operator, for example, would not be prepared to take on the duty requirements of a pararescue Airman or vice versa—each has received training that is specific to the technical tools of his or her duties.)

Education is not dependent on a specific situation. Because education seeks to develop critical thinking skills, it attempts to prepare individuals for new experiences and new challenges. While education can readily prepare individuals for known situations, the fundamental aim is to develop individual talents to create successful outcomes in unfamiliar situations. (For example, a weather forecaster, using a comprehensive understanding of atmospherics, is able to predict weather patterns across regions around the globe.)

Training requires restrictive application. Because training is generally focused on a specific skill set, the skills learned are usually limited to the specialty related to that skill set. Training aims to instill certain specific skills that when applied in a systematic and predictable way produce predictable outcomes. Training is, therefore, generally restricted in application to the known circumstances related to the skill set. (A jet engine mechanic, for example, would not be well equipped to repair a piece of complex communications equipment any more than an electronics technician could be expected to repair a jet engine.)

Education requires transformative application. Knowledge and skills, such as critical thinking, that are cultivated during education are of great benefit in unfamiliar circumstances. Education provides the individual with logic skills that encourage creative thought and allows individuals to create new solutions to unfamiliar problems. In application, education is most beneficial when transitioning from the known to the unknown. (An engineering team, for example, confronted with the task
of repairing an unfamiliar foreign communications network devises a successful solution using equipment that is both familiar and foreign.)

- **Training** is most effective within defined parameters. Training develops skill sets and the talent to successfully cope with deviations from normal, within the bounds of the specialty. Training is skill specific and variations from those normally expected circumstances are also limited to that skill set. (An aircraft hydraulics specialist, for example, is trained to deal with hydraulic systems and expected problems, but would likely not be as successful in coping with an unfamiliar hydraulic system that experiences an unfamiliar failure.)

- **Education** is most effective outside defined parameters. The essential strength of education is to prepare individuals to create successful outcomes in unfamiliar situations. The value of education is most apparent when the individual is confronted with creating solutions beyond the set of parameters in which they may normally operate. (A hydraulic specialist, for example, relying on an understanding of hydraulic principles and system functions is able to create a solution to an unfamiliar failure.)

- **Training** is most effective in stable, expected environments. Training generally serves to impart skills necessary for success in known situations and circumstances. Circumstances that are known as normal operating environments and situations that can be anticipated may be considered as occurring within an expected environment. Training provides the skills necessary for success in stable environments. (Emergency drills and realistic exercises, for example, help develop skills to cope with anticipated scenarios under stress or in critical situations.)

- **Education** is most effective within unexpected environments. In unexpected or unanticipated situations there are no procedures or checklists to provide guidance. Skill sets generally become less applicable in scenarios that have not been seen or practiced. Education provides the tools necessary to cope with new challenges. It is in rapidly changing environments that produce unexpected problems that education can provide the mental talents to succeed. (A fire fighter, for example, when being confronted with unmanageable flames, understands the mechanics of fires to successfully egress the situation.)

- **Training** value diminishes with uncertainty. The further the situation progresses from the talents of the individual, the less effective the individual becomes in implementing a successful solution. Because training is focused on a specialized skill set, those circumstances that fall outside of the skill set produce a greater amount of uncertainty. Thus the value of skill set training is reduced in the face of uncertainty.

- **Education** value increases with uncertainty. Education provides the tools for innovation and creative thought. In circumstances of new challenges and unfamiliar situations, education can allow individuals to create solutions to reduce uncertainty.
and implement successful solutions. (Combat presents leaders with many opportunities to experience unfamiliar situations, but relying on historical precedents, lessons learned in wargames and exercises, and past personal experience, leaders can develop successful strategies and tactics to prevail.)

- **Training** is not inherent in education. Learning can take place in individuals having few specialized skills. Even in unstructured environments, learning can proceed successfully. Education involves the process of learning new concepts and/or developing logic talents to create new thought. There are many examples of successful artists creating great works without a formal training in the medium. It is creative talent that is among the most beneficial results of education.

- **Education** is inherent in training. Basic talents are critical to learning. Individuals, for example, should be able to read proficiently to access training materials. Individuals must also have a good grasp of vocabulary to understand training terms and concepts. Subjects such as reading, vocabulary, mathematics, and similar topics are the product of education. Training cannot take place without first having individuals who meet the qualifications to receive training. Training that exceeds the qualifications required of the participants is less effective.

- **Training** shows immediate benefits. Learned skills can be demonstrated almost immediately. It is often part of the training process that individuals demonstrate the skills acquired. Repetition of skills serves to reinforce those skills and provides a measure of training success. (A 'three-level' technician can be placed in positions of responsibility and produce successful outcomes as a result of training.) Training usually produces immediate effects by imparting new skills or developing existing skills.

- **Education** provides long-term benefits. Skills in critical thinking are usually not demonstrated until encountering unfamiliar circumstances. Logic skills are also developed over time through formal education and experience, thus are constantly evolving and maturing. Consequently, the benefits of education are closely linked to experience and tend to grow over time. Because logic skills are not as demonstrable as technical skills, these talents are usually not as apparent in the short term.