

## Faculty Specific Publications

### Military Science

Articles / opinion pieces about teaching for the Faculty of Military Science

**Astore, W. J. (2003). "Smart Warriors: A Rationale for Educating Air Force Academy Cadets in the History of Science, Technology, and Warfare." *Science & Education* 12(2): 185-196.**

**Abstract:** A crucial pedagogical issue facing instructors of History of Science and Technology (HST) at a military institution like the United States Air Force Academy (USAFA) is enhancing the judgment of cadets through education so that they can make informed and intelligent decisions as officers. Fundamental understanding of relationships between HST and warfare provides much needed context for making decisions in the complex technical milieu cadets inhabit. A related goal is to instill in cadets a critical attitude towards technology. Getting cadets to examine the value of new weapons technology is sometimes difficult, however. Cadets identify closely with the Air Force and the technology of flight; a critical attitude towards this technology may seem unhealthy to them, or even a form of betrayal or institutional disloyalty. Cadets nevertheless need to gain an appreciation for the context of HST, especially the dialectical interaction of science and technology with military doctrine. This paper discusses the experience of helping cadets to meet such challenges in learning HST in the context of professional military training.

**Bachkalo, B. I. (2009). "A Modern System of Professional Training in the Air Force." *Military Thought* 18(1): 104-112.**

**Abstract:** No abstract

**Baskin, R. R. L. C. and D. L. D. Schneider (2003). "Learning as a Weapon System." *Air & Space Power Journal*: 97-128.**

**Abstract:** Editorial Abstract: Instructional technologies are rapidly approaching a critical mass made up of a multitude of various systems. These technologies help us transform the military-training environment by treating learning as a weapon system. Lieutenant Colonel Baskin and Dr. Schneider take a close look at this learning process, discussing the components involved and the ways they combine to create an effective system.

**Bezuidenhout, J. (1998). "First-year university students understanding of rate of change." *International Journal Math Educ Sci Technology* 29(3): 389-399.**

**Abstract:** A research method consisting of written tests and interviews was used to explore first-year students' understanding of fundamental calculus concepts. The analysis of the written and verbal responses to test items revealed significant misconceptions on which students' mathematical activities were based. This paper describes some of the common

errors and misconceptions relating to students' understanding of the 'rate of change' concept.

**Bezuidenhout, J. (2001). "Limits and continuity: some conceptions of first-year students." *International Journal Math Educ Sci Technology* 32(4): 487-500.**

**Abstract:** Examines first-year university students' (n=630) understanding of fundamental calculus concepts at three South African universities. Identifies several misconceptions underlying students' understanding of calculus concepts. Addresses some of the common errors and misconceptions related to students' understanding of 'limit of a function' and 'continuity of a function at a point'. (Author/ASK).

**Daniels, C., D. Grove, et al. (2006). "Command and Communities of Practice." *Air & Space Power Journal*: 52-62.**

**Abstract:** No abstract

**Esterhuyse, A. (2005). "The Military Educational Predicament: Identifying Core Educational Requirements." *Strategic Review for Southern Africa*: 100-122.**

**Abstract:** The recent Asmal Report on the South African Military Academy alluded to the fact that the South African Defence Force is not receiving the 'right products' from the Military Academy. This article is aimed at finding an answer to the question: 'What' should the focus of academic education in the preparation of armed forces be? It is suggested that a multi-layered approach should be followed. Underlying this approach is the recognition that the knowledge required to become a 'master of war' is diverse. Yet the overall balance favours the study of the so-called 'soft sciences'. This argument is rooted in the fact that the use of armed force-war-is a characteristic of human life; something that is undertaken by people. Thus the social or human sciences is paramount in the study of war. Four meta-theoretical knowledge clusters are identified as the essence of professional military education. These four knowledge clusters are rooted in an understanding of security; the military bureaucracy and professionalism; the employment of armed force; and the military operating environment.

**Esterhuyse, A. (2006). "Professional Military Education and Training: Challenges Facing the South African Military." *Defence Studies* 6(3): 377-399.**

**Abstract:** The article explores the challenges the South African National Defence Force (SANDF) faces in the training and education of its personnel. An exposition of the training and education in the different armed forces that were brought together in the SANDF serves as the foundation for the discussion. The training and educational needs of the armed forces since 1994 are briefly outlined. The article concludes with an overview of the most challenging issues the SANDF needs to address in order to professionalise its training and education: bureaucracy; experienced directing staff; lack of resources, discipline and research; and affirmative action and representativeness. [ABSTRACT FROM AUTHOR]

**Heinecken, L. and D. Visser (2008). "Officer Education at the South African Military Academy: Social Science but No Sociology?" *Armed Forces & Society* 35(1): 145-161.**

**Abstract:** This article reviews the status of military sociology in South African by examining where it is being taught and researched within sociology as a discipline and at the South African Military Academy (hereafter: Academy). The conclusion is reached that it has not

been a prominent area of academic focus possibly because of the fact that at present only once civilian university's sociology department presents a related course. Looking at the historic development of the academic offerings at the Academy, at no time has military sociology been presented as a course, although it is masked within some of the other social science disciplines. Only recently has the relevance of military sociology as a discipline in its own right been acknowledged, and it appears as if it may well find a place in the education of young officers at the Academy in the near future.

**Florian, H. 2002. Military Science in the 21st century – An Austrian perspective**

**Abstract:** No abstract

**Ilyichev, N. M. (2006). "What is the "Teaching Experience" in Military Today?" Military Thought 15(3): 188-199.**

**Abstract:** No abstract

**Karavaev, V. A. (2008). "Military Training of University Students: Deontological Issues during Field Camp Drills." Military Thought 17(4): 113-118.**

**Abstract:** IN PROFESSIONAL MILITARY education classes across the Air Force, the debate rages: "Are leaders born or made?" From the perspective of those being led, the answer might be more often than not, "Who cares?" The pertinent issue for these people is not whether nature or nurture produces leadership but how the organization ensures that those entering positions of authority are prepared to assume their leadership responsibilities. For newly assigned leaders, on-the-job training may be the least preferred course of study. Unfortunately, this is the norm in both the public and private sectors today.

**Kirillov, N. G. (2001). "Training of Military Engineers." Military Thought 10(6): 58-60.**

**Abstract:** Defense capability of the state depends to a large extent on the availability of highly skilled military cadre for which reason it is especially relevant to upgrade the standard of training in military higher educational institutions. Much depends here on the state of the system of military engineering education.

**Kober, E. 2017. A Science contested: American Military Science and the efficacy of instruction of the future**

**Abstract:** Since the days of Vegetius, Military Science has played an essential role in defining the body of knowledge that encompasses the practice of armed conflict in the contest of wills - human politics by other means - known as war. Though the essence, rigor, and certainty of military science has often been brought into question, its significance to understanding the art of war in the ever-changing face of warfare remains evident, tested by the virtues of battle and time. Military Science has progressed and adapted along with man's increased understanding of the world within which war takes place. It is my assertion that with the increased understanding of the world within which war takes place. It is my assertion that with the nuanced complexities found in today's network-laden, information-saturated, ultra-globalized environment, Military Science - as well as the educative methods to develop it - must adapt like never before.

**Moswetsi, W., J. Renken, et al. (2006). "Attitudes and perceptions of SA Military academy students toward Information and Communication Technology and computers." Scientia Militaria: South African Journal of Military Studies 34(1): 49-66.**

**Abstract:** The proliferation of computer technology in both our personal and professional lives, and particularly during the last decade, has created an environment in which there are varying perceptions of, and ideas about, the value of Information and Communication Technology (ICT) and computers. In order to benefit from this, especially in a defence environment, a realistic perception about the worth of computers needs to be established. This paper presents the findings of a survey that was conducted to determine attitudes towards ICT/computers among students of the SA Military Academy. Two hypotheses were tested: (1) There are significant differences in attitude towards computers between students of different Arms of the Service; gender; academic year groups; ranks; those having previous experience with computers; and those owning a personal computer (PC); (2) There are significant differences in perception towards the value of ICT/computers between students within these groupings. In brief, the study concluded that there was a significant difference between experienced and less experienced students in the perceived value of ICT/computers in the work place and their personal lives.

**Pope, J. 2012. An integrated approach to Military Science course design.**

**Abstract:**

This paper will investigate the literature surrounding the importance of course design, curriculum, assessment, and student learning. This paper will then examine the educational literature surrounding the approaches to course design with the renowned learning taxonomies of Dr. Benjamin Bloom and Dr. Dee Fink. This paper will then examine the training literature surrounding the training doctrine and strategy of the United States Army. This paper will then examine the synergy between the USMA Department of Military Instruction Instructor Handbook and the United States Army Doctrine and Training Strategies. This paper will then examine the synergy of the educational and training literature in the USMA Department of Military Instruction Instructor Handbook in terms of student learning and course design. This paper will then examine the literature surrounding "experiential learning." This paper will examine emerging literature on the effectiveness of "experiential learning."

This paper will then seek to combine the educational and training literature on course design to develop an integrated approach to the design of military science instruction.

**Smit, Hennie A. P.(2009). "Shaping the Environmental Attitude of Military Geography Students at the South African Military Academy." *Journal of Geography in Higher Education* 33(2): 225 – 240**

**Abstract:** Globally there is a growing environmental awareness among all segments of society, but research on the effect of environmental education in shaping the attitude of military students is lacking. Tertiary environmental education to officers of the South African Department of Defence is seated in the Department of Military Geography at the South African Military Academy. A structured questionnaire was used in 2002 and 2005 to determine whether a difference in attitude towards environmental issues between geography and non-geography students could be found at the South African Military Academy (Stellenbosch University). The military geography students outperformed their non-geography peers in both surveys.

**Strauss, B. (2008). "Military Education: Models from Antiquity." *Academic Questions* 21(1): 52-61.**

**Abstract:** A brief narrative description of the journal article, document, or resource. Unlike Westerners today, the Greeks and Romans put military training at the heart of their educational system. Examining the ancients' preoccupation with the inculcation of soldierly

skills and disciplines, Professor Strauss asks whether we can find profit in their example. (Contains 7 footnotes.)

**Visser, D. (2004). "The SA Military academy's educational offerings and the national threat perception." *South African Journal of Military Studies* 32(2): 61-88.**

**Abstract:** The national threat perception of a nation is an important guideline for the education of its officers, since it defines or anticipates the general military and socio-political milieu in which those officers must be prepared to operate. This paper traces the evolution of the threat perception of the South African Department of Defence since 1950 and the response of the South African Military Academy in terms of its educational programmes. It highlights the attitude of Defence Headquarters towards the Military Academy as a military-academic institution and the historical position of the Academy in the course of officer development. The paper also investigates the number and demographic profile of students routed through the Military Academy, which is central to these issues. Today, in the wake of the termination of the so-called Bush War on her borders and the liberation struggle within her frontiers, there is no clear, direct military threat against South Africa. In the absence of such a threat, the secondary functions of the SANDF, particularly regional peacekeeping and peace support operations, seem to occupy the centre stage. The paper therefore concludes with a perspective on the relevance of the Military Academy's current academic offerings to the preparation of SANDF officers for their perceived role scenario in the twenty-first century.

**Warwick, J. J. (2009). "The Dilemmas of Providing Language Instruction for the US Air Force." *Air & Space Power Journal*: 44-51.**

**Abstract:** No abstract

**McLeod, M. M. (2004). *Developing Intuitive Officers to Revolutionise Transformation in the 21st Century Military*.**

**Abstract:** The Department of Defense (DoD) officer socialization process fails to develop sufficient numbers of strategic leaders with the intuition and Emotional Intelligence (EI) necessary to head a changing 21st Century force, jeopardizing future transformation. This paper proposes building a process to grow intuitive leaders, those with the ability to synthesize elements of past experience and apply them in novel situations, in an environment where social controls foster shared values. It is in such a culture where EI leaders, those who can manage their feelings and balance motives with ethical behavior, have the chance to institutionalize transformation. The DoD, together with institutions around the world, lies at a crossroads; how do we transform into a 21st century military capable of revolutionary performance? While there is no single transformation model, current service plans focus on three areas: technology, doctrine, and personal development. The personnel piece is the focus of this proposal; building more flexible officers to unleash an organization capable of adapting to an unknown future. The officer development system, including day-to-day socialization, performance feedback, and promotion processes, largely ignores strategic leadership skills like intuition and EI skills should be directly incorporated into current socialization, training, and evaluation programs. The eventual goal is to change the military's culture by creating a new on-the-job leader development system which cultivates, develops, and promotes officers' intuitive and EI skills.